ENCYCLOPEDIA OF LIBRARY AND INFORMATION SCIENCE

VOLUME 24

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PRINTERS AND PRINTING (Continued)

THE UNITED STATES*

See also *Caxton, William,* and *Hispanic-American Printing*

A conspectus of the earliest printing in various parts of the United States is given in Table 1.

Printing in Cambridge and Boston in the 17th Century

Books and learning found a permanent home in New England within a decade and a half of the first landing on Plymouth Rock. In 1636 Harvard College and its library were established. At least as early as 1636 the noted colonial bookbinder John Sanders was residing in Boston, and he must have looked forward to the establishment of a press and the business it would bring him. Indeed, the needs of the college included a printer's services, and this fact was clearly recognized. On September 7, 1638, Reverend Edmund Browne wrote to a patron in England: "We have a Cambridge here, a college erecting, youth lectured, a library, and I suppose there will be a presse this winter. . . ."

> 1639. 1st month. A printing house was begun at Cambridge by one Daye at the charge of Mr. Glover, who died on seas hitherward. The first thing which was printed was the freeman's oath; the next was an almanack made for New England by Mr. William Peirce Mariner; the next was the Psalms newly turned into metre.

The press was on its way across the Atlantic. When the Reverend Jose Glover and his family set sail for Massachusetts in the summer of 1638, he had with him a press, type, and Stephen Daye, a locksmith. Glover died on the high seas, but the press, now the property of his wife, arrived safely and was set up in Cambridge, probably in late 1638. John Winthrop, governor of the Massachusetts Bay Colony from 1630 to 1649, has recorded the history of prototypography in English-speaking North America. The first entry in Winthrop's journal for 1639 reads:

The identity of "one Daye" has long been a subject of dispute. Many have assumed that the honor of having been America's first printer belongs to Stephen Daye, for on December 10, 1641, the General Court of Massachusetts voted that "Stephen Daye, being the first that set upon printing, is granted 300 acres of land where it may be convenient, without prejudice to any towne." However, there is very strong evidence to indicate that not Stephen Daye, but his son Matthew, was the "one Daye" mentioned by Winthrop. Matthew was still a minor in 1641, and his father may have received his land-grant for him.

Neither "The Oath of a Free-man" (simply the affirmation of allegiance to the government) nor "An Almanack for the Year 1639," by William Peirce, mariner, have survived. The only one of the three titles mentioned by Winthrop that survives

* The Bibliography for this section begins on page 52.

TABLE 1

Chronology of American Printing to 1800

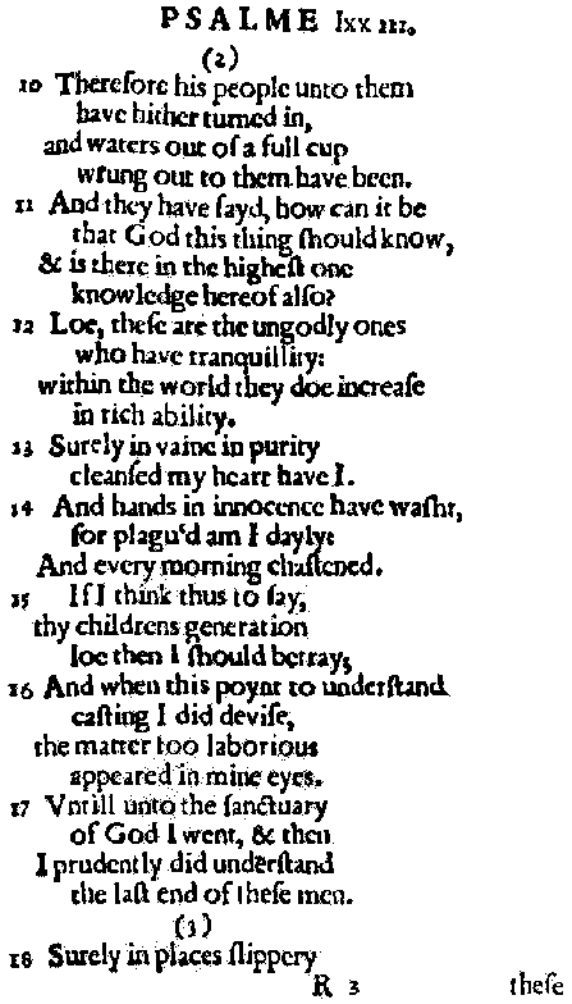
State	Town	Year	Printer	First certain imprint[a]
Massachusetts	Cambridge	1639	Matthew Day	[The Freeman's Oath]
Maryland	St. Mary's City	1685	William Nuthead	[Blank form] This Bill bindeth me . . . (August)
Pennsylvania	Philadelphia	1685	William Bradford	*Kalendarium Pennsylvaniense* (December)
New York	New York City	1693	William Bradford	Anno Regni, etc., The 10th of April 1694 [1693] An act for raising six Thousand Pounds, etc.
Connecticut	New London	1709	Thomas Short	An Act [for Making and Emitting Bills of Publick Credit]
Rhode Island	Newport	1727	James Franklin	[*Vindication and Relation*, by John Hammett]
Virginia	Williamsburg	1730	William Parks	[The New Tobacco Law]
South Carolina	Charleston	1731	George Webb	Anno Quinto Georgii II . . . At a Council . . . October 19, 1731
North Carolina	New Bern	1749	James Davis	*Journal of the House of Burgesses* . . . September 26 . . . October 18, 1749
New Jersey	Woodbridge	1754	James Parker	*The Votes and Proceedings of the General Assembly of the Province of New Jersey* . . . April 17, 1754 . . . June 21, 1754
New Hampshire	Portsmouth	1756	Daniel Fowle	[Proposals for the Publication of a Weekly Gazette] *The New Hampshire Gazette*
Delaware	Wilmington	1761	James Adams	*The Wilmington Almanack for 1762*, by Thomas Fox[b]
Georgia	Savannah	1762	James Johnston	*The Georgia Gazette* (1763)[c]
Louisiana	New Orleans	1764	Denis Braud	*Extrait de la Lettre du Roi à M. Dabbadie Directeur Général*
Vermont	Westminster	1780	Judah Padock Spooner and Timothy Green	[A Thanksgiving Proclamation]
Florida	St. Augustine	1783	John Wells and Charles Wright (?)	*The East-Florida Gazette*
Maine	Portland (formerly Falmouth)	1785	Benjamin Titcomb and Thomas B. Wait	*The Falmouth Gazette*

Kentucky	Lexington	1787	John and Fielding Bradford	*The Kentucke Gazette*
Tennessee	Rogersville (formerly Hawkins Court House)	1791	George Roulstone and Robert Ferguson	*The Knoxville Gazette*
Ohio	Cincinnati	1793	William Maxwell	*The Centinel of the North-Western Territory*
Michigan	Detroit	1796	John McCall	*An Act of the Fourth Congress*, December 1795
Mississippi	Fort Hill (formerly Walnut Hills near Vicksburg)	1798	Andrew Marschalk	*The Galley Slave*, by William Reeves

[a] The first known imprint from New Hampshire other than a newspaper is Nathaniel Ames's *Almanack for the Year 1757* (1756); from Georgia, *An Act to Prevent Stealing of Horses and Neat Cattle*, March, 1759 (1763); from Florida, Gale's Essay II, *On the Nature and Principles of Public Credit and the Case of the Inhabitants of East-Florida* (both 1784); from Maine, a broadside captioned Falmouth February 2, 1785; from Kentucky, *The Kentucke Almanack for 1788* (1788); from Tennessee, *Acts and Ordinances of the Governor and Judges, of the Territory of the United States of America South of the River Ohio* (Knoxville, 1793); and from Ohio, *The Laws of the Territory of the United States North-West of the Ohio* (1796). In each state except Tennessee these imprints came from the same town in which printing began. The first permanent newspapers other than those recorded as first imprints for their states are: Massachusetts, *The Boston News-Letter* (John Campbell, 1704); Pennsylvania, *The American Weekly Mercury* (Andrew Bradford, 1719); New York, *The New York Gazette* (William Bradford, 1725); Maryland, *The Maryland Gazette* (William Parks, 1727); South Carolina, *The South Carolina Weekly Journal* (Eleazer Phillips, Jr., 1732) and *The South Carolina Gazette* (Thomas Whitemarsh, 1732); Rhode Island, *The Rhode Island Gazette* (James Franklin, 1732); Virginia, *The Virginia Gazette* (William Parks, 1736); North Carolina, *The North Carolina Gazette* (James Davis, 1751); Connecticut, *The Connecticut Gazette* (James Parker, 1755); New Jersey, *The New Jersey Gazette* (Isaac Collins, 1777); Vermont, *The Vermont Gazette* (Judah Padock Spooner and Timothy Green, 1780); Delaware, *The Delaware Gazette* (Jacob A. Killen, 1785; no trace has been found of *The Wilmington Courant*, which Isaiah Thomas says that James Adams established); Louisiana; *Moniteur de la Louisiane* (Louis Dulcot, 1794); and Mississippi, *The Mississippi Gazette* (Benjamin M. Stokes, 1800).

[b] On November 5, 1761, Adams advertised *The Child's New Spelling Book*, the *Advice of Evan Ellis to his Daughter when at Sea*, and *The Merchant's and Trader's Security*, as well as the Fox *Almanack* for sale in *The Pennsylvania Gazette*, but he did not say that he printed the speller or *The Merchant's Security*. In the absence of surviving copies, the *Almanack* and the *Advice of Evan Ellis* must be considered the first definitely known Adams imprints from Wilmington.

[c] In March 1762, the Georgia Assembly passed an act to encourage Johnston, "lately arrived in this province from Great Britain" to serve as government printer at £100 sterling per annum, but almost nothing is known of his activities before he began to print *The Georgia Gazette* on April 7, 1763.



PSALME lxx iii.

(2)

10 Therefore his people unto them
have hither turned in,
and waters out of a full cup
wrung out to them have been.
11 And they have ſayd, how can it be
that God this thing ſhould know,
& is there in the higheſt one
knowledge hereof alſo?
12 Loe, theſe are the ungodly ones
who have tranquillity:
within the world they doe increaſe
in rich ability.
13 Surely in vaine in purity
cleanſed my heart have I.
14 And hands in innocence have waſht,
for plagu'd am I dayly:
And every morning chaſtened.
15 If I think thus to ſay,
thy childrens generation
loe then I ſhould betray;
16 And when this poynt to underſtand
caſting I did deviſe,
the matter too laborious
appeared in mine eyes.
17 Vntill unto the ſanctuary
of God I went, & then
I prudently did underſtand
the laſt end of theſe men.

(3)

18 Surely in places ſlippery

R 3 theſe

FIGURE 1. *Page from the* Bay Psalm Book *(Cambridge, 1640).*

today is the *Bay Psalm Book*, or *The Whole Booke of Psalmes*, to cite the original title provided by the editor, Richard Mather. (See Figure 1.) Eleven of the 1,700 copies of the first edition survive, and any one of them would fetch a king's ransom, for the *Bay Psalm Book* ranks second only to the 42-line Bible as a bibliophilic crown jewel. During the next 130 years there were 55 editions of this metrical translation of the Psalms made directly from the Hebrew into English, but no other edition can compare with the first of 1639 in significance for American printing history. The composition is crude but meticulous, and it is of some interest to note that Hebrew type was used (the press also had Greek type). As a literary monument, the *Bay Psalm Book* tells an eloquent story of the intellectual and spiritual interests of the Puritan community that produced it.

The first 5 years of the Cambridge press were not especially illustrious. Beginning in 1642 we have the Harvard Commencement theses, some four dozen of which were printed between 1642 and 1693 in Cambridge. It is a curious fact that the first surviving one (for 1643) is typographically modeled on similar documents for the University of Edinburgh. Soon after the first Harvard theses, the press

brought out a list of laws for the violation of which the death penalty was provided. The only other publication of the Cambridge press before 1645 which Stephen Daye remembered when he listed the works printed at the press 10 years later was a spelling book. It may be preserved as part of the *New-England Primer.*

In 1645 the Cambridge press brought out the first historical and political work printed in America, *A Declaration of Former Passages and Proceedings betwixt the English and the Narrowgansetts, a record of certain troubles with the Indians.* About 1646 Gregory Dexter, who had established a reputation in London as a printer before he moved to Rhode Island in 1644, was summoned to Cambridge "to set in order the printing press there" (according to a later but probably accurate tradition). He printed or helped to print the *Almanack* for 1646, the first of a long line of New England almanacs. At least he showed Matthew Daye how to print a salable almanac. On the 1647 almanac appear the words "Printed by Matthew Daye," but there is no such indication on any of the others. Elegiac verses on the death of a beloved minister, an early catechism (to be followed by more), and *The Book of the General Lawes and Libertyes Concerning the Inhabitants of Massachusetts* were the main publications from the Cambridge press other than the almanacs and academic documents up to the death of Matthew Daye on May 10, 1649. Some 10 or 11 pieces were printed by Matthew Daye, but three-fourths of them do not now exist. In all there are perhaps 25 surviving remnants of the first decade of printing in English-speaking North America.

In the October following Daye's death, Samuel Green, first of a puissant dynasty of American printers, took over the press. A quarter of a century later he wrote to the second John Winthrop that printing was:

> . . . the employment I was called unto when there was none in the country to carry it along after the death of him that was brought over for that work by Mr. Jose Glover, and although I was not before used unto it yett being urged thereunto by one and another of place did what by my own endeavours and help that I gott from some others that was procured, I undertook the work.

Soon thereafter appeared his first imprint, *A Platform of Church Discipline,* a document outlining the prevailing doctrines of New England Congregationalism.

The ownership and control of the Cambridge press were always somewhat nebulous. The widow Glover was nominally the owner of the press, and in 1641 she married Henry Dunster, president of Harvard College since the previous August. The press was moved to college property around 1645, and by 1656 it was definitely assumed to be part of the college inventory. No one seems ever to have known whether the press was the property of Reverend Glover or simply entrusted to his care, but it is known that 50 pounds had been given by benefactors of the colony to purchase the original type. Finally, the use of the press for government printing (notably for the *Declaration of Former Passages)* would seem to be distinct evidence of a proprietary interest on the part of public officials.

Samuel Green—"popular, versatile, faithful, and energetic" (according to S. E. Morison, historian of 17th-century Harvard)—was in charge of the press from 1649 until it ceased to operate in 1693. One of his first major undertakings was the 1651 edition of the *Bay Psalm Book* in the revision of President Dunster and Richard

Lyon, a tutor in the Dunster home. It is the most attractive book printed at the Cambridge press, and one surviving copy is in an interesting colonial binding possibly executed by John Ratcliffe. Green's business moved in accustomed lines, with almanacs, academic documents, laws, and religious tracts as his main business, but within a decade he was to have a major project on his hands.

The conversion of the heathen Indians was a matter of grave concern in 17th-century England, and London philanthropists gave generous contributions for this purpose. In 1649 Parliament had provided for the creation of a Corporation for Promoting the Gospel of Jesus Christ in New England, long known as the New England Company. For years the company supported the work of John Eliot, the "apostle to the Indians," with only a slight interruption when the restoration of Charles II made reorganization and a new name necessary. As early as 1651 Eliot had determined to give the Indians a Bible in their own language. By 1655 Genesis was in print in Algonquin, and Matthew was in print by the fall of that year. Work on the whole Bible began in 1660, and it was completed in 1663. There was an improved edition in 1685 and a third edition in 1710. (See Figure 2.)

The job was a bit too much for Samuel Green, and in 1660 Marmaduke Johnson, member of a well-known London printing and bookselling family, came to Cambridge under a 3-year contract to assist with the printing of the Indian Bible. Another press and more type were also sent. Johnson's personal conduct did not contribute to the smooth sailing of the project; for, although he was a married man, he involved himself in considerable trouble by dalliance with Green's daughter in sternly moral Cambridge. Although he later mended his ways, the printing was delayed. Green had an Indian apprentice who probably helped with the printing. He may have been James the Printer (later simply James Printer), the first craftsman of native ancestry to learn and practice the black art in English-speaking North America. Of Eliot's many difficulties we may cite but one: Among the Indians chastity was a masculine virtue only, and hence the ten virgins of the parable became "ten chaste young men."

Marmaduke Johnson's contract was extended for 1 year, but in 1664 he went back to London to fetch a press and type to set himself up as a printer in Cambridge. By 1665 there were three presses (two in Green's shop in the Harvard Yard) and two master printers in Cambridge. Johnson's first surviving independent printing is from 1666, *The Indian Grammar Begun*. The troublesome Johnson was probably the cause of the first censorship order of the Massachusetts General Court in 1665, and there were other restrictive orders in subsequent years, possibly aimed at him. However, Johnson had won enough community respect to hold his own by 1668.

For some unknown reason Green and Johnson made up their quarrel, and, with a single exception, all books printed in Cambridge in 1669, 1670, and 1671 bear the notation "Printed by S.G. and M.J.," or something similar. In 1672 they seem to have again begun to print independently. As early as 1668 Johnson had hoped to set up his press in the growing city of Boston, and he finally secured permission in 1674. He died on Christmas day of that year, and his type was immediately purchased by Green.

Job abche wunneetea Chap. I. *miſſi ukquttchuaongaſh*

ſukodtaſh, ut wututtoowheyeumoout, neane Mordecai noh Jew, kah Eſther kehcheſonkiq, kehtimomp, kah neane wunnoowahettit, wutche nagumau, kah wutche oikannemunnuoh, newaj mat metſehettes kah ummauonganoo.

32 Kah wuttinnaumatuonk Eſther, menehketeau yeuſh wutch Purim, kah wuſiukwhoſu ut bookut.

CHAP. X.

KAh ketaſſoot Ahaſuerus, ompweteaheau neh wadohkinitche ohkeit, kah kehtahbinne munnahhauaſh.

2 Kah wame unmenuhkeſue uſſeongaſh, kah miſſugkenuonk, kau nahtitteaonk ummiſſugkenoonk Mordecai, ne adt ketaſſoot tahſhinoot, ſunnummatta wuſſukwhoſinoaſh, ut oſukkuhwhonganoóut Mediac kah Perſiac ketaſſiotamwog?

3 Newutche Mordecai noh Jew noh aſuhkauau ketaſſoroh Ahaſueruſoh, kah miſſugken kenugke Jewſut, kah tapeneunk mataánunutcheh weemaioh, natinneham ummiſſinninneumoh owweenauwetuonganoo, kah wunohteáe kenoonau wame oukanoomuneoh.

Up-Bookum JOB.

CHAP. I.

NA mo woſketomp ut ohkeit Uz, noh uſſoweſu Job, kah noh woſketomp *a* pannuppeyeuu, kah ſampweſu, kah noh quothont Godoh, kah ahqueteau matcheſeonk.

a Chap. 2. 3.

2 Kah nekittesuau neſauſuktahſuoh wunnaumonuh, kah nishuoh wuttaunoh.

3 Kah wonk wunneetaſſeumoh neſauſuktahſhe muttannonganogkuſſuog ſhepſog, kah niſhwudt muttannonganogkuſſuog cameſſog, kah napanna tahſhe paſukoonog yoakſe oxenog, kah napanna tahſhe paſukoonog ſquoſhimwe aſſeſog, kah ahche miſſi wutteaſhiyeuoonk, newaj yeuoh woſketomp anuoukeoomau wame wutchekſuie woſketompuh.

4 Kah wunnaumonuh moncheoh, wewetuámmemiſhadtupoog, niſh noh paſuk ukkeſukodtum, kah annoteamoog kah wehkomaog niſhnoh wetompaſſinoh, weeche ummetſeumonaóont kah ouattamoomonaóont.

5 Kah niyeup, miſhadtupoue keſukodtaſh nuttſhik, neit Job annoteamoo nah oneetupanatamwaheonat, kah nompoae omohkeu, kah magoo chikohtáe magoongash, neadtahſinit wame, newutche Job noowau, paguodche nunnaumonog matcheſeog, kah *b* matánumáog Godoh, ut wuttahhoóut. yeu nagwutteáe wutuſſen Job.

b 1 Kin. 21. 10, 13.

6 Kah na mo keſukod, wunnaumonuh God paáhettit wunneepauinneaónt ut anaquabit Jehovah, kah wonk mattannit ukkenugke peyaomuh

7 Kah Jehovah unnau mattannittoo, toh kenoun? neit mattannit nampoohamauau Jehovah, kah noowau, wutch popoouthonat *c* ohkeit, kah wutch na ut ahaúhſukqueónt.

c 1 Pet. 5. 8.

8 Kah Jehovah unnau mattannittoo, ſun kenatwaeum nuttinnumun Job, newutche wame howan wuttinnauoh ut ohkeit, panuppeyeuu kah ſampweyeuo woſketomp, noh quoſhunt Godoh, kah ahqueteóou matcheſeonk?

9 Neit Satan nampoohamauau Jehovah, kah noowau, ſun Job quthau manittoo wutch monteag?

10 Suunummatta kouweeninneátauoh, kah weenu wekit, kah weene wame ne ahtunk niſh noh wutch? konantam wunnutchegane anakauſuonk, kah wunnetaſeumoh nano monaoh ut ohkeit.

11 Qut yeuyeu ſummagunuſh kenutcheg, kah muſſuniſh wame ne ahtunk, kah piſh kummattanamuk ut anaquabean.

12 Kah Jehovah unnau mattannitto, kuſſeh, wame ne ohtunk, ohteau ut kummenuhkeſuonganit, qut webe nehenwonche wuhhog, noh en ſummagunuhkon kenutcheg, neit mattannit ſohham wutch anaquabit Jehovah.

13 Kah nô keſukod wunnat monuh kah wuttaunoh appuoh, metſuog kah wuttattamwog wine, wunohronukquiſſooh wekit.

14 Kah na uppeyon annoonaen Jobut, kah noowau, oxinog anaſkhamwog kah aſſeſog, noh kiſhke tanodtuppoog

15 Kah Sabeanſog ukquentaunuh, kah ummonchanouh: nux kah nag nuſhaog kittinneumoh naſhpe en kenag togkodteg, kah webe nen nuſſu nuppohquohham, kuttinnunat.

16 Aſh pamoadt, onkatog wonk peyau, kah noowau, wunnoorom God penuihau wutch keſukqut, kah mahchikkuſwau ſhepſoh, kah wuttinneumuneuk, kah unmohtupáuuh, kah webe nen nuſſu nuppohquohham, kuttinnunat.

17 Aſh pamoadt, onkatog wonk peyau, kah noowau, Caldeanſog niſhwe chipwuihaheaog, kah quentauaog cameſoh, kah ummonchanouh, nux kah nuſhaog wuttinnumuneuk, naſhpe an kenag togkodteg, kah webe nen nuſſu nuppohquohham, kuttinnunat.

18 Aſh pamoadt, onkatog wonk peyau,

FIGURE 2. *John Eliot's Indian Bible (printed by Samuel Green and Marmaduke Johnson, Cambridge, Mass., 1661–1663).*

The press, however, and the other equipment in Johnson's shop were acquired by John Foster, a native-born American and a Harvard graduate of 1667. The versatile Foster was also a wood engraver, and he illustrated several of his publications with rude but effective cuts. Most noteworthy is his "Mapp of New England" to accompany William Hubbard's *Narrative of the Troubles with the Indians in New-England* (Boston, 1677), the beginning of book illustration in English-speaking America. Foster's separately issued portrait of Richard Mather is also important in the history of American wood engraving.

Foster died in 1681, and the Boston press was temporarily managed by Samuel Sewall, the noted diarist and a personage of much importance in the community. Sewall's administration was short-lived, and in the same year the second Samuel Green (born in 1648) took over the business. This Green died in the smallpox epidemic of 1690.

The first Samuel Green had 19 children, of whom three sons—Samuel, Jr., Bartholomew, and Timothy—learned printing. Bartholomew helped his father in Cambridge until the press ceased operation there in 1692, and the younger man then procured fresh type and moved to Boston. The three Green boys were progenitors of a printing family whose fame in America is comparable to that of the Estiennes or Elzeviers in Europe. The Greens printed in Massachusetts, Connecticut, Maryland, and Virginia. The dynastic continuity of the Greens exceeded that of other such famous American printing families as the Spooners, the Fowles, the Franklins, and the Bradfords. The last was Jonas Green, five generations removed from Samuel, who passed away at Annapolis, Maryland, in 1845.

Bartholomew Green had begun to print in Boston in 1690, but a fire destroyed his shop and his equipment, and he worked with his father in Cambridge for the next 2 years, after which he again set up his business in Boston. He and his successors worked in Boston without interruption until the evacuation of the city in 1776, and his record was such that Isaiah Thomas felt free to call him "the most distinguished printer of that period in this country." Green's most important service to American culture was perhaps to begin *The Boston News-Letter* on April 24, 1704, and to continue it for 18 years. Charles Evans's statement that it was "the first newspaper coutinuously published in what is now the United States of America" is correct but needs annotation. On September 25, 1690, the first issue of *Publick Occurrences both Forreign and Domestick* appeared in two folio leaves with a colophon reading: "Boston, Printed by R. Pierce, for Benjamin Harris, at the London-Coffee-House, 1690." It was published without license, and the Provincial Council immediately expressed its displeasure and issued an order of suppression. No further numbers were published. The enterprising Harris was also the publisher of the first American edition of the *New-England Primer*, of which some 6 to 8 million copies were sold in different editions over the next century and a half.

The career of Bartholomew Green, Junior, was somewhat less distinguished, but he deserves special mention for the last act of his life. He was born in Cambridge in 1699 and printed in Boston until 1751, when he decided to move to Halifax, Nova Scotia. He died before he reached Halifax, but one of his former partners, John Bushell, took up the business and became the first printer in Canada. In 1752

Bushell started the first Canadian newspaper, the *Halifax Gazette*. Activities of other Greens will be noted in connection with the origins of printing in Connecticut.

Printing flourished in Boston throughout the 18th century and to the present day, although Philadelphia, and later New York, became the publishing centers of English-speaking North America. It is significant that virtually all 18th-century Boston printers felt the pressure of censorship from the council, and some found it so severe that they packed their equipment and moved elsewhere. Thus the first printing in Rhode Island and New Hampshire was the direct result of censorship in Boston.

The Spread of Printing in New England and the Middle Colonies

James Franklin, Benjamin's elder brother, who appears as such an unlovable character in the latter's *Autobiography*, was one who fared poorly with the Boston censors. In 1722 he was charged with printing allegedly seditious material in his *New-England Courant*, described by Increase Mather with picturesque invective as being "full freighted with nonsense, unmannerliness, raillery, profaneness, immorality, arrogance, calumnies, lies, contradictions, and what not, all tending to quarrels and divisions." After he was imprisoned for a short term on these charges, Franklin probably felt insecure in Boston, and he moved to Newport, Rhode Island, where in 1727, he issued the first two pieces printed in that jurisdiction: John Hammett's *Vindication and Relation: Giving an Account, of His Separating from the Baptists, and Joining the Quakers*, and *Poor Robin's Rhode-Island Almanack*, for the year 1728. On September 27, 1732, Franklin printed the first number of his *Rhode-Island Gazette*, the first newspaper in that colony. Four years later James Franklin died, but his widow Ann carried on the business until her death in 1763. In 1758 she initiated the publication of the still surviving *Newport Mercury*. The widow Franklin is perhaps the outstanding example of several colonial American women who conducted a successful printing business when it could not be continued by a husband, brother, or son because of death or some other reason.

New Hampshire, like Rhode Island, is also indebted to the censors of Boston for the beginning of printing in that state. In 1754 Daniel Fowle was jailed and fined at a somewhat irregular trial in Boston for printing and selling a pamphlet entitled *The Monster of Monsters*, by Thomas Thumb, Esq. The pamphlet criticized the Massachusetts Assembly, which was then considering an excise act, and the legislators had him jailed and fined the cost of the proceedings. As his swan song to Boston, Fowle printed two pamphlets, *A Total Eclipse of Liberty* (1755) and *An Appendix to the Late Total Eclipse of Liberty* (1756). In August of the latter year he packed his equipment and moved to Portsmouth, New Hampshire. Fowle himself has recorded the prototypographical history of New Hampshire in Ames's *Almanack for the Year 1757*: "The first Printing Press set up in Portsmouth, New Hampshire, was in August 1756; the Gazette publish'd the 7th of October; and this Almanack November following." The *Portsmouth Herald* of today is a lineal descendant of Fowle's *New Hampshire Gazette*. It is of some interest to note that the second printer

in New Hampshire was Thomas Furber, a native of Portsmouth who had learned to print from Fowle. Some local fire-eating Whigs, who considered Fowle and his *Gazette* "too timid in the cause of liberty," persuaded Furber to start a rival paper, but it lasted barely a year.

In spite of the oppressive measures taken by colonial authorities in Boston and, as we shall note later, in other American communities as well, the American printer actually enjoyed a relatively great degree of freedom. In old England, printing had been restricted to London, York, and the university towns between 1586 and 1693. However, printing had begun to spread in English-speaking North America even before the last of these restrictive acts was repealed. During the 17th century, American authors sent their manuscripts to London, or, if they were New Englanders, to Cambridge or Boston; but toward the end of the century the times began to change. By 1693 there were presses in Cambridge, Boston, Philadelphia, and Saint Mary's City in Maryland; and William Bradford began to print in New York in this same year. The rapid spread of printing in the colonies is illustrated by the fact that between 1639 and 1762, when James Johnston established a press in Savannah, Georgia, 25 towns had presses, and there were over a hundred master printers. The press ranked with the pulpit as a formative factor, influencing public opinion, and the press was one of the powerful elements in inciting to revolution in 1776 and in maintaining the patriots' morale during the struggle.

Thus the second New England jurisdiction to receive printing was Connecticut, for in 1708 Governor Gurdon Saltonstall and his council decided that the public welfare required the presence of a printer in that colony. Quite naturally, he turned to the Green family in Boston and attempted to persuade Timothy Green, son of the first Samuel Green, to move his shop from Boston to New London. Green declined to exchange "a certainty for an uncertainty," and Saltonstall then made his proposition to Thomas Short, also of Boston. In the spring of 1709 Short moved to New London and printed two short pieces the following June: the first (most probably), *An Act [for Making and Emitting Bills of Publick Credit]*, and the second, *A Proclamation for a Fast Ordered on 15 June 1709*. Three years later Short died and was succeeded in 1713 by Timothy Green, whose apprehensions about the future of Connecticut for business seem to have been allayed. Green was a clever and resourceful man. Once when he was printing an almanac he found that his type case contained no types for the signs of the zodiac. He came to his own rescue by cutting the signs on the ends of quads and lengthening them to type height. Timothy, Jr., went with his father to New London, and subsequently he printed both in Boston and New London. Four generations of Greens printed in New London, New Haven, Hartford, and elsewhere in Connecticut. There was no newspaper in Connecticut until James Parker began to publish *The Connecticut Gazette* in New Haven on April 12, 1755.

The third Timothy Green (1737–1796), a nephew of Timothy, Jr., printed in New London for most of his life. With his brother-in-law Judah Padock Spooner, he was associated in printing ventures at Norwich, Connecticut; Hanover, New Hampshire (called Dresden at that time); and Westminister, Vermont. The undertaking at Hanover was ostensibly a partnership of the brothers Judah Padock and

Alden Spooner. On October 18, 1778, Alden Spooner printed a *Thanksgiving Proclamation* in Dresden (Hanover); and while this locality was claimed by Vermont, it was later to be a part of the state of New Hampshire. The first printing in Vermont proper was not done until 2 years later when a new press was established in Westminister, Vermont, sponsored by the authorities. The appointment went to Judah Padock Spooner and Timothy Green, and on November 1, 1780, they (or their agent) printed 80 copies of a Thanksgiving proclamation. On December 14, 1780, the first issue of the first Vermont newspaper, *The Vermont Gazette*, was issued from this same office in Westminster.

Printing began in Maine in 1785 when that state was still a part of Massachusetts. Maine did not become a state until 1820, although efforts had been made to colonize the Kennebec area as early as 1607. The first printers were Benjamin Titcomb and Thomas B. Wait, and their first imprint was Volume 1, Number 1 of the *Falmouth Gazette and Weekly Advertiser,* issued on January 1, 1785, in the city now known as Portland. When the name of Falmouth was changed to Portland, the paper became known as the *Cumberland Gazette.* While there is no definite evidence that the paper was founded primarily to further the separation of Maine from Massachusetts, it is obvious from an examination of the early issues that the paper served this purpose. When Wait began to print in Portland, he had intended that his enterprise be a partnership with Peter Edes of Boson. The latter, however, found more promising opportunities in Boston, and it was a decade later that he finally decided to go to Maine and establish himself as a printer in Augusta. His office flourished and assumed a considerably greater importance than that of Titcomb and Wait.

Printing came to Philadelphia with a bit of bombast not thoroughly consistent with the supposed humility of the new Quaker commonwealth. In 1685 William Bradford, son-in-law of the Quaker printer Andrew Sowle, of London, printed in Philadelphia the *Kalendarium Pennsilvaniense* with the following announcement: "After great charge and trouble, I have brought that great Art and Mystery of Printing into this part of America." We shall see that Bradford's beginnings were none too auspicious, but he was the herald of an age that was to see Philadelphia become the most important center of printing in colonial America. Bradford and his family, the two Christopher Sowers, Benjamin Franklin, William Goddard, and others were to give the Quaker City her preeminence in the black art.

Bradford must have gone about his business vigorously. In 1690 he and Samuel Carpenter established the first American paper mill on the Wissahickon River in what is now Fairmount Park in Philadelphia. William Rittenhouse, a Dutch papermaker, was placed in charge. Soon he took over full custody of the mill, and he was followed in the business by several generations of his family. Pennsylvania retained this early leadership in papermaking throughout the colonial period.

The Quaker masters of Philadelphia were uneasy about the existence of a press from the beginning, and they made things unreasonably difficult for Bradford. Samuel Atkins, editor of the *Kalendarium* of 1685, had offended the Quaker officials by referring to William Penn as "the Lord Penn," and there were other annoying incidents. In 1692 Bradford printed a broadside by the Philadelphia superintendent

of schools, George Keith, entitled *An Appeal from the Twenty-eight Judges to the Spirit of the Truth.* Bradford was charged with violation of the Parliamentary Press Restriction Act of 1662, the very law which the Quakers themselves had evaded so skillfully! There was no definite verdict in the trial, but at least one quaint incident is worth repeating. The actual type from which the allegedly seditious matter was printed was introduced into the evidence, and while it was being examined one of the jurors carelessly pied the form, thus destroying part of the evidence. At last Captain-General Benjamin Fletcher, governor of both New York and Pennsylvania, ordered dismissal of the case; and when Bradford's printing materials were restored to him, he was installed as the royal printer in New York.

Bradford was a courageous man in many respects. What is probably the first New York imprint is his *New-England's Spirit of Persecution Transmitted to Pennsilvania* (1693). One of Bradford's statements of his case before the Quaker authorities is a plea for freedom of the press that Milton might have written:

> Governour, it is my employ, my trade and calling, and that by which I get my living to print; and if I may not print such things as come to my hand, which are innocent, I cannot live. . . . If I print one thing to-day, and the contrary party bring me another tomorrow, to contradict it, I cannot say that I shall not print it. Printing is a manufacture of the nation, and therefore ought rather to be encouraged than suppressed.

After Bradford left Philadelphia, there was no printer in the city for 6 years. In 1699 a Dutchman, Reynier Jansen, began to print in Philadelphia, but he was really an agent of Bradford. He died in 1705 and was succeeded by his sons, who had assumed the varying English names of Tiberius Johnson and Joseph Reyners. In 1707 one Jacob Taylor, an almanac maker, set up a printing shop in Philadelphia, but it is likely that he became inactive as a printer when Andrew Bradford, William's son, came to Philadelphia as a printer in 1712. Until 1723, when Samuel Keimer began to print in Philadelphia, Andrew Bradford had no local competitors, and he was the outstanding Philadelphia printer until Benjamin Franklin came into prominence. On December 22, 1719, he issued the first number of the first Pennsylvania newspaper, the *American Weekly Mercury.* It is of some interest to note that as late as 1739 the *Mercury* bore the imprint: "Printed by Andrew and William Bradford"—thus indicating that the older man retained a financial interest in the business, although he resided in New York from 1693 on. Andrew's brother, William Bradford II, was not a printer, but his son, William Bradford III, was apprenticed to his uncle Andrew and became his partner in 1742. William Bradford III established the *Weekly Advertiser, or Pennsylvania Journal* on December 2, 1742, and continued to publish it until 1778, part of the time in partnership with his son Thomas Bradford. The Bradfords of Pennsylvania were not related to the Bradfords of Kentucky, although both have a firm place among the royal families of printing in America.

Printing might have come to New York earlier than it did if James II and his advisers had not been opposed to the spread of printing in the colonies. When the last Stuart was crowned in 1685, one of the first acts of his brief reign was the following directive to Governor Dongan in New York:

> And for as much as great inconvenience may arise by the liberty of printing within our province of New York; you are to provide by all necessary Orders that noe person keep any press for printing, nor that any book, pamphlet or other matters whatsoever bee printed without your special leave and license first obtained.

We will note subsequently that the history of printing in New York is marred by ugly cases of attempts at suppression and that the beginning of William Bradford's residence in Manhattan in 1693 was no automatic sign for a new era.

After William Bradford defied the Quakers one final time with *New-England's Spirit of Persecution Transmitted to Pennsilvania*, he settled down to conduct a prosperous business of printing, much of which was publication of official documents. It is barely possible that Fletcher, hardly a crusader in the cause of freedom, brought Bradford to New York to satisfy his own vanity. In the winter of 1693, just before he dismissed the Bradford case in Philadelphia, Fletcher had conducted a successful punitive expedition up the Hudson River against the French and Indians, who were threatening the area around Schenectady. The story of the campaign is recorded in Nicholas Bayard's *Narrative of an Attempt Made by the French of Canada upon the Mohaques Country,* printed by William Bradford in New York in 1693. On November 8, 1725, Bradford brought out the first issue of the *New York Gazette*, and he continued to publish it for 19 years. When he died in 1752 at the of 92, he was considered one of the most respected and successful businessmen in New York.

The second printer in New York, John Peter Zenger, bears one of the most celebrated names in American intellectual history, but this circumstance is due neither to his ability as a printer nor to any distinction as a thinker, rather to a fierce, unrelenting sense of personal independence and a dogged passion for liberty. Zenger came to New York from Germany as a child, and he was promptly apprenticed to William Bradford in 1710. A decade later he had completed his term and went to Chestertown, Maryland, but none of his work there has survived. Back in New York in 1723, he probably went to work for William Bradford. At any rate, in 1725 he and Bradford issued a *Klagte van Eenive Leeden der Nederduytse Hergormde Kerk, Woonende op Raretans*, under a joint imprint. In the next year he was in business for himself.

About this time there was a sharp opposition between the royal administration of Governor William Cosby, one of New York's most unenlightened colonial executives, and certain popular leaders. Bradford's *New York Gazette* represented Cosby and his adherents, since Bradford was the public printer. The opposition arranged with Zenger to print a paper for them, and accordingly the first issue of the *New York Weekly Journal* appeared on October 5, 1733. Cosby became extremely indignant, but when he attempted to take action against Zenger in November 1734, he found he had little popular support. High handedly he ordered the imprisonment of Zenger, who was incarcerated for 35 weeks and had only "the Liberty of Speaking through the Hole of the Door to my Wife and Servants." When the case came to trial, Andrew Hamilton of Philadelphia, one of the most distinguished members of the colonial bar, appeared for the defense. Hamilton readily admitted the fact

of publication; but, contrary to an earlier ruling of the court, he argued that the jury was the judge of the law as well as the facts and that if Zenger had told the truth, there was no libel. A verdict of "not guilty" was returned. Livingston Rutherfurd has summarized the real meaning of the Zenger case in his *John Peter Zenger: His Press, His Trial:* "The liberty of the press was secure from assault and the people became equipped with the most powerful weapon for successfully combating arbitrary power, the right of freely criticizing the conduct of public men, more than fifty years before the celebrated trial of 'Junius' gave the same privilege to the people of England." A great legal principle was established, but the spirit of the ruling was in no sense secure. As late as 1799, in an age presumably far more enlightened and under a supposedly democratic republic, the Vermont printer Anthony Haswell was the victim of "the most brutal official interference with the person and rights of a printer on record in this country" (Wroth).

The third important early printer in New York was James Parker. Although, like Zenger, he came into conflict with the authorities more than once (and, unlike Zenger, acquitted himself with a show of subservience and payment of fines), he succeeded William Bradford as public printer in 1743 and held this position until 1761. The most important detail of his biography, however, is that in 1754 he established the first permanent printing press in New Jersey, located in his native community of Woodbridge. The first imprint at Woodbridge of which we have certain knowledge is *The Votes and Proceedings of the General Assembly of the Province of New Jersey . . . April 17, 1754 . . . June 21, 1754.* Not until 1758, however, did Parker receive an official appointment as government printer of New Jersey, and in the meanwhile the official work continued to be done by the younger William Bradford in Philadelphia. New Jersey did not have a newspaper until Issac Collins established his *New Jersey Gazette* at Burlington on December 5, 1777.

The fact that the provincial legislature of New Jersey went to the neighboring colonies of Pennsylvania and New York to find a printer for official work and had done so for several decades before James Parker started his Woodbridge press poses some bibliographical problems. It is most likely that the first printing in New Jersey was done in 1723 at Perth Amboy by William Bradford. Bradford was New Jersey's public printer during almost all the time from 1703 until 1733. The New Jersey session laws for 1723 bear the imprint: "Printed by William Bradford in the City of Perth-Amboy, 1723." Obviously he operated only temporarily in New Jersey since no other similar imprints exist. It is mostly likely that Bradford came to Perth Amboy to print paper money, an operation which probably had to be done under the direct supervision of the authorities, and that he decided to do the one official job of the year while his press was in New Jersey. Samuel Keimer was also in New Jersey in the city of Burlington, in late 1727 or early 1728, to print paper money on a copper plate press devised by Franklin for this job. As Franklin indicates in his *Autobiography,* he and Keimer were in Burlington for 3 months for this job, and it seems more than likely that Keimer also may have moved his letterpress printing press to Burlington at the same time to do some work on it. It is very probable that the statutes of 1728, as their imprint clearly says, were printed in Burlington,

and under precisely the same circumstances that the elder William Bradford printed the statutes of 1723 in Perth Amboy.

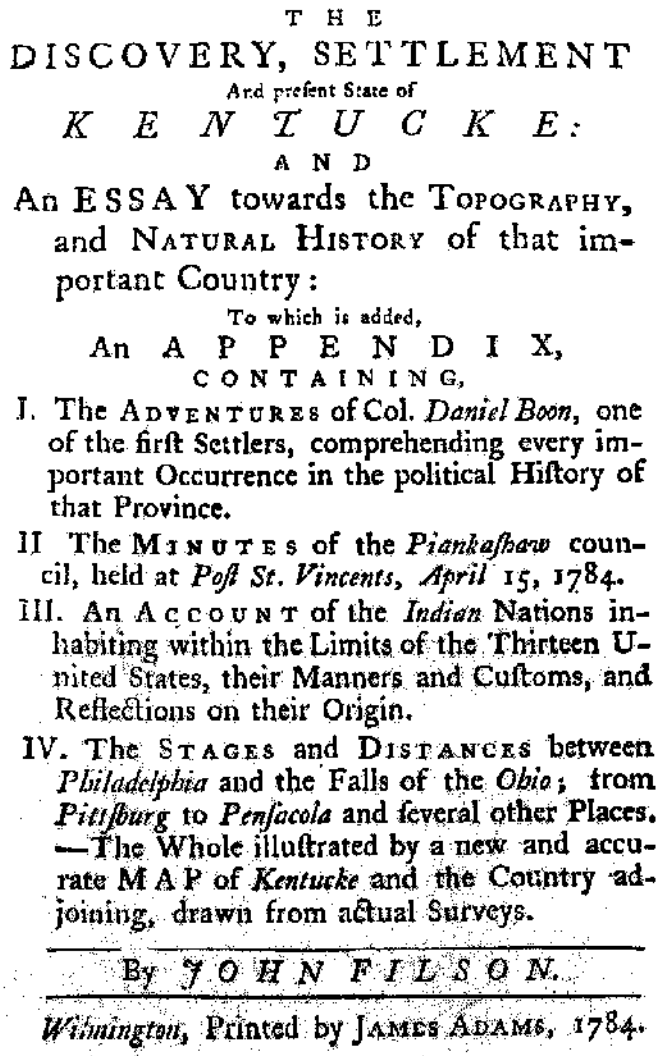
Delaware, like New Jersey, looked upon Philadelphia as its metropolis for many years, and the printing for this colony was performed by various shops in Philadelphia until 1761. In that year James Adams, an Irishman who had worked for Franklin and Hall in Philadelphia for 7 years, moved his shop to Wilmington, Delaware, and produced four imprints that fall. The chronology is not quite certain, and only two of the publications, a broadside entitled *Advice of Evan Ellis to His Daughter When at Sea* and Thomas Fox's *Wilmington Almanack for 1762*, are still in existence. Except for a slight interruption during the early years of the Revolutionary War, Adams continued to print in Wilmington until his death in 1792, and he trained four sons to take up the craft. Perhaps his most famous publication is John Filson, *The Discovery, Settlement, and Present Status of Kentucke* (1784; see Figure 3), a book which had a tremendous influence in furthering the settlement of the West. Adams did not go into newspaper publication but left that field to Jacob A. Killen, who founded the province's first newspaper, the *Delaware Gazette; or, the Faithful Centinel*, in June 1785. After various changes of ownership, this paper was purchased in 1796 by William C. Smyth, who also brought to Delaware the honor of being the place of publication of another famous 18th-century American book, John Dickinson's *Letters of Fabius in Favor of the Adoption of the Constitution*.

Printing in the South Before the Revolution

The intellectual climate of the southern colonies was not particularly hospitable to the introduction of printing, even though the first permanent settlement had been made in Virginia over a dozen years before the Pilgrims landed at Plymouth. Characteristic of the attitude of the ruling classes was the famous remark of the royal governor of Virginia, Sir William Berkeley: "But, I thank God, there are no free schools nor printing, and I hope we shall not have these for a hundred years; for learning has brought disobedience, and heresy, and sects into the world, and printing has divulged them, and libels against the best government. God keep us from both."

Thus it was a mistake when John Buckner, a wealthy Virginian, had a printer named William Nuthead brought to Jamestown in 1682. Nuthead began at once to print the acts of a recent assembly, but he managed to complete only two sheets before he and Buckner were hauled before the governor, Thomas Lord Culpeper. The printer and his patron were enjoined against printing anything "until the signification of His Majesties pleasure shall be known therein." In 1684 Lord Francis Howard of Effingham succeeded Culpeper and brought with him the unqualified royal order that "no person be permitted to use any press for printing upon any occasion whatsoever." It was almost a half a century later that printing was resumed in Virginia when William Parks set up his press in Williamsburg.

Nuthead had no reason to stay any longer in Virginia, but he was determined



THE
DISCOVERY, SETTLEMENT
And preſent State of
KENTUCKE:
AND
An ESSAY towards the TOPOGRAPHY, and NATURAL HISTORY of that important Country:
To which is added,
An APPENDIX,
CONTAINING,

I. The ADVENTURES of Col. *Daniel Boon*, one of the firſt Settlers, comprehending every important Occurrence in the political Hiſtory of that Province.

II The MINUTES of the *Piankaſhaw* council, held at *Poſt St. Vincents, April* 15, 1784.

III. An ACCOUNT of the *Indian* Nations inhabiting within the Limits of the Thirteen United States, their Manners and Cuſtoms, and Reflections on their Origin.

IV. The STAGES and DISTANCES between *Philadelphia* and the Falls of the *Ohio*; from *Pittſburg* to *Penſacola* and ſeveral other Places. —The Whole illuſtrated by a new and accurate MAP of *Kentucke* and the Country adjoining, drawn from actual Surveys.

By *JOHN FILSON.*

Wilmington, Printed by JAMES ADAMS, 1784.

FIGURE 3. *One of the most important and scarcest of all 18th-century imprints, a book which had a powerful influence in opening the trans-Allegheny West.*

to print in the new world. Accordingly, he moved to Saint Mary's City, then the capital of the neighboring colony of Maryland, and set up shop there. In November 1685 there was a record that Nuthead received 1,650 pounds of tobacco (then legal tender) from a government official, and it seems apparent that he was printing in Saint Mary's City before this date if we accept this receipt as evidence of payment for past services. Moreover, there is a blank form beginning. "This Bill bindeth me . . ." filled in with the name of a resident of Saint Mary's County, Maryland, and dated August 31, 1685. Since William Bradford was still in England in August 1685 and since the *Kalendarium Pennsylvaniense* was not printed until the end of December 1685 or even possibly in January 1686, Maryland must be accorded the honor of being the second colony in which there was an active printing press, and Saint Mary's City the third city after Cambridge and Boston.

Little is known of Nuthead's subsequent activities until his death in Saint Mary's

City late in 1694 or early in 1695. Except for some blank forms similar to the one already mentioned, there survives but a single a copy of one Nuthead imprint, a broadside *Address of the Representatives of their Majestyes Protestant Subjects in the Province of Mary-Land*, "printed by order of the Assembly at the Citty of St. Maryes August: 26th. 1689." After William Nuthead died, his trade was carried on by his widow, Dinah Nuthead, who followed the government when it moved from Saint Mary's City to Annapolis. Although we have only five blank forms attributed to the Annapolis press of Dinah Nuthead, she is significant as the first of several lady printers who distinguished themselves during the 18th century when a male member of the family was no longer able to carry on.

The next printer in Maryland was Thomas Reading, of whose work several specimens survive. Reading died in 1713, and 7 years elapsed before Zenger came to Chestertown in 1720. Again there was no printer in Maryland after Zenger's departure until William Parks set up his shop in Annapolis in 1726. His first Maryland imprint was the *Acts of the Assembly* for 1727. In September 1727 Parks initiated the *Maryland Gazette*, the first newspaper south of Pennsylvania, and he continued to publish it until 1734. There was no printing in Baltimore until 80 years after the art had been introduced in the colony. In 1765 Nicholas Hasselbalch, a papermaker who had learned printing from Christopher Sower the Elder, set up his shop in Baltimore. His first imprint was John Redick's *A Detection of the Conduct and Proceedings of Messers. Annan and Henderson at Oxford Meeting-House*, April 18, 1774.

If Maryland was indebted to Virginia for her first printer, she repaid the debt properly in 1730 when William Parks expanded his activities and began to print in Williamsburg, the capital of Virginia and the seat of the College of William and Mary. Evidently Parks considered his Virginia business more important that his Maryland business, for an act of the Maryland Assembly in April 1737 charged him with neglect of public printing. Soon thereafter Parks moved his equipment from Annapolis to Williamsburg, and Maryland had no printer.

Parks's first three Virginia imprints are lost. We know only the titles: *The New Tobacco Law*, *The Acts of the Virginia Assembly for the May Session of 1730*, and a commercial manual entitled *The Dealer's Pocket Companion*. However, two imprints from later in 1730 are extant. One is Governor William Gooch's *Charge to the Grand Jury*, the first specimen of Virginia printing that has survived; and the second is John Markland's *Typographia, an Ode on Printing*, the first literary encomium to the black art published in America. (See Figure 4.) In 1736 Parks founded the important *Virginia Gazette*, which he continued until his death in 1750. The subsequent history of the *Virginia Gazette*, or rather of its namesakes, throughout the rest of the 18th century is quite complicated, and at one time three different *Virginia Gazettes* were being published in two separate towns. It is likely that the name was retained on account of a literal interpretation of the law that certain legal notices had to be published in the *Virginia Gazette*.

William Parks was a citizen of unusual stature—industrious, versatile, and widely respected. He published a substantial list, covering the fields of religion, politics, and economics in addition to public documents. (See Figure 5.) His business ac-

(5)

TYPOGRAPHIA.

AN

ODE,

ON

PRINTING.

I.

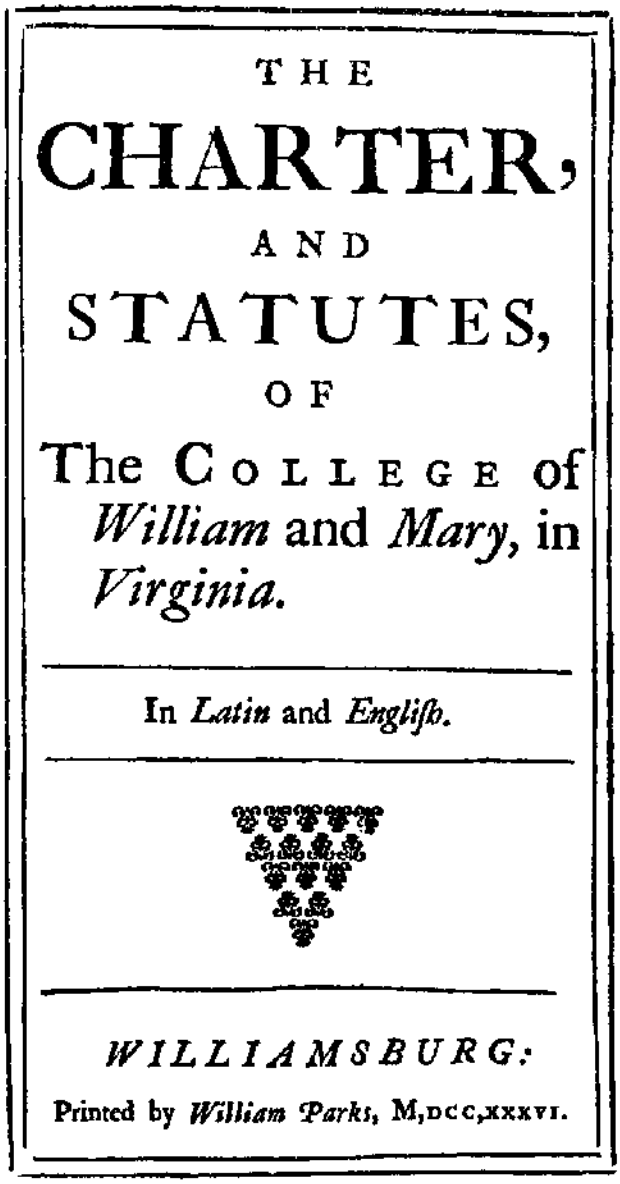
YE NYMPHS, who o'er *Caſtalian* Springs,
With joint Command preſide,
Who trill the Lyre's ſonorous Strings,
Record the great and glorious Things,
Of Godlike *Rulers*, matchleſs *Kings*,
And poetic Numbers guide;
Daughters of eternal *Jove*,
Gently to my Aſſiſtance move:

B Whether

FIGURE 4. *An American encomium of the art of printing (William Parks, Williamsburg, Va., 1730).*

tivities included bookbinding, bookselling, and papermaking. In 1744 he established a paper mill, but its history, if any, after Parks's death is obscure. One of the quaintest notes in the history of American papermaking is a poetic appeal for rags for this mill which appeared in the *Virginia Gazette* on July 26, 1744, over the signature of J. Dumbleton. In part it reads:

> The sage philosophers have said
> Of nothing, can be nothing made:
> Yet much thy will, O Parks, brings forth
> From what we reckon nothing worth . . .



THE

CHARTER,

AND

STATUTES,

OF

The COLLEGE of *William* and *Mary*, in *Virginia.*

In *Latin* and *Engliſh.*

WILLIAMSBURG:

Printed by *William Parks*, M,DCC,XXXVI.

FIGURE 5. *The characteristic balance, restraint, and vigor of William Parks is apparent in this title page.*

Ye Fair, renown'd in Cupid's Field
Who fain would tell what Hearts you've killed;
Each Shift decay'd, lay by with care;
Or Apron rubb'd to bits at—Pray'r.
One Shift ten Sonnets may contain,
To gild your Charms, and make you vain:
One Cap, a Billet-doux may shape,
As full of whim, as when a Cap,
And modest 'Kerchiefs Sacred held
May sing the breasts they once conceal'd . . .

The Bards, besure, their Aids will lend;
The Printer is the Poet's Friend;
Both cram the News, and stuff the Mills,
For Bards have rags, and—little else.

Parks served as public printer of Virginia from 1732 until his death, and he was succeeded by his journeyman William Hunter. Hunter was almost as prominent as his master, serving jointly with Benjamin Franklin as postmaster-general for the colonies.

Throughout the colonial period and, indeed, up to the time of the Rebellion, Virginia and South Carolina were the main centers of what few cultural interests could be found in the "old South." It is not surprising, therefore, that South Carolina, and, specifically, Charleston, should follow quickly on the heels of Virginia in securing a printer. In May 1731 the legislative council of that colony offered the equivalent of £175 sterling (£1,000 South Carolina currency) to the first printer who would set up a shop in that relatively isolated colony. The bounty was attractive enough to bring three printers to Charleston, one of whom, Eleazer Phillips, Jr., of Boston, was solicited by the Commons House of the Council. Two others, Thomas Whitemarsh, of Philadelphia; and George Webb, whose previous residence is not definitely known, came on their own initiative. The presence of Whitemarsh is particularly interesting, for he was one of the many young printers whom Benjamin Franklin helped to set up in business under a partnership arrangement. In Franklin's account book there is the following entry under October 28, 1731: "Whitemarsh . . . arrived in Charleston the 29th of Sept. 1731 at night, so our Partnership there begins October 1, 1731."

The council considered Phillips and Whitemarsh the two most eligible candidates and made the sporting proposal that "each of them print an equal number of the before mentioned Law, and furnish the Publick with Twenty five each, and then we shall judge who can best Serve the Publick." Apparently this typographical duello never took place, for the Commons insisted that the bounty be awarded to Phillips, although Whitemarsh was also granted 200 pounds in South Carolina currency.

Apparently Webb had no role at all in the competition, and yet to him belongs the honor of doing the first printing in South Carolina. In the Public Record Office in London, where other rare examples of American colonial printing are preserved, there is a six-page pamphlet with the imprint: "Charles Town, printed by George Webb," and a broadside without imprint but which clearly came from the same press. Both pieces have the governor's permission to print at the end, with the date of November 4, 1731. The next piece of printing in South Carolina was a broadside printed by Whitemarsh "at the Sign of the Table-Clock on the Bay" sometime after the date of the signature on the document, November 27, 1731. Webb may have been identical with a George Webb whom Franklin mentions as having been apprenticed to Keimer in 1727, or he may have been the George Webb who worked for William Parks in Annapolis and Williamsburg between 1728 and 1736. Whoever he was, George Webb was the first to print in South Carolina, but

his name does not appear anywhere in connection with printing in South Carolina after 1731.

Neither Phillips nor Whitemarsh enjoyed a much longer career. Sometime in January 1732 Phillips founded the *South-Carolina Weekly Journal*, but he died in the following July, and no copy of his paper is known to exist. Whitemarsh started the *South-Carolina Gazette* on January 8, 1732, and continued to publish it until he died in September of the following year. The shrewd Franklin did not want to lose the economic opportunity afforded by a partnership in Charleston, and therefore in 1733 he sent another journeyman, Louis Timothée, to Charleston on an agreement of partnership. Timothée reestablished the *South-Carolina Gazette* in February 1734, and it continued under varying circumstances until 1802. Timothée died in 1738, but his widow Elizabeth was able to carry on the printing business successfully and raise a family of children as well. Franklin speaks highly of her in his *Autobiography*.

Printing spread slowly in the South, and then only in the tidewater regions until the Revolution. Thus it was not until 1749 that the North Carolina House of Burgesses saw fit to invite James Davis, a Virginia printer, to New Bern to print its journal. Two years later Davis founded the *North Carolina Gazette* and continued it almost to the end of the decade, then revived it in 1768 and published it for another 10 years. It appeared once more in 1783. James Davis retired in 1781, 4 years before his death, and he was succeeded by his son Thomas. The latter printed in the coastal plains communities of Fayetteville and Halifax and in the Piedmont town of Hillsboro. At one time he issued a *North Carolina Gazette* simultaneously in Fayetteville and Hillsboro. The second printer in North Carolina, Andrew Steuart, a Pennsylvania Irishman, started to publish the *North Carolina Gazette and Weekly Post Boy* in Wilmington in 1764, but the paper lasted barely 2 years. Adam Boyd published the *Cape Fear Mercury* at Wilmington from 1769 until 1775, and a few months after his final issue he was commissioned an ensign in the Continental Army.

Georgia was the last of the original 13 colonies to have a printing press. James Johnston, a Scot, arrived in Savannah early in 1762 and received an official appointment as government printer in March of that year. Little is known of his activities until April 7, 1763, when he began to publish the *Georgia Gazette* in Savannah. Soon thereafter he published *An Act to Prevent Stealing of Horses and Neat Cattle* and the first number of the *South-Carolina and Georgia Almanack for the Year of Our Lord 1764*. With the exception of a period roughly corresponding to the Revolutionary War, Johnston published the *Georgia Gazette* until 1802, and he himself lived until 1808 when he died at the age of 70. Augusta, up the river from Savannah, was the second Georgia community to have printing. John E. Smith established his *Georgia State Gazette or Independent Register* there on September 30, 1786. Just as elsewhere in the South, printing was slow to move away from the coast, and by the time that printing began to move into the Piedmont, it had already taken root more deeply and more extensively in western Pennsylvania and the booming Ohio Valley.

Following strict chronological order, we find that the next printing east of the

Mississippi occurred in a city that did not become part of the United States until 1804 and in which the language of the streets was French. In 1764 Governor Dabbadie of Louisiana requested and received permission from Versailles for "le Sieur Braud négociant" to set up a printing press in New Orleans. Denis Braud must have been a zealous printer, for even before his equipment arrived from Paris he set up a copper plate press and printed paper money. The first known letterpress publication by Braud was the unhappy proclamation of Louis XV of the secret treaty of 1762 in which Louisiana was ceded to Spain and England. It is captioned "Extrait de la Lettre du Roi à M. Dabbadie" and bears the imprint "De l'Imprimerie de Denis Braud, Imprimeur du Roi." It is dated by the handwritten endorsement of the chief clerk of the local council at New Orleans on September 16, 1764, on the sole surviving copy, in the great private library of E. A. Parsons of New Orleans, now in the University of Texas. When the government of Louisiana actually changed, the first Spanish governor, Antonio de Ulloa, was so unpopular that the French colonists invited him to leave. They justified their action in a long statement issued by Braud: *Mémoire, des Habitans et Négocians de la Louisianne, sur l'Événement du 29 Octobre 1768*, with a colophon reading, "A la Nlle. Orléans. Chez Denis Braud, Imprimeur du Roi. Avec permission de Mr. l'Ordonnateur. M.DCC.-LXVIII." In July 1769 Alexander O'Reilly arrived in New Orleans to enforce (with 3,000 men-at-arms) the loyalty of the French colonials to His Catholic Majesty in Madrid. Braud was arrested, but he offered the plausible excuse that he had to print whatever came to his press with the official endorsement of the *ordonnateur*, and therefore he was let off with a light punishment. Between 1764 and 1770, when Braud probably died, he printed some 20 titles, several of them rather substantial in size. The second New Orleans printer was Antoine Boudousquié, whose first imprint was a broadside dated March 3, 1777, granting amnesty to certain deserters. In 1777 Boudousquié also issued his *Code Noir*, or slave code. No newspaper was issued in New Orleans until Louis Duclot began the *Moniteur de la Louisiane* on March 3, 1794. The first English-language printer in New Orleans was James Lyon of Vermont, who issued the first number of the *Union; New-Orleans Advertiser and Price Current* on December 13, 1803.

The Spread of Printing in the South and West After the Revolution

Printing did not come to Florida until two centuries after the first settlement by the Spaniards in St. Augustine in 1565. The story begins at the end of the brief period of British domination of East Florida (1765–1783), and it starts in Charleston, South Carolina. In 1780 John Wells, son of the Charleston printer Robert Wells, succumbed to British pressure upon the occupation of his native city by His Majesty's troops and became outspokenly loyalist, even to the extent of changing the name of his paper to the *Royal South-Carolina Gazette*. In 1782 John Wells found it advisable to move to Nassau, Bahamas, to escape the wrath of the successful patriots, and he published the *Royal Bahama Gazette* there. In the next year John Wells and his brother Dr. William Charles Wells were in St. Augustine, and

there they founded the *East-Florida Gazette*, which probably began on February 1, 1783. The publication lasted until March 22, 1784, but only three numbers (March 1 and 3, and May 17, 1784) survive, all in the Public Record Office in London. The issue of the *East-Florida Gazette* for March 1, 1784, carries the imprint "by Charles Wright for John Wells, jun.," but nothing definite is known about Charles Wright. In June 1784 Spain formally resumed possession of East Florida, and the Wellses left sometime during the same year, John to join the numerous loyalist refugees in Nassau and William Charles back to Charleston and thence to London. John Wells continued to print in Nassau until his death in 1799.

Two books appeared over the imprint of John Wells in 1784. One was *Essay II, on the Nature and Principles of Publick Credit* with the imprint, "St. Augustine, East-Florida, Printed, for the Author, by John Wells MDCCLXXXIV." The author was Samuel Gales, and not more than 120 copies of the book were printed, and these only for private distribution to economists. *Essay II* and three others to accompany it were printed for the general public in London over the next 3 years. The other volume printed by Wells in 1784 is *The Case of the Inhabitants of East-Florida*, the claim of the British residents of that jurisdiction for reimbursement for what they were about to suffer as the result of the cession of the territory to Spain.

The status of the Floridas was settled once and for all in 1819 when Spain sold East Florida to the United States. In 1821 Richard Walker Edes, son of the first printer of Augusta, Maine (Peter Edes), began to print the *Florida Gazette* in St. Augustine, but he died on October 15, 1821, only 3 months after he had come to Florida. However, his paper continued and survived for many years as the *East Florida Herald*. Printing also began in Pensacola in 1821, and soon the art spread through the new territory.

Although creative thought and belles lettres never thrived in the deep South during the last century, at least the attitudes of public officials were somewhat different from the views of Governor Berkeley on education and printing. On August 18, 1798, Winthrop Sargent, governor of the Mississippi Territory, wrote to Secretary of State Timothy Pickering in Washington:

> We have no printing press in this country; we are remote from all others and, under such circumstances, I shall find it impracticable to diffuse a knowledge of the laws and other useful matters without the aid of government. A small "traveling press" sufficient for half a sheet of post paper, which would give four pages, would be a blessing to the people of the Territory, and I would myself contrive to manage it if we may through your goodness be indulged.

No record of Pickering's action on this request is available, but there may have been some connection between the request and the fact that in 1797 or 1798 Lieutenant Andrew Marschalk, a printer stationed at Walnut Hills (Fort Hill today) near Vicksburg, printed a ballad by William Reeves entitled *The Galley Slave*. There was a considerable stir in Natchez as a result of Marschalk's activity, and efforts were made to attract him to that community. He constructed a larger press, and in 1799 printed the *Laws* of the Mississippi Territory. No copy of *The Galley Slave* survives, and the lone copy of the *Laws* is in the New York Public Library. In the Archivo de

Indias in Seville there is a 10-page pamphlet captioned "Mississippi Territory; a Law in and of, and in addition to, the regulations of the Governor, for the permanent establishment of the Militia of the Mississippi Territory." It may antedate the larger volume in the New York Public Library.

In 1800 Benjamin M. Stokes began the first newspaper in the territory, the *Mississippi Gazette* at Natchez. Marschalk and other printers soon entered the field of journalism, and printing thrived in what is now Mississippi. Printing did not come to the Alabama portion of the Mississippi Territory until 1807.

The first printing in the federal district in which Washington is located is actually a part of the history of printing in Maryland in the late 18th century, but the extraordinary significance of the national capital lends a special meaning to early typography in what is now the District of Columbia. The area now occupied by the national capital includes a community that was settled since the middle of the 18th century, Georgetown. Even before the geographical limits of the District of Columbia were defined, Charles Fierer had begun to publish the *Times, and Patowmack Packet* on February 12, 1789, in Georgetown; and in the same year Fierer printed his *Poor Robin Almanack and the Maryland Ephemeris* for 1790, the first separate publication issued in what is now the district. Several other printers operated in Georgetown in the early 1790s, but the first printer to come to Washington was Thomas Wilson, formerly a printer and bookseller of Norfolk, Virginia. Wilson arrived in Washington in 1795, and on May 22, 1795, he began to publish the *Impartial Observer, and Washington Advertiser,* a weekly newspaper. Although the Government Printing Office was not set up until 1861, Washington has had a flourishing printing business, official and unofficial, from 1795 to the present day.

The founding of Washington was a symbol, not an organic aspect of the development of the American nation. The two most significant aspects of American history have been the westward movement and the industrialization of the country, and the printing press has been the handmaiden of both movements. Soon after the end of the Revolution thousands of emigrants began to flock to Pittsburgh in western Pennsylvania, at the junction of the Allegheny and Monongahela rivers, to go on down the Ohio River to the fertile lands of Kentucky, Ohio, Indiana, and Illinois. The press followed rapidly. It had taken the printing press 147 years to progress the 480 airline miles from Cambridge to Pittsburgh, but it took only 22 years to cover the 560 airline miles from Pittsburgh to St. Louis in the center of the continent.

Printing came to the trans-Allegheny West on July 29, 1786, when John Scull and Joseph Hall opened their shop in Pittsburgh and issued the first number of the *Pittsburgh Gazette*. Hall died the next year, but Scull continued to pursue a successful career and finally died in 1828. Scull, his family, and his paper have been an essential part of the life of Pittsburgh for over a century and a half, and even today the paper survives as the *Pittsburgh Post-Gazette*.

It was also in July 1786 that Lexington, Kentucky, invited John Bradford to set up a printing establishment there, and the minutes of the town trustees in the University of Kentucky Library show that Bradford was voted a free lot if he would establish a press. At this point it should be noted that Bradford was a Virginian and

not a printer and was not related to the family of William Bradford. With practical encouragement from the Lexington trustees, Bradford sent to Philadelphia for a printing outfit. It was brought over the mountains to Pittsburgh, floated down the Ohio on a flatboat as far as Maysville, and then sent by packhorse to Lexington. Somewhere in the rough country in Mason or Fleming counties "a great part of the types fell into pi," and, to add to Bradford's difficulties, his brother Fielding Bradford, who was to be his assistant, fell ill. Thus it was only under the greatest difficulties that the first issue of the *Kentucke Gazette* came out on August 11, 1787. However, both the paper and John Bradford were destined to have a long and honorable career in Lexington, which reigned unchallenged throughout the early 19th century as the center of western culture. Moreover, John Bradford, like William Bradford, was the progenitor of a distinguished family of printers who spread out to the new territories south of Kentucky.

In the rough and mountainous area between Virginia and the Kentucky Bluegrass, later to become the state of West Virginia during the War Between the States, printing began in 1790 at Shepherd's-Town, near Harper's Ferry, when Nathaniel Willis, grandfather of the poet N. P. Willis, began to publish the *Potowmac Guardian and Berkeley Advertiser*. About a year later Willis moved to Martinsburg, and he continued to publish the paper there until 1800 when he sold out and moved to Chillicothe, Ohio, to establish the *Scioto Gazette*.

South of Kentucky, in the area to become the state of Tennessee in 1796, printing was introduced by George Roulstone and Robert Ferguson when they issued the first number of the *Knoxville Gazette* on November 5, 1791. Strangely enough, they did not set up their shop in Knoxville proper, but rather in nearby Rogersville (then called Hawkins' Court House). It was not until 11 months later that they moved the paper to Knoxville, which was then expected to be the permanent capital of Tennessee. In 1793 Roulstone printed the first nonserial publication which appeared in Tennessee, the *Acts and Ordinances of the Governor and Judges, of the Territory of the United States of America South of the River Ohio*. In 1793 Ferguson left the partnership, and in 1794 Roulstone was appointed public printer, an office which he held until his death in 1804. The widow Roulstone, by the way, carried on the tradition of the 18th-century lady printers by continuing the business for a couple of years until she married another printer who could handle the work. Printing soon spread over east and middle Tennessee, but it was not until 1824 that the black art reached the remote areas of west Tennessee.

The influence of old Kentucky on the West made itself felt within a half a dozen years after printing came to Lexington. In 1791 William Maxwell appeared in Lexington as a partner of one Gooch (or Cooch), but he remained in the Bluegrass for only 2 years. On November 9, 1793, he started *The Centinel of the North-Western Territory* in the new town of Cincinnati. It was the first printing anywhere in the great and rich territory west of the Alleghenies and north of the Ohio River, the Middle West which is today the agricultural and industrial nerve center of America. In 1796 Maxwell printed the first book to appear in Ohio, the *Laws of the Territory of the United States North West of the River Ohio*, commonly known

as "Maxwell's Code." Maxwell continued to print in Cincinnati and later in Greene County, Ohio, until his death in 1809, but long before this date other printers had come to Cincinnati and other points in southern Ohio.

The last jurisdiction in what is now the United States to have printing before the end of the 18th century was Michigan. It has been alleged by some patriotic Michiganders that there was a printing press in Detroit as early as 1777, when Lieutenant Governor Henry ("Hair-Buyer") Hamilton distributed quantities of proclamations said to have been dated from and printed at Detroit. Unfortunately, there is no definite evidence to support the allegation that Hamilton had a press working for him. There is, however, in the Detroit Public library a 16-page pamphlet captioned *An Act Passed at the First Session of the Fourth Congress of the United States . . . the Seventh of December, 1795* with the imprint of "Detroit: Printed by John M'Call, M.DCC.XCVII." No other imprint of M'Call is known, and there is only the barest contemporary reference to him. The next printing in Detroit was in 1809, when Reverend Gabriel Richard, a Sulpician missionary who had been in Detroit since 1798, brought a printing outfit and a printer, James M. Miller, from the East. Miller's first publication appeared on August 1, 1809: *The Child's Spelling Book; or Michigan Instructor*. On August 31, 1809, he brought out the first number of the first Michigan newspaper, the *Michigan Essay; or, The Impartial Observer*. It is interesting to note in the four copies of this paper that have been preserved that it is bilingual, with about 10% of the text in French.

Of the territories east of the Mississippi which were ultimately to become states in the Union, only Alabama, Indiana, Illinois, and Wisconsin did not have printing before the end of the 18th century. The story of the introduction of printing to these and other territories is a different one from that of the gradual spread of printing in the 13 original colonies and the first thrusts over the mountains into western Pennsylvania, Kentucky, Tennessee, and Ohio. The wide expanses of the great West were conquered far more rapidly than even the relatively accessible hinterlands of the first coastal settlements. At this point it will be worthwhile to go back to the early 18th century and review some of the significant personalities in the history of colonial and early republican printing.

Benjamin Franklin and Other 18th-Century Printers in Philadelphia

Benjamin Franklin was the most distinguished printer of 18th-century America. His greatest accomplishments were perhaps in the fields of science, diplomacy, and statesmanship; but he always thought of himself primarily as a printer, and even his last will and testament begins, "I, Benjamin Franklin, Printer. . . ." At the age of 22 he wrote his epitaph, and, while it was never used, it does reveal his lifelong devotion to his chosen craft: "The body of Benjamin Franklin, printer (like the cover of an old book, its contents torn out, and stript of its lettering and gilding), lies here, food for worms; but the work shall not be lost; for it will (as he believed) appear once more, in a new and more elegant edition, revised and corrected, by the author."

In 1717 Franklin was apprenticed to his brother James under a 9-year contract. Although his apprentice's pay was minuscule, Benjamin managed to save enough from it to buy a few books and form the nucleus of a private library. The field of creative literature beckoned to the lad soon after James Franklin began to publish the *New-England Courant* in Boston on August 17, 1721. Independent and lively in spirit and style, the *New-England Courant* was distinctly at odds with many prevailing opinions of the day, and, as we have already noted, ultimately attracted the displeasure of the authorities. However, Benjamin saw in it an excellent vehicle for his first efforts at creative writing and slipped anonymous articles (or with the pseudonym of "Mistress Silence Dogood") under the door at night, since he well knew that his brother would scorn anything signed by his apprentice. The British Museum's file of the *Courant*, presumably the property of Benjamin Franklin at one time, is annotated in Franklin's own handwriting with the names of the authors, and many a spritely piece is marked B.F.

After James Franklin was released from jail, he again committed a journalistic indiscretion; and for this affront to authority he was "strictly forbidden by this Court to Print or Publish the New-England Courant, or any Pamphlet or Paper of the Like Nature, except it be first supervised by the Secretary of this Province." To evade this injunction James publicly cancelled Benjamin's apprenticeship and substituted the name of his younger brother for his own on the masthead. The paper continued to be quite popular, mainly because of the charming articles under the pseudonym of "Dr. Janus," pieces which gave promise of "Poor Richard's" shrewd wit. While the *Courant* continued to appear as Benjamin Franklin's paper until it ceased publication in 1726, the younger publisher was restless. His brother had attempted to hold him by entering into a new and secret apprenticeship agreement, but in the fall of 1723 Benjamin departed unceremoniously for New York.

Unable to find employment in New York, Franklin went on to Philadelphia, where he secured employment with Samuel Keimer, who printed in Philadelphia from 1723 until 1729, when he moved to Bridgetown and published the semiweekly *Barbadoes Gazette*. Strangely enough, Franklin first boarded with the family of Keimer's sole competitor, Andrew Bradford, but later he secured accommodations with the family of a Mr. Read, father of Deborah Read, the later Mrs. Benjamin Franklin. Governor William Keith was attracted by Franklin, and he proposed to back him in an independent printing enterprise and furnish him with letters of credit with which to purchase the necessary equipment in England. Although Franklin sailed for England in confidence that the letters had been signed, they were not in the ship's mail.

In London Franklin worked for the printer Samuel Palmer for about a year after his arrival in December 1724. Subsequently he worked at a higher wage for John Watts's Printing House until he decided to return to Philadelphia in the summer of 1726. For a few months after his return he engaged in a mercantile business, but he was soon back in Keimer's shop. Soon after Franklin finished the paper money printing job for Keimer in Burlington, New Jersey, in 1728, he went into business with a fellow printer, Hugh Meredith. The new firm quickly established a fine reputation for accurate composition and good presswork. On one occasion

Andrew Bradford, as public printer, had printed an address from the House to the governor in a careless style, and Franklin and Meredith promptly reprinted it accurately and sent a copy to each member of the House. This clever move bore good results, for the House voted Franklin and Meredith their printers for the next year.

The young firm was soon faced with a financial crisis, but Franklin was able to buy out Meredith and continue alone. One of Franklin's first ideas as an independent businessman was to start a newspaper, for Andrew Bradford's *American Weekly Mercury* had been a profitable venture even though it was not particularly well edited. Unfortunately, Franklin confided in a fellow printer, George Webb (possibly the George Webb of South Carolina fame), who promptly advised Keimer. The latter then started his own newspaper under the title of *The Universal Instructor in All Arts and Sciences; and Pennsylvania Gazette*. After 9 months Keimer's paper had only 90 subscribers, and Franklin bought it and changed the title to the *Pennsylvania Gazette* with the number of October 2, 1729. At the same time Keimer went into bankruptcy, and Andrew Bradford was thus the only competitor of the 23-year-old Franklin.

The *Pennsylvania Gazette* at once assumed a leading position among colonial newspapers for its felicitous style and its sense of humor (almost unique in its day). Moreover, Franklin had one talent possessed neither by his older brother nor by Keimer, the incomparable gift of being able to get along with other people. With a few interruptions, the *Pennsylvania Gazette* continued to be published until 1815. Two and a half years later Franklin began another newspaper, *Die Philadelphische Zeitung*, of which the first issue appeared on May 6, 1732. Alert businessman that he was, Franklin was quick to realize the value of a newspaper dedicated specifically to Pennsylvania's rapidly growing German population. Franklin's most famous venture, *Poor Richard's Almanack*, began in 1733; and it was his happiest decision to avoid the expense of a professional philomath (almanac writer) and to furnish the copy himself. For two centuries the wit and wisdom of Poor Richard has been quoted in all the languages of the Western world. Throughout the 1730s and '40s Franklin continued to do the best printing in the colonies and to amass a substantial personal fortune from solid business methods.

One of Franklin's most fruitful types of investment were his partnerships. He staked many a young printer with his equipment and a little capital, always having an explicit understanding in writing. These partnerships almost invariably turned out well. We have already noted Franklin's association with Thomas Whitemarsh and Louis Timothée in Charleston. In Philadelphia Franklin had partnerships with G. Armbrüster, Anthony Armbrüster, and J. Böhm. In partnership with Böhm Franklin printed Arndt's *Hocherleuchtete Theologi* in 1751 in a large volume of nearly 1,400 pages, the biggest book printed in Philadelphia in the 18th century. Other partnerships were with William Dunlap in Philadelphia and Lancaster; Benjamin Chattin, Heinrich Miller, and Samuel Holland in Lancaster; William Smith in St. John, Antigua, Leeward Islands; William Daniell in Kingston, Jamaica; and James Parker in New York.

Franklin's peripheral activities were too numerous to mention. Directly related to his printing business was casting type sorts, improving the printing press, draw-

ing pen and ink sketches, printing paper money on copper plate presses, and executing wood engravings. At his store in Philadelphia he sold books and stationery, but also much other merchandise, including slaves and a "very good sack." Above all there was the profitable job of running the colonial postal system, a fitting job for colonial America's greatest printer, since in many communities it was almost traditional that the printer and newspaper publisher also be the postmaster. With all these responsibilities, it is not surprising that in 1748 Franklin entered into an agreement with David Hall under which the business was to be operated as Franklin and Hall for 18 years, during which period Hall was to pay Franklin £1,000 a year. The business was capably operated, and the records of the firm are today one of the most valuable sources for the study of colonial printing. Hall's sons succeeded him, and after a succession of other owners during the 19th century, the firm became the Franklin Printing Company in 1889.

Benjamin Franklin never forsook his devotion to his chosen craft. While he was virtually managing the American Revolution from Paris he continued to print in his villa at Passy, a community now almost indistingiushable in the sprawling metropolitan area of Paris. On his little private press at Passy he printed numerous smaller pieces, "bagatelles," as he called them, for the amusement of himself and his friends. Fortunately, nearly all of these Passy imprints have survived.

Franklin's *Philadelphische Zeitung* was one of the first chapters in the history of German printing in Pennsylvania, and during the 18th century the volume of publication in this language assumed considerable proportions. Andrew Bradford was printing in German in the late 1720s, and Franklin soon followed suit. The greatest German printers in 18th-century Pennsylvania and, indeed, in the Western Hemisphere, were Christopher Sower (Sauer) and his son, known in the history of printing as Christopher Sower I and Christopher Sower II, or as "the Elder" and "the Younger."

Christopher Sower I was a native of Lauterburg, who emigrated to America in 1724. He was a universal mechanical genius, and among his numerous trades we might mention those of printer, publisher, bookbinder, printer's ink manufacturer, lampblack maker, papermaker, tanner, tailor, farmer, stove manufacturer, clockmaker, distiller, farrier, druggist, tinplate worker, physician, and minister. In 1738 Sower got into the printing business, probably by accident. The German Baptist Brethren known as Dunkers or Dunkards had settled in Pennsylvania during the decade between 1719 and 1729, and they soon felt the need for a press. After a Dunker named Jacob Gaus failed in his effort to get the press started, the Dunkers turned to Sower, and by 1738 the press was in full operation under his direction. The first publication was *An ABC and Spelling Book to be Used by all Religions Without Reasonable Objection*. In 1738 he also issued an almanac in German, the first to be issued in America in that language.

On August 20, 1739, Sower began to publish a quarterly (later a monthly) periodical, *Der Hoch-Deutsch Pennsylvanische Geschicht-Schreiber*, and he also started to print books of substantial length. Barely 5 years after he began to print, Sower produced one of the most famous of all colonial books, the Bible in German. It followed the Indian Bible as the second Bible to be printed on the North American

continent, and it was not until 1782 that Robert Aitken of Philadelphia produced a complete Bible in English. Sower's German Bible was a 7½ × 9¾-inch quarto in 1,286 pages, with a title page in black and red. He took 3 years to complete the edition of 1,000 copies.

The Sower plant in Germantown (today a part of Philadelphia) became one of the best-equipped and most successful in colonial America, and in large measure it was due to the versatility of Christopher Sower I. He was probably one of the first American printers to build presses, and Isaiah Thomas says that he built one as early as 1750. Both Franklin and Sower cast "sorts" of type long before there was a regular typefounding industry in North America. Thomas is also the source of a statement, most probably accurate, that Sower made his own lampblack and printing ink. When Christopher Sower II's property was confiscated in 1778 by patriots who found his loyalist sympathies unpalatable, the appraisers found an engine and other items "in the Lampblack house." Add to these skills the ability of Christopher Sower I as a papermaker, and we have in him the prototype of the self-sufficient craftsman. He died in 1758 at the age of 64.

Christopher Sower II was born in Germany and came to America with the rest of his family in 1724. He was as versatile as his father, but from 1738 on, when his father devoted himself primarily to printing and auxiliary enterprises, the younger Sower also considered himself a printer above all else. After the elder Sower's death, Christopher Sower II enlarged and expanded the business considerably. He continued to manufacture lampblack and printers' ink, and in 1773 he built a paper mill on the Schuylkill River in which he manufactured not only paper for his own use but also printing and writing paper for retail sale. Sower's most significant accomplishment was to cast type. Around 1770 or soon thereafter he imported matrices from Germany to prepare for the tremendous job of printing a second edition of his father's Bible of 1743. He first used his new type in his periodical, *Ein Geistliches Magazien*. In Number 12, Part II, issued late in 1771 or early in 1772, there is a colophon stating that this number was "gedruckt mit der ersten Schrift, die jemals in Amerika gegossen worden" (not a completely accurate statement, as we will soon note). Sower's typefounders were Justus Fox, a German printer and wood engraver who included in his repertory of trades almost as many as did Christopher Sower I, and Jacob Bay, a Swiss silk weaver who had recently come to America. Christopher Sower II manufactured type only for himself, but Fox and Bay continued to manufacture type for themselves and for others.

Christopher Sower II retired from his substantial business in 1777, but trouble beset his old age. He attempted to be neutral during the Revolutionary War, but he was suspected by both sides. Since two of his sons, Christopher Sower III and Peter Sower, were openly loyalist, the patriots were deeply suspicious and confiscated the business. Christopher Sower II died in 1784, but his family carried on despite their misfortunes during the war. Christopher III went to England after the war, but he returned later to America, not to the United States, but to Canada where he published the *Royal Gazette and New Brunswick Advertiser*. A third son of Christopher II, Daniel, was manager of the paper mill on the Schuylkill, but it was confiscated with other property of the family. A fourth son, David, founded the Nor-

ristown (Pennsylvania) *Gazette* in 1799; and although it passed from the Sower family ownership after two generations, it exists today as the *Town Herald*. A fifth son, Samuel, established a typefoundry in Baltimore in partnership with William Gwynne. Isaiah Thomas has observed that it was among the first foundries in America to cast diamond-size roman and italic.

Like nearly all our hyphenates, the Sowers lost virtually all their nationalistic ties in the third generation, but printing in German continued to flourish as wave after wave of new immigrants came from the Fatherland. In 1732 Johann Conrad Beissel had founded the Ephrata Society, a celibate and communistic group closely associated with Dunkers, at Ephrata, Lancaster County, Pennsylvania; and by 1745 the group felt that it needed a press. In charge of the press was Peter Miller, who had learned to print from Christopher Sower I and who had recently established a paper mill on the Cocalico Creek in Lancaster County. One of the earliest issues of the press is Beissel's *Urständliche und erfahrungsvolle hohe Zeugnüsze*, a curious volume of confused Protestant mysticism. Of the some 43 productions of the press, by far the most famous is the German translation of Tieleman van Braght's *Der blutige Schau-Platz*. With its 756 leaves, it is the largest book produced in the colonies before the Revolution, and it is probably also the ugliest. Some 3 years were required to print the edition of 1,300 copies, according to the rather detailed account in the *Chronicon Ephratense* by Brothers Lamech and Agrippa.

We may mention here only one other personality in the long history of the German press in North America, a story that is by no means closed today. He is John Henry Miller, who learned to print in Basel and Zürich and came to America in 1741. He returned to Europe and printed for almost a decade in Marienburg, but in 1751 he was back in Philadelphia and worked for William Bradford and Benjamin Franklin. He was employed by Franklin to supervise the German printing in his shop. In 1752 Miller set up shop in Lancaster and began to print the bilingual Lancaster *Gazette* in partnership with Samuel Holland, but publication ceased after only 5 months. After 6 more years in Europe (1754–1760), he returned once more to Philadelphia and set up a printing shop. On January 18, 1762, he inaugurated his newspaper, *Der wochentliche Philadelphische Staatsbote*. It is famous for the issue of July 9, 1776, which carried the complete text of the Declaration of Independence, the first in any language other than English. The *Staatsbote* lasted until 1779 when Miller sold his business to Melchior Steiner and Charles Cist.

With its Bradfords, its Franklins, its Sowers, and its Millers, Philadelphia dominated the colonial American publishing scene in the half century before the Revolution. However, there were also other 18th-century printers in Philadelphia who deserve at least some mention here. John Dunlap and David C. Claypoole, besides being successful newspaper publishers and job printers, were also distinguished for having been the first to print the Declaration of Independence (July 6, 1776), the United States Constitution (September 19, 1787), and George Washington's Farewell Address (September 19, 1796). Robert Aitken printed the first complete Bible in English in the United States and ran a generally successful printing and publishing business, continued by his daughter Jane Aitken after his death in 1802. Francis Bailey, one of the best 18th-century printers from a technical standpoint, was also a

typefounder, for in 1792 he bought out Jacob Bay, who had been cutting fonts for Bailey and other Philadelphia printers. Matthew Carey, a hot-tempered Irishman, came to Philadelphia in 1784; and despite more than one bitter political feud (including one duel), he made a fortune as a printer, newspaper and periodical publisher, bookseller, and publisher. His firm has survived to the present day in the form of the well-known publishing house of Lea and Febiger.

18th-Century Printers in New York and Boston

In the 18th century New York was a burgeoning metropolis, but its significance as a political, economic, and cultural center still lagged behind that of Philadelphia. While there were no such personalities as Franklin and the Sowers in New York, there were many successful and highly productive printers and publishers on Manhattan Island from the middle of the century on; and, of course, in the 19th century, New York was to assume undisputed leadership as the center of the American publishing industry as well as the focal point of American economic life in general.

The largest printing and publishing business in 18th-century New York was probably operated by Hugh Gaine. A native of Belfast, Northern Ireland, Gaine landed on Manhattan Island in 1745 and soon secured employment with James Parker. He must have been an industrious journeyman, for 7 years later, before he was 30 years old, he was able to start his own printing office. On August 3, 1752, he began to publish the New York *Mercury*, and the next year he ran into the same difficulty that Zenger and Parker had encountered, when he annoyed the Assembly. Like Parker, he apologized to the legislators, and he was not penalized. On February 1, 1768, Gaine changed the name of his newspaper to the *New York Gazette, and the Weekly Mercury*, and it continued under this title under the British occupation of New York in 1776. Gaine fled to Newark, across the Hudson River. There he continued to issue his newspaper for 7 weeks under the same name.

In the meanwhile a Tory, Ambrose Serle, was given the use of part of Gaine's equipment which he had left in New York. Serle began to issue a paper he called the *New York Gazette* and gave the first number, dated September 30, 1776, Gaine's imprint. Although he changed it in the second number, many historians have incorrectly assumed, on the basis of Serle's misleading imprint, that Gaine was issuing two newspapers simultaneously and supporting opposite sides.

Gaine had a very substantial book printing business. He issued many public documents, particularly after his appointment as public printer in 1768. Even before 1768, however, he had issued his monumental *Journal of the Votes and Proceedings of the General Assembly, 1691–1765*, in two large volumes in folio, in 1764 and 1766, respectively. He also issued many reprints of important literary works and music.

On the opposite side of the political fence from Gaine was James Rivington, another enterprising printer and publisher in colonial New York. Rivington came to New York in 1760 and established a bookstore, and in the following year he founded another bookstore in Philadelphia. After varying fortunes, including one

bankruptcy, he was well enough established in 1773 to start *Rivington's New-York Gazetteer*, a strongly pro-Tory newspaper. He was such an outspoken partisan that in 1775 his shop was mobbed by some rowdies who dubbed themselves the "Sons of Liberty" and boasted that they carried away Rivington's types and molded them into bullets. In 1776 Rivington returned to England and spent a year before he returned with a new printing outfit and an appointment as "Printer to the King's Most Excellent Majesty." He resumed publication of his paper on October 4, 1777, as *Rivington's New York Loyal Gazette* (later simply the *Royal Gazette*). After the Revolution he prudently changed the name of his paper again to *Rivington's New-York Gazette*, but the public failed to respond to Rivington's implied repentance, and the paper ceased publication late in 1783. Despite his checkered career as a newspaper publisher, Rivington, like Gaine, was above the average for colonial printers in respect both to quality and to quantity of publication.

Two other prominent royalist printers in New York were James and Alexander Robertson, two brothers from Edinburgh. James came to Boston in 1764, and by 1768 he was in New York where he was joined by his younger brother. They founded the *New-York Chronicle* on May 8, 1769, but they moved up the river to Albany in 1770 and became the first printers in that town. On November 25, 1771, they started the *Albany Gazette*. After a brief sojourn in Norwich, Connecticut, they appeared in New York again in 1776 as publishers of the *Royal American Gazette*. James followed the British forces to Philadelphia and Charleston, but Alexander stayed in New York until the final evacuation by the British. After the Revolution the brothers wisely decided to move to Nova Scotia.

Once independence was won, printers who had cast their lot with the patriots found a welcome in New York. John Holt, a Virginian who had been associated with James Parker in New Haven and New York before the Revolution, published the *New York Journal, or General Advertiser* beginning in 1766, and in 1770 he also set up a printing office and a newspaper in Norfolk in his native Virginia. He suffered heavy losses during the Revolution but continued to publish his *Journal* at Kingston and Poughkeepsie. In November 1783 he established the *Independent New-York Gazette* in New York City, but he died 2 months later. Eleazer Oswald, Holt's son-in-law and a prominent Revolutionary soldier, was associated with William Goddard (about whom more later) in publishing the *Maryland Journal* in Baltimore and in operating the Elkridge Landing paper mill during the war. On April 13, 1782, Oswald began to publish the *Independent Gazetteer* in Philadelphia, and after his father-in-law died he also became associated with the widow Holt in publishing the *Independent New-York Gazette*. Shepard Kollock, apprentice of William Goddard and a veteran of the Continental Army, published a patriot newspaper in New Jersey during the Revolution and later became a prominent citizen of Elizabeth, New Jersey. However, he also operated in New York, where he began the *New York Gazetteer, and Country Journal* on December 3, 1783. Less than 3 years later the paper became a daily under the title of the *New York Gazetteer, or Daily Evening Post*.

Kollock was not the first to publish a daily paper in New York. On February 23, 1785, William Morton and Samuel Horner began to publish the *Morning Post, and*

Daily Advertiser. A week later, on March 1, 1785, Francis Childs began to publish the *New York Daily Advertiser*, the second daily in the city, and he continued the paper until 1796 when he sold his rights to John Morton. It is of some interest to note that Childs bought from Benjamin Franklin some of the equipment made for the latter's private press at Passy and evidently used it in his New York shop.

During the 18th century Boston continued to be an important center of printing just as it had been in the late 17th century, although it was to fall behind Philadelphia. One of the most successful of the early 18th-century printers in Boston was Thomas Fleet. He is particularly famous for having published in 1719 a slender volume entitled *Songs for the Nursery, or, Mother Goose's Melodies for Children,* the first American edition of this most famous of all children's books. Unfortunately no copy exists today. The fact that Fleet's wife's maiden name was Elizabeth Goose (or Vergoose) makes the lost book an even more attractive subject of speculation. In 1733 Fleet bought the *Weekly Rehearsal*, and 2 years later he changed the title to the *Boston Evening-Post*, which he conducted with much zeal and a real nose for the news. In fact, he was so zealous that he even ran afoul of the Council, although he was not prosecuted. After Fleet's death in 1758 at the age of 73, he was succeeded by his sons, and the firm continued in business until 1806.

In 1719, before he had begun to publish the *New England Courant,* James Franklin had a commission from postmaster William Brooker of Boston to publish his *Boston Gazette.* This he did for 7 months, but when Philip Musgrave succeeded Brooker as postmaster, he transferred the printing of the paper to Samuel Kneeland. Kneeland was a native Bostonian who had served his apprenticeship with Bartholomew Green and then went into business for himself in 1718. In 1727 Kneeland lost the *Boston Gazette*, and like James Franklin, he started his own paper, the *New-England Weekly Journal*, of which the first issue appeared in the same year. Kneeland's most ambitious printing venture was undertaken jointly with Bartholomew Green. It was a volume of nearly 1,000 pages, the Reverend Samuel Willard's *Compleat Body of Divinity in Two Hundred and Fifty Expository Lectures on the Assembly's Shorter Catechism* (1726). The pagination is sadly confused, but the book was popular enough to attract 500 subscribers, among them James Franklin, member of the Hell-Fire Club. Kneeland became public printer and ultimately established himself as one of the most prominent citizens of Boston. He had four sons, all of whom were printers, and his business was continued almost to the end of the century.

Two prominent Boston printers in the 1740s were Gamaliel Rogers and Daniel Fowle. Rogers had started printing in Boston in 1727, and in 1742 he formed a partnership with Fowle. In September 1743 they started the *American Magazine and Historical Chronicle* and continued it for more than 3 years, the first successful magazine published in English-speaking North America. For about 2 years in 1748 and 1749 they published a weekly newspaper, the *Independent Advertiser.* The firm broke up in 1750, and each partner began to work independently. After Rogers's shop burned, he moved to Ipswich. Daniel Fowle began to print with his brother Zechariah, but in 1756 Daniel moved to New Hampshire to establish the

first press in that state. Zechariah continued to print in Boston for a decade and a half, at one time in partnership with Samuel Draper.

In 1755 Benjamin Edes and John Gill bought Samuel Kneeland's newspaper, by now known as the *Gazette, or, Weekly Journal* (the *New-England Weekly Journal* and the *Boston Gazette* had been combined in 1741). When Gill retired on the eve of the Revolution, Edes continued the paper alone, for a while in Watertown, Massachusetts, when Boston was occupied by the British. Edes and his two sons continued to publish the paper until 1798. During the latter half of the 18th century the *Gazette* was a paper of considerable influence and counted the ablest men in Massachusetts among its contributors.

In the western part of Massachusetts, printing began at Springfield, when Anthony Haswell and Elisha Babcock founded the *Massachusetts Gazette, or the Springfield and Northampton Weekly Advertiser* at Springfield. Although the paper failed after 4 years, printing was firmly rooted in western Massachusetts and soon spread to Northampton and Greenfield. Haswell—who had served his apprenticeship under Isaiah Thomas and had printed in Worcester and in Hartford, Connecticut, before coming to Springfield—accepted an invitation from the governor and council of Vermont to set up a printing office there. On June 5, 1783, he began to publish *The Vermont Gazette* in Bennington, adopting the title of the paper that Judah Padock Spooner and Timothy Green had abandoned 2 years previously in Westminster. Haswell built up a large printing and publishing business in Vermont and became one of the leading citizens of that state.

Two Patriot Printers: Isaiah Thomas and William Goddard

Of all the printers in 18th-century America, Isaiah Thomas of Massachusetts ranks second only to Benjamin Franklin. He was distinguished not only as a printer but also as the scholarly author of the *History of Printing in America* (and as the founder of the American Antiquarian Society in Worcester, the most important of all depositories of colonial and early republican American books and newspapers. Thomas also has an important niche in American political history for his ardent support of the Revolution through the *Massachusetts Spy* and other publications.

Apprenticed to Zechariah Fowle in 1756 at the age of 7, Thomas did the case work for 10,000 copies of the *New England Primer* when he was 8 years old, and at 13 he made the wood engravings for the *New Book of Knowledge* and printed the book. From his earliest youth Thomas was a careful workman, and he did not hesitate to criticize Fowle later as an "indifferent hand at presswork and much worse at the case." When he was 16, Thomas left Boston with the intention of going to England, but he got no further than Halifax, Nova Scotia, where he spent 6 months working for Anthony Henry (Anton Heinrich), printer of the *Halifax Gazette*. Back in Boston in 1767, Thomas secured his release from Fowle and sought his fortune in the Carolinas, first in Wilmington and later in Charleston. For 2 years he worked in the latter community as a journeyman in the shop of Robert Wells, publisher of the *South Carolina and American General Gazette*.

By 1770 Thomas was back in Boston in partnership with his former master, and on July 17, 1770, they began to publish the *Massachusetts Spy* under the imprint of Z. Fowle and I. Thomas. Three months later Thomas bought out Fowle and began to publish the *Massachusetts Spy* alone. It was a daring enterprise in view of the fact that there were five other papers in Boston at the time. The original purpose of the paper, to present impartially all sides of the deep-seated quarrel between the colonial patriots and the Tories, was noble, but soon it proved to be impossible. Thomas cast his lot unreservedly with the patriots and never wavered in the trying decade that followed.

Thomas's business soon expanded, and he began other projects. He started publication of the *Royal American Magazine* in 1774 and of *Thomas' New England Almanack* in 1775. Thomas's troubles with the Tories began with the attitudes expressed in the *Massachusetts Spy*, and the situation was aggravated in the spring of 1771 when Thomas began to print the Latin theses for baccalaureate candidates at Harvard. Theses had long been the monopoly of the Drapers, publishers of the *Massachusetts Gazette and Boston Weekly News Letter*, and these gentlemen were highly incensed at the invasion of what they considered an exclusive preserve. Although Thomas did the work remarkably well, his rivals accused him of all manner of machinations to get the job. The Drapers soon found an ally in Governor Hutchinson, who was annoyed by the expressions of sympathy with the patriots in the *Massachusetts Spy*, and at one time the customs officials were even instructed to decline to give Thomas the "Shipping List" for publication in his newspaper. The attacks on Hutchinson in the *Spy* soon brought an accusation of libel; but, although Thomas was summoned to appear before the Council and the Supreme Judicial Court at Boston, no indictment was obtained.

By the spring of 1775 Thomas was less concerned about an indictment than he was about the noose, and in the night of April 16 he packed some of his machinery and fled to the unpretentious village of Worcester. He was able to continue the publication of the *Spy* for a while under the most difficult circumstances, and after a short hiatus between March and June 1776 the paper was leased for 2 years to William Stearns and Daniel Bigelow while Thomas unsuccessfully attempted to establish a business in Salem. By 1778 Thomas was back in Worcester, and on June 25 of that year the paper began to appear as *Thomas's Massachusetts Spy*. After a journalistic drought of 2 years in which the *Spy* had lost prestige, the paper again began to publish significant articles and to assume its former position of influence. The *Spy* was published continuously until May 31, 1904.

After the successful conclusion of the Revolution, Thomas began to prosper. Like Franklin, he had the custom of helping former apprentices establish themselves in business by forming a partnership with them. Particularly noteworthy was the highly profitable business in Boston which was based on a partnership with Ebenezer T. Andrews. In Walpole, New Hampshire, Thomas and Carlisle published the *New Hampshire Journal, or, The Farmer's Museum*. Thomas and Waldo published the *Advertiser* at Brookfield, Massachusetts. Other partnerships were Thomas and Tappan at Portsmouth, New Hampshire; Thomas and Merrifield at Windsor, Ver-

mont; Thomas and Tinges and Thomas and Whipple at Newburyport, Massachusetts; Thomas, Andrews, and Butler at Baltimore; and Thomas, Andrews, and Penniman at Albany, New York. Another significant enterprise was the establishment of a paper mill at Quinsigamond, which soon had a very substantial business.

Thomas's lists as a publisher and printer included all manner of books wanted by citizens of the young republic. Juveniles, school books, masonic works, Fourth of July orations, music, and medical, agricultural, and scientific treatises came from his seven presses in Worcester. Thomas issued the first Greek grammar to be printed in America, and he kept an entire Bible standing in type at one time so that he could reprint it at will. An important work in the history of printing in America is *A Specimen Book of Isaiah Thomas' Printing Types*, issued in 1785.

The most important of all works with a Thomas imprint came after the master's

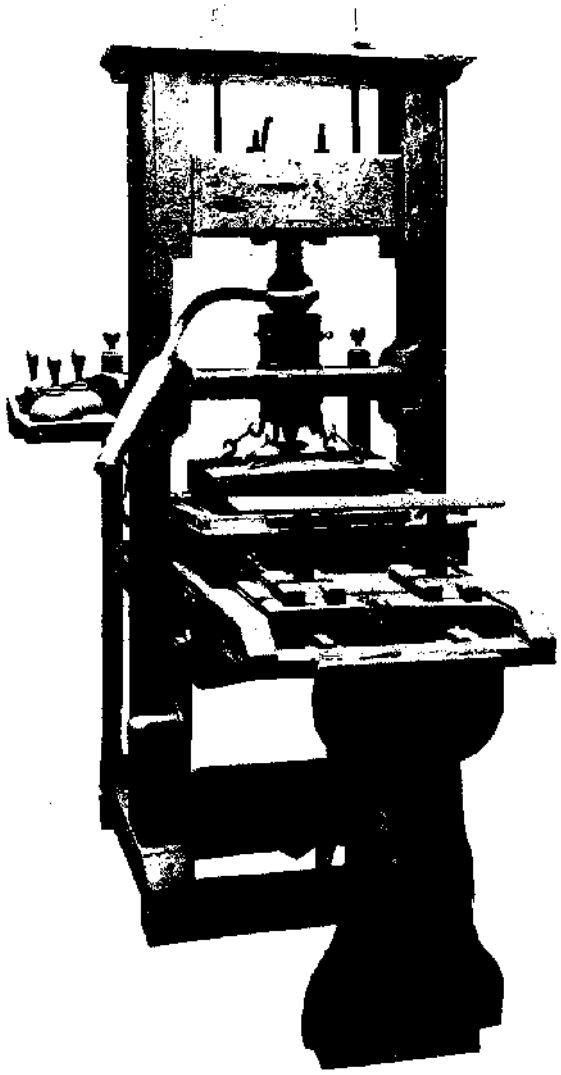


FIGURE 6. *The common press used by Isaiah Thomas, now in the American Antiquarian Society.*

retirement in 1802. It was Thomas's own *History of Printing in America*, published in 1810 after 2 years of intensive research. He collected early American publications extensively and had a wide correspondence in order to prepare this work, which he viewed not as the definitive study but merely as an effort "to collect and preserve materials for such a History." Without Thomas's research at a time when the memory of many colonial printers was still green, we would know far less than we do know about them. A new and revised edition of the history, with an index, appeared in 1874.

In 1812 Thomas founded the American Antiquarian Society in Worcester and became its first president. Upon his death in 1831 his will revealed that he had bequeathed to the society his remarkable collection of books and newspapers and his extensive collection of private and business papers. He also left an endowment of $50,000, a fund which enabled the society to begin a long and still useful service to students of American history.

One more picturesque personality among 18th-century American printers deserves some note. He is William Goddard, who printed in New Haven, Providence, New York, Philadelphia, and Baltimore, and founded the United States postal service. He was intemperate in argument, perhaps even a bit unstable, and heavily dependent upon his womenfolk to keep his business going. Born in New London in 1740, Goddard set up his own printing shop in Providence in 1762. On October 20 of that year he began to publish the first newspaper in that community, the *Providence Gazette and Country Journal*. Three years later he went to New York. His mother, Sarah Goddard, managed the business until 1768, when she joined her son in Philadelphia. The Goddard business in Providence was taken over by John Carter, who was to become one of the important printers of Providence in the later 18th century.

In New York, William Goddard worked with John Holt for a year and then moved to Philadelphia. In 1766 Goddard moved to Philadelphia where he set himself up in partnership with three other men. Unable to get along with one another, the four soon began to quarrel amidst a good deal of public bickering and even some pamphleteering by Goddard. In spite of all the difficulties, the newspaper published by the partners, the *Pennsylvania Chronicle, and Universal Advertiser*, lasted from 1767 to 1774.

As early as 1773 Goddard was in Baltimore and had started a newspaper, the *Maryland Journal, and the Baltimore Advertiser* on April 20, 1773. The issue for February 17, 1774, carried an announcement that Mary Katherine Goddard, William's sister, would manage the paper while her brother was away on a mission "interesting to the common liberties of America." The mission was to establish a "New American Post Office" to take the place of the British colonial postal service. The postmaster-generalship, an office deriving its authority from appointment by the crown, had been held jointly from 1753 to 1774 by Benjamin Franklin and William Hunter of Williamsburg. A grave abuse lay in the fact that it was traditional for a printer or publisher of a newspaper to be a local postmaster, and in not a few instances the publisher-postmaster would close the mails to a rival newspaper. This and many other unsatisfactory conditions were eliminated in the private en-

terprise known as "Goddard's Post Offices." The system was taken over by Congress on July 26, 1775, as the "Constitutional Post Offices," and the last postrider of the king was withdrawn on Christmas Day of the same year. Goddard, stormy character that he was, was not rewarded with the postmaster-generalship of the new republic, a position that went to Benjamin Franklin, and later to his son-in-law Richard Bache.

Perhaps the reasons may be found if we go back to pick up Goddard's career as a printer when he reappeared in Baltimore in 1776 and again assumed management of the *Maryland Journal* (although his sister's name continued to be displayed as the publisher). In 1777 Goddard's sternly independent attitude got him in trouble with the local Whig Club, and he had to go to Annapolis twice to secure the governor's protection. In 1779 Goddard was again the champion of an unpopular cause when he sided with General Charles Lee, who had been drummed out of the Continental Army. Goddard was so violent in his reaction to public disapproval of his stand that he bombastically threatened to "take up the Tomahawk and Scalping knife and be worse than any Hessian or Waldecker," but ultimately he decided that it was the part of wisdom to print an apology. It was at this time that Eleazer Oswald was associated with Goddard in a printing, bookselling, and stationery business, and in the management of the Elkridge Landing paper mill. The partnership was dissolved sometime before April 1782 when Oswald began to publish his Philadelphia newspaper.

Mary Katherine Goddard continued to publish the *Maryland Journal* until January 2, 1784, when it was announced that the paper would be issued thereafter by William and Mary Katherine Goddard, although William Goddard's name alone appeared in the issue of January 6 and for the next year until Edward Langworthy became a partner. Langworthy dropped out in 1786, but James Angell, Goddard's brother-in-law, became a partner in 1789 and bought the full ownership of the paper in 1792. Goddard gave up his stormy life as a printer and retired to Rhode Island to farm until his death a quarter of a century later.

Presses, Typefounding, Papermaking, and Ink Manufacture

Perhaps the greatest tribute to the colonial printer as a craftsman is the fact that he was able to produce anything that was at all presentable with his relatively primitive equipment. Very few typographically attractive books were produced in 17th- and 18th-century America, and the reason is not hard to find. Type was scarce, most of the presses inferior contraptions, and other supplies were meager and generally unsatisfactory by European standards. Such large firms with three or more presses as those of the Sowers and Isaiah Thomas were exceptions to the rule. According to an inventory of Franklin and Hall in 1766, including the three presses and over 4,000 pounds of type, the total value of the shop's equipment was £313 10s, perhaps about $75,000 in terms of equivalent buying power in the 1970s. It would be a difficult matter to set up an even moderately well-equipped printing plant today for that sum.

Examples of early American presses survive. In fact, the first press in America, that imported by the Reverend Jose Glover, is believed to be identical with the 17th-century press on display in the Vermont Historical Society in Montpelier. A wooden press used in 18th-century North Carolina, with a platen half the size of the bed, thus requiring two pulls of the handle for a full form, is preserved in the Wachovia Historical Society in Winston-Salem, North Carolina. The press used by Isaiah Thomas after he fled from Boston to Worcester is preserved in the rooms of the American Antiquarian Society. Another interesting old press is the one that Benjamin Franklin worked at in John Watts's shop in London in 1726, and it may be seen today in the Smithsonian Institution. The presses from the Ephrata Monastery were imported from Germany, and one is now on display in the Franklin Institute, Philadelphia, and another in the Ford Museum, Dearborn, Michigan.

A study of these and other presses and documentary evidence indicates that the press in use in colonial America was the old English common press with a gradual accumulation of improvements. It was not an unmodified Blaeu press which many writers have listed as the basic piece of equipment in the early American printing shop. In any event, both the English and the Dutch wooden presses were rather clumsy affairs, and such a perspicacious printer as Benjamin Franklin was able to offer suggestions for a distinct improvement when he wrote to William Strahan of London in 1753 to order a press for his nephew. Despite the handicap of an awkward press, the colonial pressman was unusually productive. Theoretically, two men on a single press could produce a "token" (240 sheets, printed on one side, with two pulls to the form) in an hour, although usually their productivity was reduced about 20% in a 10-hour day in the shop.

The difficulties involved in tooling the screw probably discouraged American mechanics from attempting to build a press, and therefore they depended on imports from overseas. Isaiah Thomas states that Christopher Sower the Elder was making his own presses by the middle of the 18th century. Sower was certainly capable of making a press; but it is doubtful whether he offered any for sale outside of his own establishment, for in such case Benjamin Franklin would hardly have ordered one from England. In the *Massachusetts Gazette and Boston Weekly News-Letter* for September 7, 1769, we read of the first press ordered by an American printer from an American craftsman: "Mr. Isaac Doolittle, Clock & Watch-maker, of New-Haven, has lately compleated a Mahogany Printing-Press on the most approved Construction, which, by some good Judges in the Printing Way, is allowed to be the neatest ever made in America and equal, if not superior, to any imported from Great-Britain: This Press, we are told, is for Mr. William Goddard, of Philadelphia, Printer." On the verso of the title page of Goddard's *Pennsylvania Chronicle* for February 12, 1770, we read that he had recently bought "an elegant Mahogany Press, made by an ingenious watchmaker, at New Haven." We do not know what was in the mind of the writer in the *Massachusetts Gazette* when he referred to Doolittle's press as "the neatest ever made in America," but we have no record of any other press except Sower's that had been manufactured in America previously. The construction of printing presses soon became general in America, and it was accelerated by the desire to be self-sufficient after independence.

Sometime in the closing years of the 18th century, Aden Ramage of Scotland settled in Philadelphia, and by 1800 his name appears in the accounts of Matthew Carey. By 1807 Ramage was constructing his fine new presses in which the diameter of the screw had been enlarged to double the impressing power of the platen. About the same time George Clymer of Philadelphia invented the Columbian Iron Press, but a decade elapsed before the Ramage or the Columbian presses began to come into general use. Once they did, they were among the most common presses found in the American printing shop of the first half of the 19th century.

Thanks to the various press restriction acts, typefounding was a stagnant and uninspired industry in England during the 17th and the early 18th centuries. By a decree of Star Chamber in 1637 only four individuals in England were allowed to maintain type foundries, and although the law was repealed and reimposed several times before the final removal of the press restriction acts in 1693, there was no increase in the number of English letter foundries even in the early 18th century. The quantity and quality of the type they produced was substandard, and it is likely that there was more Dutch type than English in use in England during the first two decades of the 18th century. The same thing is probably true of many American printing shops.

Although William Caslon began to cut punches in 1720, he did not issue his first specimen sheet until 1734, and another decade and a half elapsed before his type began to be imported into America on a large scale. After 1750, however, Caslon's faces became favorites among American printers, and to many people Caslon type is the characteristic element of colonial American books simply because of the quantity of new titles produced in American after the middle of the century. Moreover, the general style of Caslon's faces was imitated by other British letter foundries in London and Glasgow, and it is likely that types similar to Caslon's but not cast by him were also imported into the colonies. Alexander Wilson of Glasgow probably supplied more than one American colonial printer with type.

It is likely that typefounding did not become an established industry until the eve of the Revolution simply because there were not enough printers to guarantee a good market for a foundry. It has been argued that Americans began to found type as a part of their general program to boycott British goods in reprisal for London's taxation policies; but it is more likely that the nonimportation policies simply happened to coincide with the rise of the typefounding industry in America.

It should be noted that it would be incorrect to say that no type at all was cast in British North America before 1769. It has always been customary for printers to cast "sorts" to meet the specific needs of a job. Thus, when Franklin was working for Keimer in Philadelphia in 1727 he used some old types as punches in homemade lead matrices and was able to make the letters he needed. Christopher Sower the Elder was equally resourceful, and it is likely that other colonial printers had the same experience.

On the other hand, there was a limit to the casting of sorts. As late as 1769 William Weyman, New York partner of James Parker, was having difficulty with the printing of the *Mohawk Book of Common Prayer* on account of the disproportionate number of certain letters needed to print a book in that Indian language.

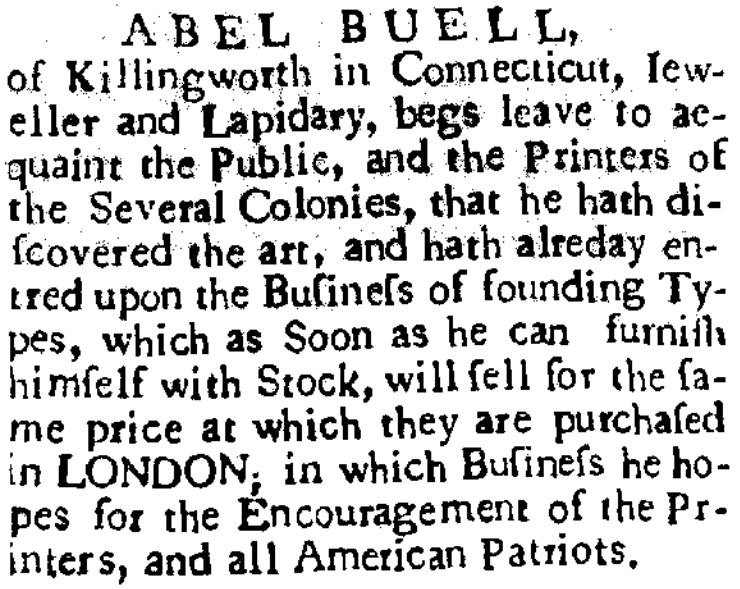
He explained that he did not have "the Command of a Letter Makers founding-House to suit ourselves in ye particular Sorts required such as g's, k's, y's, &c, &c. . . ." The *Journals* of Hugh Gaine record that he was able to take over the job and finish it, but it is not recorded whether he made his own sorts or imported them.

The year before Weyman had his difficulties with the prayer book, a young silversmith of Killingworth, Connecticut, Abel Buell, began to experiment with typefounding. Some of Buell's first types were used for a proof struck off by Edes and Gill in Boston, and today this precious scrap is preserved among the Ezra Stiles papers at Yale University under the date of May 8, 1769:

> ABEL BUELL, / of Killingworth in Connecticut, Iew- / eller and Lapidary, begs leave to ac- / quaint the Public, and the Printers of / the Several Colonies, that he hath di- / scovered the art, and hath alreday en- / tred upon the Business of founding Ty- / pes, which as Soon as he can furnish / himself with Stock, / will sell for the sa- / me price at which they are purchased / in LONDON, in which Business he ho- / pes for the Encouragement of the Pr- / inters, and all American Patriots.

The types are crude and poorly lined, but this scrap of paper marks the beginning of a great American industry. (See Figure 7.)

In the following October, Buell presented the General Assembly of Connecticut with a signed petition, printed in his own types, requesting permission to hold a lottery to raise funds for starting a foundry or for some other form of aid. He was granted a loan of £100 from the colony for the first year and was promised a similar amount thereafter. Unfortunately, Buell was a rather poor businessman, and this factor, combined with the general unrest of the times, deterred him in his objective. Not until 1781 was he able to supply Thomas and Samuel Green of New Haven and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of Killingworth in Connecticut, Iew-
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quaint the Public, and the Printers of
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pes, which as Soon as he can furniſh
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me price at which they are purchaſed
in LONDON, in which Buſineſs he ho-
pes for the Encouragement of the Pr-
inters, and all American Patriots.

FIGURE 7. *Abel Buell's second type specimen, October 1769, in the Connecticut State Museum.*

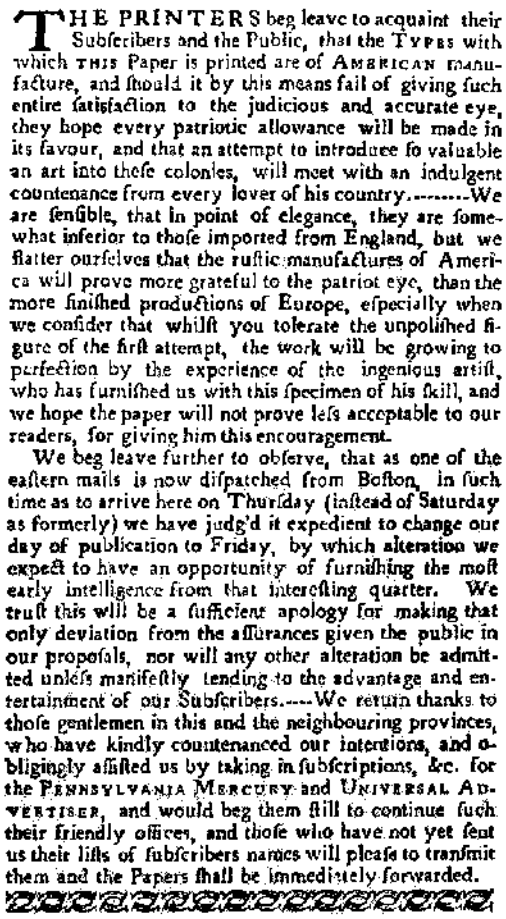
Timothy Green of New London with type that he had produced. Nevertheless, Buell must be considered the father of the industry in this country, even though he did not make an immediate financial success of his project.

One might have supposed that typefounding would have started in Philadelphia, the main center of printing in the colonies, and it may be that Franklin planned just such a thing. On July 4, 1744, he wrote to William Strahan thanking him for his "care and pains in procuring the founding tools." There is no evidence that Franklin used these tools, for we find him continuing to order type from England both for his own shop and for other printers. It was not until 1785 that he set up his grandson, Benjamin Franklin Bache, as a typefounder in Philadelphia and furnished his plant with equipment purchased in France.

We have already noted how Christopher Sower the Younger imported matrices from Germany and cast type, mainly for the second edition of his Luther Bible. Perhaps the greatest significance of Sower's typefounding enterprise was the experience that Jacob Bay and Justus Fox gained from it. In 1774 Bay set himself up as an independent typefounder in Germantown and produced his own punches and matrices, but Fox stayed with Sower and continued to cast blackletter as well as roman type. On April 7, 1775, the first number of Story and Humphrey's *Pennsylvania Mercury* appeared with the proud announcement that "The Printers beg leave to acquaint their subscribers and the Public, that the Types with which this Paper is printed are of American manufacture. . . ." (See Figure 8.) In the issue of the same paper for June 23, 1775, a book, *The Impenetrable Secret*, was advertised with the note that it was "Just Published and printed with Types, Paper and Ink, Manufactured in this Province." Unfortunately, no copy of the book survives. Either Fox or Bay could have been the founders who produced these types, but it seems probable that the honor belongs to Bay, since Fox may well have been devoting most of his time to producing German type. In 1778 Sower's equipment was sold, and both Bay and Fox purchased some of the typefounding tools. Bay sold out to Francis Bailey in 1792, and Fox continued to cast some type (probably as a sideline) until he died in 1805.

Several other typefoundries were set up in the next two decades. We have already noted Benjamin Franklin Bache's foundry, but despite his illustrious sponsorship and early training under none less than François Ambroise Didot, Bache was not a success at his business. John Baine, an Edinburgh typefounder who had once been associated with Alexander Wilson in Glasgow and St. Andrews, came to Philadelphia and set up a typefoundry in partnership with his grandson in 1789. The Baines furnished type to Matthew Carey and to Thomas Dobson, publisher of the monumental 18-volume American edition of the third *Encyclopaedia Britannica*. It was also in 1789 that Adam Mappa, a Dutch typefounder, settled in New York with a good deal of expensive equipment, but 5 years later he was ready to sell out.

Mappa's punches and matrices ultimately came into the possession of two natives of Scotland, Archibald Binny and James Ronaldson. Binny had come to Philadelphia in 1795, and together with Ronaldson, he established the first truly great American typefoundry. In 1809 appeared *A Specimen of Metal Ornaments Cast at the Letter Foundry of Binny and Ronaldson*, the first American specimen book. The types



THE PRINTERS beg leave to acquaint their Subſcribers and the Public, that the TYPES with which THIS Paper is printed are of AMERICAN manufacture, and ſhould it by this means fail of giving ſuch entire ſatisfaction to the judicious and accurate eye, they hope every patriotic allowance will be made in its favour, and that an attempt to introduce ſo valuable an art into theſe colonies, will meet with an indulgent countenance from every lover of his country.--------We are ſenſible, that in point of elegance, they are ſomewhat inferior to thoſe imported from England, but we flatter ourſelves that the ruſtic manufactures of America will prove more grateful to the patriot eye, than the more finiſhed productions of Europe, eſpecially when we conſider that whilſt you tolerate the unpoliſhed figure of the firſt attempt, the work will be growing to perfection by the experience of the ingenious artiſt, who has furniſhed us with this ſpecimen of his ſkill, and we hope the paper will not prove leſs acceptable to our readers, for giving him this encouragement.

We beg leave further to obſerve, that as one of the eaſtern mails is now diſpatched from Boſton, in ſuch time as to arrive here on Thurſday (inſtead of Saturday as formerly) we have judg'd it expedient to change our day of publication to Friday, by which alteration we expect to have an opportunity of furniſhing the moſt early intelligence from that intereſting quarter. We truſt this will be a ſufficient apology for making that only deviation from the aſſurances given the public in our propoſals, nor will any other alteration be admitted unleſs manifeſtly tending to the advantage and entertainment of our Subſcribers.----We return thanks to thoſe gentlemen in this and the neighbouring provinces, who have kindly countenanced our intentions, and obligingly aſſiſted us by taking in ſubſcriptions, &c. for the PENNSYLVANIA MERCURY and UNIVERSAL ADVERTISER, and would beg them ſtill to continue ſuch their friendly offices, and thoſe who have not yet ſent us their liſts of ſubſcribers names will pleaſe to tranſmit them and the Papers ſhall be immediately forwarded.

FIGURE 8. Pennsylvania Mercury, *April 7, 1775. This first roman type of native manufacture used in a publication in English-speaking North America was produced either by Jacob Bay or by Justus Fox of Germantown, Pennsylvania.*

from this firm enjoyed great popularity, and they have had an enduring influence on American typography.

If printing presses and types were not manufactured in America until the eve of the Revolution, this circumstance may be attributed at least in part to the fact that printers could plan ahead for a year or so for replacement or replenishment of capital stock. Such was not the case with paper, the most rapidly consumed of all printers' supplies. We have already noted how William Bradford established the first paper mill in America in 1690. The second American paper mill was also established in Germantown, by William de Wees, a son-in-law of William Rittenhouse. In 1729 Thomas Willcox founded a mill in Delaware County, Pennsylvania, between Philadelphia and Wilmington; and from that date on through the century Pennsylvania was the leading producer of paper in the colonies. An important paper mill was founded at Ephrata around 1740. It is recorded that in 1787, 48 of the 90 paper mills then in the United States were located in Pennsylvania.

Another early paper mill in the middle colonies was established by William Bradford in Elizabeth, New Jersey, probably around 1728. Bradford had been denied

permission to establish a paper mill in New York by the colonial authorities, who were doubtful of the wisdom of encouraging domestic manufactures, and since Rittenhouse and de Wees were unable to satisfy his needs, he followed the simple expedient of locating his mill in a nearby Jersey community. No paper mill was established in New York until Hugh Gaine, exasperated by the difficulties of importing paper from Pennsylvania, formed a company which built a mill at Hempstead, Long Island, in 1773. Maryland was also dependent on her northern neighbor for supplies of paper, and we hear of no paper manufacturing in that colony until 1775 when Mary Katherine Goddard advertised in the *Maryland Journal* for rags for the mill at Elkridge Landing, then under construction. We have already noted William Parks's Williamsburg paper mill, founded in 1744, but there is no conclusive evidence that it continued to operate after Parks's death in 1750.

New England enjoyed excellent lines of communication and trade with the mother country and could depend on regular imports of paper from England. In 1729 a group of Bostonians established a paper mill at Milton, Massachusetts. Five years later the Lords of Trade failed to note any adverse effect that this mill's business might have had on British papermakers' exports to the colonies, and it seems likely that Massachusetts printers continued to rely on the imported product. Another mill was set up at Falmouth (Portland), Maine, sometime between 1731 and 1734.

Three decades later a new spirit was in the air. In William Goddard's *New England Almanack* for 1765, it was announced that a paper mill was under construction in Providence, Rhode Island, and that "It's Utility to this Part of the Country will be soon demonstrated by a Saving of some Thousand Dollars, that are annually sunk to us in the Pockets of the European Merchants." In 1766 Christopher Leffingwell began a paper mill at Norwich, Connecticut, and a year later it was a going concern. It was precisely at this time that the real impetus came to American papermaking. The Townshend Act of 1767 taxed not only tea, but also glass, paper, and other commodities. Traditionally, the great protest by the American patriots was against the tax on tea, but there is a strong likelihood that newspaper publishers may have encouraged this popular uproar to cover up their real grievance, the tax on paper.

Within a few years paper mills began to spring up everywhere from North Carolina to Massachusetts. By the outbreak of the Revolution at least eight paper mills had been established in New England, and in 1810 Isaiah Thomas recorded 77 mills in actual operation in New England. In 1777 there was even a technical publication on papermaking. Robert Bell of Philadelphia published a volume of *Select Essays*, among which was included one by Jean Etienne Guettard captioned "An Enquiry Concerning the Materials that may be used in making Paper." Franklin was not content to go to his grave before making a contribution to the literature of paper, and in 1788 he read a paper to the American Philosophical Society in Philadelphia entitled "Description of the process to be observed in making large sheets of paper in the Chinese manner, with one smooth surface." It was published in the society's *Transactions* for 1793.

Guettard's paper was a pertinent one, for the colonial papermaker was always hard put for material. Almost a century was to elapse before American papermakers

were provided with a chemical method for reducing wood pulp without destroying the fiber, and they had to depend on rags. We have already noted "J. Dumbleton's" appeal for rags for William Parks's paper mill in 1744, and similiar fancies in verse and prose may be found in other colonial papers. Fabrics were not as common in Leatherstocking's new country as they were in Europe.

Nevertheless, the constantly growing demand of printers for paper forced the industry to grow and to spread to new sections of the country. To Kentucky, always first in the West in things cultural, belongs the honor of having the first paper mill west of the Alleghenies. In 1793 a mill was established at Georgetown, Scott County, Kentucky, and 2 years later another mill was set up near Pittsburgh. Soon there were mills throughout the West, and by 1840 over 400 mills were in active production in 20 different states.

To go through all the processes of the manufacture of printer's ink is almost as tedious as papermaking, even though perhaps not as complicated. Presumably the 17th- and early 18th-century printers imported their ink by the barrel from England. This custom prevailed throughout the colonial period, although there were the beginnings of domestic manufacture in the middle of the 18th century. We know that Benjamin Franklin had to mix ink (among other duties) when he was a printer's devil for Samuel Keimer, but we do not know whether the ingredients (varnish and lampblack) were produced in the colonies. However, we do know that a decade later Franklin purchased a "lampblack house" for £35. Since linseed oil had probably been produced in Pennsylvania since the 1690s, Franklin was in a position to supply printers throughout the colonies with the basic ingredients for making their ink, and this he was doing by the middle of the 18th century.

Christopher Sower the Elder, universal genius that he was, counted inkmaking among his numerous skills. We have already noted the "lampblack house" in the inventory of 1778 when the younger Sower's property was sold. We also know that the elder Sower boiled his oil for inkmaking in an open meadow. However, it was neither for the Sowers nor for Franklin to make the manufacture of printer's ink a full-blown industry, but rather for the skillful and imaginative Justus Fox. Beginning in 1792 Matthew Carey's manuscript account books, now in the American Antiquarian Society's collections, reflect the purchase of ready-made ink by the keg from Fox. From then on Fox was actively engaged in selling ink to printers throughout Pennsylvania and the neighboring states.

Labor was scarcer than materials in America, and the colonial printing trade was no exception. There are many records of printers who complained of insufficient help, and it may well be that the frequent moves made by many colonial printers were motivated by the hope of finding more and better labor. Most printers depended on the apprentice system for the bulk of their labor supply, and often they secured young boys at an extremely tender age. We have noted that Zechariah Fowle was so fortunate as to secure the services of Isaiah Thomas when the latter was a child of seven. Benjamin Franklin was somewhat more mature—12 years of age—when he was apprenticed to his brother James. It was not unusual to read advertisements offering rewards for the return of runaway apprentices, for the lads themselves realized that their labor was much in demand.

A characteristic of colonial American printing was that it was a family enterprise, and even the women participated in the technical operations of the shop. Famous printing families such as the Greens and the Bradfords of New York and Kentucky maintained family tradition simply because the children began to work in the shop as soon as they could be taught to fold paper or to ink type. A particularly interesting phenomenon of colonial American printing was the number of women who engaged in the craft. There are, of course, hundreds of "Witwen" or "veuves" in the annals of European printing, but the colonial American woman who carried on after her husband's death or removal for other causes is an unusual personality. There is every reason to believe that the widow Glover maintained a definite interest in the work of the Cambridge Press. The examples of Dinah Nuthead, Ann Franklin, Elizabeth Timothée, Sarah Goddard, and Mary Katherine Goddard have already been noted. When Andrew Bradford died in 1742 his second wife, Cornelia, carried on for 4 years. Catherine Zenger took over the New York *Weekly Journal* after Peter Zenger's death in 1746, and she managed it for 2 years until her son John took over. Anne Catharine Green of Baltimore, Margaret Draper of Boston, and Elizabeth Holt of New York are but a few of many widows who took over their deceased spouses' printing businesses in the latter part of the century. Jane Aitken, Robert Aitken's daughter, was sufficiently well schooled in matters typographical to take over her father's business in Philadelphia in 1802.

The Spread of Printing to the Rest of the United States

In general it may be said that the spread of printing in the West occurred under conditions quite similar to those prevailing at the time of the beginning of printing in various localities along the Atlantic seaboard. However, unlike the somewhat fortuitous spread of printing during the colonial period, printing followed the development of the western frontier with steady regularity. New settlements were not always fully secure from Indian attacks by the time the black art won a place for itself within the stockade.

Printing—and civilization in general—spread from old Kentucky to the new West. Thus printing was brought to Vincennes, Indiana, by Elihu Stout, probably a Virginian and a protégé of Patrick Henry. Stout came to Kentucky at an early age and began to work for the Bradfords in Lexington or Frankfort. On July 31, 1804, Stout began to issue the *Indiana Gazette* in Vincennes, and it continued for 2 years until his office was destroyed by fire. On July 4, 1807, he resumed publication of a newspaper, calling it the *Western Sun*, and it survives today as the Vincennes *Sun-Commercial*. In 1804 Stout also issued the first book printed in Indiana, *Laws for the Government of the District of Louisiana Passed by the Governor and Judges of the Indiana Territory*.

In 1808 printing came to Missouri via Kentucky. The printer, Joseph Charless, had worked for Matthew Carey in the East, and he spent several years in Lexington before crossing the Mississippi. In 1808 he and Jacob Hinkle, another printer from Kentucky, set up shop in St. Louis and issued as their first imprint the *Laws*

of the Territory of Louisiana. On July 12, 1808, Charless established the *Missouri Gazette,* accepting flour, corn, beef, or pork from many of the 170 subscribers in lieu of the $3 annual subscription. The *Gazette* suspended publication in 1813, but printing continued to thrive in Missouri. No note on printing in Missouri would be adequate without mention of the most famous of all printers produced by the Show Me State, Samuel Langhorne Clemens, who began to print in the old river town of Hannibal at the age of 14. Throughout his fabulous career, Clemens—Mark Twain—maintained his interest in printing and publishing.

The original site of Kaskaskia is now at the bottom of the Mississippi River, but the village is famous not only as one of the earliest French settlements in the Illinois country but also as the scene of the first printing in what is now Illinois. Again it was Kentucky, mother of the West, that gave the new territory a printer. Matthew Duncan, who published the *Farmer's Friend* in Russellville, Logan County, Kentucky, from 1808 to 1810, was a friend of Ninian Edwards, a Russellville attorney who was appointed first territorial governor of Illinois. Edwards wanted to have the laws of the territory in printed form, but he had to send the job to Duncan in Russellville. The book appeared there with an 1813 imprint. In 1814 Duncan moved his equipment to Kaskaskia, then the territorial capital of Illinois, and began to print the *Illinois Herald* early in 1814. He sold the newspaper in 1817 and joined the army. Vandalia and Shawneetown were other Illinois communities in which printing was introduced at an early date, but it was not until 1833 that Chicago was important enough to attract a printer. The prototypographer of the metropolis on Lake Michigan was John Calhoun (not to be confused with the South Carolina senator of the same name). On November 26, 1833, he began to publish the Chicago *Democrat* on a weekly basis. The *Democrat* continued until 1861 when it was absorbed by the now world-famous Chicago *Tribune.* Today the great printing firms of Rand-McNally, R. R. Donnelley, and Cuneo hold Chicago in a high rank among the great printing cities of the world.

In the so-called Old Southwest, printing in Alabama lagged behind the other states. Mississippi had printing as early as 1797 or 1798, but the first piece of printing in what is now Alabama was *The Declaration of the American Citizens on the Mobile, with Relation to British Aggression, September 1807* (Wakefield, Mississippi Territory, 1807). On the last page there is the following statement by the still unknown printer: "Printed on the Mobile. The printer apologizes for the execution of his work; his types are old and much worn; and the situation of the country does not justify his purchasing of new ones." There is no way of knowing where the printer's types received their wear. On May 23, 1811, Samuel Miller and John B. Hood began the Mobile *Centinel,* although it was actually printed at Fort Stoddert. Alabama became a state in 1819, by which time printing was firmly established.

The early history of printing in Texas is obscured in part by the turbulent history of that jurisdiction as a Spanish possession, a Mexican state, a sovereign republic, and an American state. The earliest definitely identifiable printing in Texas may be traced to Samuel Bangs, who sailed from Baltimore in 1816 with the revolutionary expedition of Francisco Xavier de Mina. On February 22, 1817, he printed at Galveston a *Proclama del General Mina.* Later Bangs was imprisoned in Saltillo

and remained there until 1823. Two other adventurers, Horatio Bigelow and Eli Harris, began a newspaper, the *Texas Republican*, in Nacogdoches on August 14, 1819. Two months later the Mexicans captured the city and destroyed the printing office. A printer named Ashbridge published a *Texas Courier* in San Antonio in 1823, but no copies have survived. We do have three circulars printed by Ashbridge for the governor as well as his bill ($45.00) for printing 20 copies of each. In Nacogdoches a bilingual newspaper called the *Mexican Advocate* was printed by one Milton Slocum in September 1829, but no copies exist today. In the same year Gordon Brown Cotten started a weekly, the *Texas Gazette*, in San Felipe de Austin, the seat of Stephen A. Austin's government. By the mid-1830s the tide of Anglo-Saxon immigration was overwhelming, and the English-language press took a firm hold in the new Republic of Texas.

Printing began in Arkansas on November 20, 1819, 17 years before Arkansas became a state, when William Edward Woodruff issued the first number of his *Arkansas Gazette*. The place was Arkansas Post, but 2 years later the paper moved with the territorial capital to Little Rock. Woodruff was a Long Islander and had begun to learn printing in 1811 under Alden Spooner at Sag Harbor, Long Island. The story of Woodruff's migration to Arkansas is characteristic of the tribulations of the early frontier printers. From 1817 to 1819 he printed in Tennessee. When he decided to go to Arkansas he loaded his equipment on a boat at Nashville and started down the Cumberland through Kentucky, into the Ohio, and on down the Mississippi until he reached the mouth of the White River. Packet service up the latter was not available, and therefore he lashed two canoes together, loaded his equipment, and paddled the rest of the way to Arkansas Post.

In the chronicles of printing in the Southern states some little attention should be given to one of the most curious of all efforts to bring printing to the American Indians in their own language. In 1828 the first issue of the *Cherokee Phoenix* appeared at New Echota, Georgia, edited by Elias Boudinot, an Indian, and printed by Isaac N. Harris. It was partly in English, partly in Cherokee, and in the latter language it was in a remarkable alphabet designed by George Guess, or Sequoyah. This unusual man, son of a Dutch peddler and a Cherokee woman, is alleged to have been able neither to read nor to write English. He made a Cherokee alphabet, or rather syllabary, of 85 characters. The paper ceased in 1835 when trouble broke out between the Cherokees and the state of Georgia, perhaps the most shameful incident of all in the long and disgraceful history of race relations in Georgia.

From the Louisiana Territory the chronology of printing in what is now the United States jumps to California. Although there is some evidence that a few official forms were printed in Monterey in 1831, we usually date printing in California from the summer of 1834, when Agustín Vicente Zamorano issued an initial business announcement in Monterey, and from then on Zamorano was in business. However, barely 3 years later Zamorano was transferred and had to sell his press to the government. Today his name is immortalized in the Zamorano Club, a group of Los Angeles bibliophiles. Zamorano's immediate successor was "Citizen" Santiago Aguilar, as he styled himself. He must have been an earnest believer in liberty, equality, and fraternity, for in two of his surviving pieces we find the word *aristo-*

crata printed upside down. The last Spanish printer of California under the Mexican regime was José de la Rosa, tailor, watchmaker, editor, and bookbinder as well as printer. He printed for 3 or 4 years until 1845 when Governor Pio Pico decided he needed no printer and stored the printing equipment. De la Rosa lived until 1892, when he died at the age of 102.

English printing in California did not begin until August 15, 1846, when the United States took possession of the territory. Walter Colton, chaplain of the United States frigate Congress and acting alcalde of Monterey, established the *Californian* on that date at Monterey. He was assisted by Dr. Robert Semple and Joseph Dockrill, a colorful Kentuckian, who served as printers. Although Dockrill was with the *Californian* only in the beginning, the Reverend Mr. Colton's description of him is worth quoting; for Dockrill was characteristic of the legendary Kentuckian who pushed the frontier from the Appalachians to the Pacific:

> My partner is an emigrant from Kentucky, who stands six feet eight in his stockings. He is in buckskin dress, a fox-skin cap; is true with his rifle, ready with his pen and quick at the type case.

On August 24, 1847, Semple assumed the full proprietorship of the *Californian,* and he moved the paper to San Francisco (recently renamed from Yerba Buena). Within a few months the gold rush was on, and printing and all other aspects of commerce and the arts began to flourish in California.

As the middle-western frontier rolled on past Illinois, the next state to have a press was Wisconsin. Albert G. Ellis, who had learned to print in Herkimer, New York, became associated with the Episcopal mission of Navarino (modern Green Bay) in 1820. He brought type but not a press, and the first Wisconsin imprints were 1,000 lottery tickets from "a handful of old brevier," printed by Ellis with a hand-impression roller on the smooth end of an oak log in 1827. By 1833 he had a press and joined hands with John V. Suydam to print the first issue of the *Green Bay Intelligencer* on December 11, 1833. Although Wisconsin did not became a state until 1848, newspapers and books were being printed in Madison and Milwaukee during the 1830s.

In Kansas the first imprint was in an Indian language, a "Shawanoe hymn," printed by Jotham Meeker at Shawnee Mission Station on March 8, 1834. Four days later he issued from his press a primer in the Delaware language by Ira D. Blanchard. Meeker continued to print for two decades, but a second press was not established until 1843 when two Presbyterian clergymen printed an *Elementary Book of the Ioway Language* at an Indian station in Doniphan County. Leavenworth, Lawrence, Atchison, and other early Kansas communities soon had presses and newspapers; and there are few more colorful chapters in the history of American journalism than the turbulent story of newspaper publishing in "Bloody Kansas" during the struggle between abolitionists and proslavery men in the 1850s. The early history of George W. Brown's *Herald of Freedom* is particularly interesting. The first issue was printed in Conneautville, Pennsylvania, but it bore the imprint of Wakarusa, the name originally destined for the site now occupied by Lawrence. After overcoming fantastic obstacles in moving his paper stock to the West and setting up

shop in Lawrence, Brown was able to issue the first "home" number of the *Herald of Freedom* on January 6, 1855. It was suppressed on May 21, 1856, by the "Border Ruffians," a lawless band of men from neighboring Missouri who were agitating over the slavery issue, but the paper was soon revived and continued until 1860.

Just as in Louisiana and California, the first printing in New Mexico was in a European language other than English. It was Reverend Antonio José Martínez's *Cuaderno de ortografía*, issued in Santa Fé in 1834 with the imprint, "imprenta de Ramon Abreu a cargo de Jesús Maria Baca." In the following year four issues of *El crepúsculo de la libertad*, a campaign newspaper, were printed by Baca for a politician running for the Mexican congress. Father Martínez used the press in Taos to print small items, but by 1843 it was back in Santa Fé. English-language printing came to New Mexico only on September 4, 1847, when the first issue of the bilingual Sante Fé *Republican* appeared.

If American history is at times tarnished by the story of our shameful treatment of the Indians and of other racial minorities, there have been good and high-minded men from the day of John Eliot. Such men were Jotham Meeker and Samuel A. Worcester, the latter the first printer in the old Indian Territory of Oklahoma. In 1835 Worcester printed *The Child's Book*, a 24-page illustrated pamphlet in Creek at Union Mission. Throughout the 19th century many books and newspapers were printed in the various Indian languages current in Oklahoma. The first book produced between the Rocky Mountains and the Pacific was also the work of a missionary. In 1839 Edwin O. Hall produced the *Nez-Percés First Book* at Clearwater, Idaho, for an American Board mission, but it was not until 1862 that a continuing tradition of printing began in Idaho.

Elsewhere in the West printing followed the westward course of empire. The black art came to Iowa in 1836 (Dubuque), Oregon in 1846 (Oregon City), Utah in 1849 (Salt Lake City), Minnesota in 1849 (St. Paul), Washington in 1852 (Olympia), and so on through the West until every state or territory had a printing office by 1870. Although printing was actually introduced to Oregon when Colonel William G. T'Vault started his *Oregon Spectator* at Oregon City on February 5, 1846, the United States Navy is responsible for the first nonserial imprint in Oregon. In the summer of 1846 the U.S. Schooner *Shark* anchored at Vancouver, and two crew members deserted. A broadside announcing a reward for their apprehension, dated August 11, 1846, was printed at Oregon City, the unique copy being in the Oregon State Library.

Most colorful, perhaps, is the typographical history of the theocracy in Utah under the fabulous Brigham Young. First known as the State (actually Territory) of Deseret, Utah has always centered political, religious, and cultural life in Salt Lake City. On January 1, 1849, Young himself and Thomas Bullock, as compositors, struck off a dollar bill in Salt Lake City, and in the following fall Young signed himself as the printer of a 10-page Mormon tract. On June 15, 1850, Young began to publish the *Deseret News*, with Dr. Willard Richards as editor. The story of the struggle of these Mormon pioneers to keep the little paper going is almost as thrilling as the heroic story of the trek westward. Richards gave some hint of his troubles in the story of one little incident:

> We got short of type, and I happened to have some stereotyped plates which we melted down and used for type. We were short, too, of paper, and all went to work to make it. We collected all the rags we could and made the pulp, sifted it through a sieve and pressed it as well as we could.

In the *Deseret News* for November 30, 1850, there was an appeal for rags that was less poetic and witty, but no less urgent, than J. Dumbleton's rhymed advertisement in the *Virginia Gazette* a century previously:

> RAGS! RAGS! RAGS!
>
> Save your rags, everybody in Deseret, save your rags; old wagon covers, tents, quilts, shirts, etc., are wanted for paper. The most efficient measures are in progress to put a paper mill in operation the coming season in this valley and all your rags will be wanted. Make your woolen rags into carpeting and save importations.

The sternness of frontier life contrasted sharply with the polished lines of the Williamsburg wit.

The history of foreign-language printing and publishing in the idioms of the new immigrants who came in droves after the Civil War is a significant chapter in the history of American typography to which we may only allude here. The wealth of publication in German is still a field that offers many opportunities for the student of typographical history as well as of hyphenate culture in general. In Wisconsin and Minnesota there has been a rich tradition of Scandinavian printing up to our own day, and we even find official documents published in Swedish in Minnesota.

Omitting Puerto Rico, which, although a sovereign commonwealth associated with the United States, actually belongs to the Hispanic typographical tradition, we still have to consider Hawaii and Alaska. Both territories are unusually interesting in the history of printing. In 1820 the American Board of Foreign Missions sent Elisha Loomis, a printer, and a press to Hawaii, but it was only on January 7, 1822, that a hymn book in the Hawaiian language appeared from Loomis's press. The missionaries continued their activities, but soon the ubiquitous Yankee traders became the major American element in the islands and dominated all aspects of Hawaiian economic and cultural life.

Although Alaska was occupied by the Russians and sold to the United States in 1867, no printing was done there before 1868. From 1868 to 1876 Agapius Honcharenko and, later, A. A. Stickney printed the *Alaska Herald* in San Francisco in English and Russian. Two months after the *Herald* was started, W. S. Dodge issued the first number of his *Alaska Times* at Sitka, but it died in 1870. Other Alaska papers were printed not only in the territory but also in Seattle and San Francisco through the gold rush of the late 1890s, and only in recent times has the population grown sufficiently to support a well-developed press.

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LAWRENCE S. THOMPSON

ARABIC PRINTING *

Derived from the Nabatean, the Arabic alphabet has been the vehicle for the major Islamic languages of Arabic, Persian, Turkish, and Urdu and for several others such as Kurdish, Pashto, Hausa, Swahili, and Malay. Arabic has 28 consonants, but no vowels. Words are written from right to left. Certain letters assume different shapes if written separately or at the beginning, middle, or end of a word.

* The Bibliography for this section begins on page 74.

While some of the letters stand alone, most are connected. The peculiarities of the handwritten, cursive script which have been carried over into printing provide difficulties for type designers. Each letter requires several characters; some characters are used to print two letters at once; different letters occupy unequal spaces. Difficulty is experienced in inserting the signs (*harakat*) that are sometimes used for vocalizing a text. There are no capitals; even so, the early printers required over 1,000 characters, a number that has been reduced but today still exceeds 300.

The Arabic language has occasionally been printed in other alphabets, notably the Syriac and Hebraic, but this article is concerned only with printing in the Arabic alphabet.

Xylography was not unknown in the medieval Arabic world and was employed to produce prayer formulas, amulets, and commercial stamps, but never for the making of books. Little research has been done on Arabic xylography, perhaps because of the rarity of examples.

Arabic Printing in Europe

Europe receives credit for the earliest Arabic printing. Intellectual contact between Europe and the Arab world had been maintained during the later Middle Ages and it was only a matter of time after the invention of printing that Arabic texts would be produced to meet the needs of churchmen and scholars.

The first book printed in Arabic by means of movable type appeared in Fano, Italy, in 1514. The *Kitāb ṣalāt al-sawā'ī*, a "book of hours," consisted of Melkite prayers translated into Arabic, in 120 pages. The typographer was Gregorius de Gregoriis, a native of Forli. For whom the book was printed is a matter of dispute. It may have been done at the request of Pope Julius II, and perhaps at the wish of the printer G. Soncino.

The Fano Book of Hours is on paper measuring 17 × 11 cm, with a printed area within a frame measuring 13.2 × 8.2 cm, with 12 lines per page. Headings and important words are in red ink, as are the commas and the markings at the ends of sentences. Several instances of poor alignment of the red print are evident. The lack of dots (*shakl*) on *shīn*, *'ayn*, *ḥā'*, and *ṣād* is marked by two small lines slightly slanted from the horizontal. *Ṭā'* is distinguished from *Ẓā'* by a slanted line. The text is supplied with *tanwīn* and *shaddah*. All final *yā's* are dotted, and some vocalization is provided. As for typographic peculiarities: (*a*) initial and medial *hā'* are identical; (*b*) the *dāl* and *dhāl* are uniquely shaped; (*c*) there are two different final *yā's*—one has the tail curved back completely and is used at the end of lines when there is no space for a full *yā'*.

The book is divided into nine parts, each beginning with a page having decorated margins. Two types of decorative panels are used, a floral "arabesque" pattern and a bird pattern. (See Figure 1.)

Two years later, in 1516, A. Giustiniani published in Genoa a polyglot psalter in Hebrew, Greek, Arabic, and Chaldean with notes and a Latin version of each text in one folio volume. And in 1538 Guillaume Postel, the father of French ori-

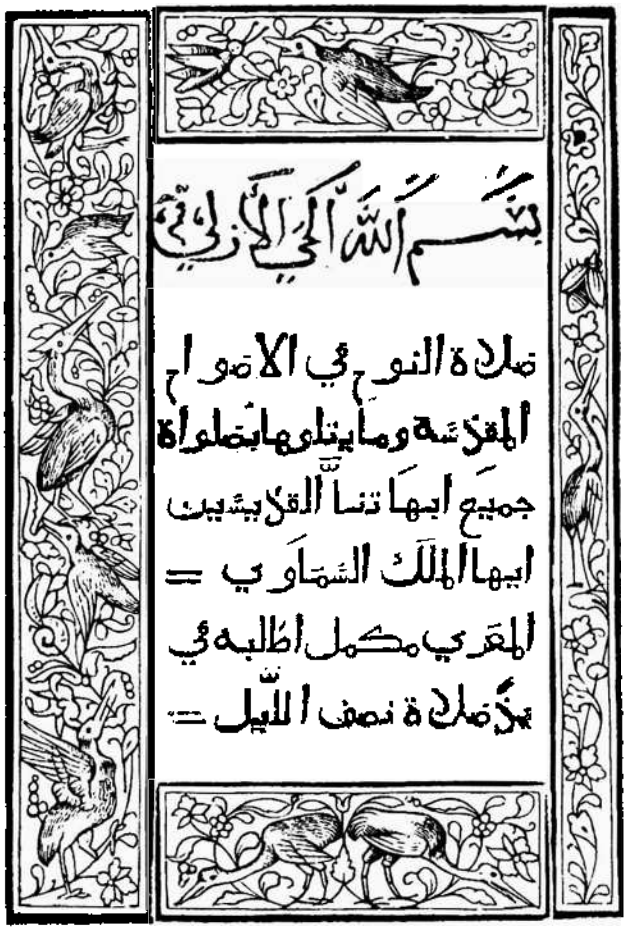

FIGURE 1. Kitāb Ṣalāt al-Sawā'ī, *Fano, Italy, 1514; printed surface: 13.2 × 8.2 cm. (Reproduced with permission of the Princeton University Library.)*

entalism, issued a polyglot grammar of oriental languages, including Arabic, which was the first recorded printing of Arabic in Paris. By the middle of the 17th century, books were being issued in Arabic type in Paris, Rome, Oxford, Leiden, Milan, and Amsterdam. Perhaps the most famous press was established by Cardinal Ferdinand de Medici in Rome in 1583 or 1585. (See Figure 2.)

The Melkites

The earliest printing of the Arabic alphabet in the Middle East was accomplished by Arabic-speaking Christians in Syria and Lebanon. The beginning of this story, however, goes back to a Melkite monastery in Snagovo, a village close to Bucharest, where a press was established by the Patriarch Athanasius III al-Dabbās (1647–1724) with the assistance of Constantine Brancoveanul, voïvode of Valachia. A Georgian monk, Anthime d'Iver, cast the type, and in 1701 the first book, a *Liturgy* in Greek and Arabic, was published. A "book of hours" followed in 1702.


يوحنّا

الفصل التاسع

و بعد يومين خرج يسوع من هناك و مضي الى
الجليل * لان يسوع شهد ان النبي لا يكرم في مدينته *
ولما صار الى الجليل قبله الجليليون لانهم عاينوا
كلّ ما عمل بيروشليم في العيد لانهم جاؤا الى العيد * ثم
جاء يسوع ايضًا الى قانا الجليل حيث صنع الماء خمرًا
و كان في كفرناحوم انسان ملكي ابنه مريض هذا
سمع ان يسوع قد جاء من يهودا الى الجليل فانطلق
اليه وسأله ان ينزل و يبري ولده لانه قد كان قارب
الموت فقال له يسوع ان لم تعاينوا الايات و الاعاجيب لا
تومنوا فقال له ذلك الملكي ياسيّد انزل قبل ان يموت

304

FIGURE 2. *Arabic Bible, Medici Press, Rome, 1591; printed surface: 25 × 13 cm.*

There does not appear to be sufficient evidence to support the claim that Athanasius published an Arabic Bible in 1700.

The press at Snagovo was neglected after the death of Anthime; so the new patriarch, Silvester, caused a press to be set up first in the Monastery of Saint Sābā (Sabbas) in Bucharest and then in Yassy. This press issued Melkite liturgical works, such as the *Liturgikon* in 1745 and the Book of Psalms in 1747.

The first printing press in the Middle East was located in Istanbul before the end of the 15th century—but it used Hebrew type exclusively. It printed a few Arabic books by using Hebrew characters.

The Melkites were responsible for establishing the first Arabic press in the Orient. This was set up in Aleppo at the beginning of the 18th century, and the Patriarch Athanasius III al-Dabbās was in some way responsible for it, although the details are not clear. Opinion varies on the source of the type and printing equipment. It either came from Snagovo, or 'Abd Allāh Zākhir made the type in Aleppo. It is evident that Constantine of Valachia had some share in the press at Aleppo because his coat of arms appears on the first page of the first book printed there. The latest and best student of the Aleppo press, Father Joseph Nasrallah, believes that 'Abd Allāh Zākhir was the true founder of this first Arabic press in the Middle East, having designed and cast the type and fabricated much of the equipment.

'Abd Allāh Zākhir was born in 1680 in Himah and became skilled in his father's profession of goldsmith. In 1701 he went to Aleppo and studied Arabic grammar, philosophy, and religious sciences. At some stage of his career he became closely attached to the Patriarch al-Dabbās. This friendship lasted until 1720.

The output of the Aleppo press was entirely religious. The first publication (1706) was a book of Psalms entitled *Kitāb al-zabūr al-sharīf*. In the same year the Gospels under the title *Kitāb al-injīl al-sharīf al-ṭahīr wa-al-miṣbāh al-munir al-zāhir* appeared. The third book to come off the press (1707) was the *Kitāb al-durr al-muntakhab* of Saint John Chrysostom (347–407) in a translation from Greek to Arabic by al-Dabbās. The following year the *Epistles* dealing with prophecy were issued under the title *Kitāb al-nubūwāt al-sharīf*. The fifth book issued was a rearranged edition in 1708 of the *Kitāb al-injīl*. Altogether, some 11 works were issued in Aleppo—nothing after 1711. The fate of the Aleppo press is not known. 'Abd Allāh Zākhir left Aleppo in November of 1722 as a consequence of a religious dispute within the Melkite community. Zākhir championed the Catholic cause.

Zākhir moved first to the monastery at al-Shuwayr in Lebanon, and then to Zūq Mikāyil. He moved frequently but was at Zūq Mikāyil again from 1728 to 1731, and during this time he began work on a printing press. For some reason he moved again (and for the last time) to the Monastery of Saint John the Baptist in al-Shuwayr, where (having secured a press from Europe) he set about to design, engrave, and cast a new set of Arabic type similar to that used by the Society to Propagate the Faith in Rome.

The press at al-Shuwayr started operating in 1733 and terminated in 1899 after issuing some 32 separate titles and 36 editions. The Psalter, printed originally in 1735, went through 15 editions. (See Figure 3.)

Zākhir died in 1748. He bequeathed his press and equipment to the congregation at al-Shuwayr with the stipulation that his disciple Sulayman al-Qattān direct the press.

Istanbul

Almost simultaneously with the work of Zākhir at Zūq Mikāyil and al-Shuwayr, the first Arabic printing press was being established in the political and cultural center of the Islamic world. Printing was not unknown in Istanbul, for a Greek press

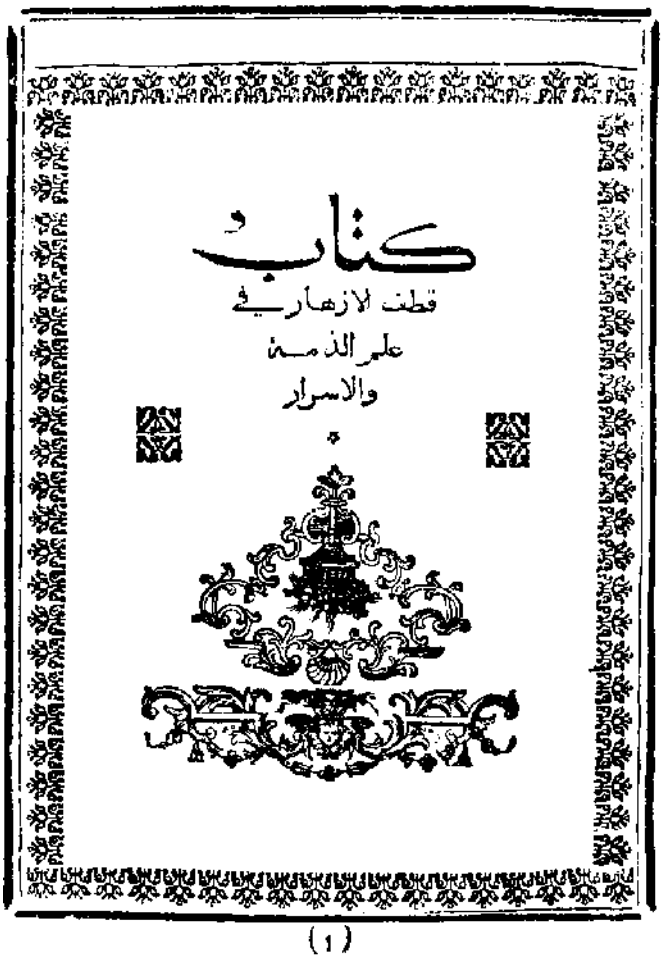

FIGURE 3. Kitāb qaṭf al-azhār fi 'ilm al-dhimmah wa-al-asrār, *al-Shuwayr, Lebanon, 1797; printed surface: 17 × 12 cm.*

had existed prior to 1627 and a Hebrew press had functioned as early as 1503. Nevertheless, it was not until the relatively enlightened rule of Sultan Ahmet III and his Grand Vezir Ibrahim Pasha that conditions were ready for the successful introduction of Gutenberg's invention in Turkish Muslim society.

One Sa'id Effendi accompanied his father on a diplomatic mission in Paris in 1721 and saw the ease with which multiple copies of books could be made by the press. On his return to Istanbul he enlisted the help of Ibrahim Muteferrika to present the idea of the advantages to be derived from a Turkish press. The grand vezir concurred with them that a press would assist in the spreading of law and learning, promote science, prevent the loss of rare manuscripts, and reduce the costs of learning. The sultan agreed, and the mufti 'Abd Allah was asked for a *fatwā* (an opinion based on religious law). The mufti opined that printing was praiseworthy if carried out by experts resulting in correct texts, at low prices, in nonreligious subjects. A group of representatives of the *'ulema'* concurred. The way was cleared, then, and on July 5, 1727, Ahmet III issued a *Khaṭṭ-i sharīf* allowing a press to be established,

with two stipulations: (*a*) each text to be printed must first be approved by four scholars and judges selected by the sultan; (*b*) no books dealing with religious subjects, such as the *Qur'ān, ḥadīth, tafsīr,* or *fiqh* would be printed.

Ibrahim Muteferrika, the man responsible for operating the press, was one of the most interesting characters of the age. Born a Hungarian about 1674 at Klausenburg, he was captured and taken to Istanbul in 1693 and sold into slavery. He converted to Islam and adopted the name Ibrahim. Becoming fluent in Turkish, and knowing several other tongues, his intelligence and aptitudes secured for him high positions in the service of the Ottoman government. In 1728 he had the printing machinery installed in his house. The press was got from France, printers and typesetters were brought in from Europe, and a typecaster was obtained from one of the Hebrew presses in Istanbul.

The titles chosen and edited by Ibrahim were significant in Turkish cultural history. The earliest printings are as follows.

1. (1729) the *Mukhtār al-ṣiḥāḥ* (which is an Arabic dictionary), by al-Jawharī, in its Turkish translation by Wānqūlī, in two folio volumes. This work also contains:
   a. the *khaṭṭ-i sharīf* of the sultan
   b. an introduction by Ibrahim Muteferrika
   c. the *fatwā* of the Mufti 'Abd Allah
   d. the approval of the *Qadiaskar*
   e. an anonymous work justifying printing.
2. (1729) the *Tuḥfat al-kibār fī asfār al-biḥār,* by the well-known Ḥājjī Khalīfah (d. 1658). This work deals with geography in general, the Mediterranean in particular, and the Turks' naval expeditions. It also includes a work by Ibrahim Muteferrika on geodesy. (See Figure 4.)
3. (1729) the *Tarjumat-i tārīkh-i sayyāh*—a Turkish translation of Judas Thaddaeus Krusinsky's Latin work on the recent Afghan take-over in Persia.
4. (1729–30) the *Tārīkh al-Hind al-Gharbī*—a history of the West Indies and the Americas.
5. (1729–30) the *Tārīkh-i Timūr,* of Ibn 'Arabshāh, in the Turkish translation by Naẓmīzādah.

Ibrahim Muteferrika remained in charge of the press until his death in 1742. During his life, 17 titles in 23 volumes were published, and some 12,500 copies were printed: 4,000 for the first two works and 500 copies for each of the remaining works. Most of them dealt with history and geography.

Egypt

General Napoleon Bonaparte introduced Arabic printing to Egypt when he invaded that country in 1798. The French took two presses with the expedition. The first, which was the official press, had been confiscated from the College of the Propaganda in Rome; it was supplied with type in Arabic, Turkish, Persian, Greek,

FIGURE 4. Tuḥfat al-kibār, *by Ḥājjī Khalīfah, Istanbul, 1729; printed surface: 20 × 12.5 cm. (Reproduced with permission of the Harvard College Library.)*

and other European languages. The other press was the private property of Marc Aurel.

Printing occurred before the actual debarkation at Alexandria, as Arabic and French proclamations were issued to the Egyptian people from shipboard. The official press was set up first in Alexandria; Marc Aurel followed the French army to Cairo and his press became the first in that city, save for a Hebrew press that may have been active between 1562 and 1566. Aurel began printing the journals *La décade égyptienne* and *Courier de l'Égypte* (both of which used Arabic type as well as French) but sold his press to the French government in September of 1799. The official press moved to Cairo and settled in the Azbekiyah district and was named the al-Maṭba'ah al-Ahlīyah. It was under the direction of J. J. Marcel and had both Arabic and French sections. (See Figure 5.)

This Napoleonic printing venture lasted no longer than the occupation (1798–1801): Aurel's press was removed to Europe and the other apparently was destroyed. Many Egyptian intellectuals, however, had seen the presses and realized the benefit to be derived from them.

ALPHABET
ARABE, TURK ET PERSAN.

FORME.

ORDRE.	NOM.	FINALES. liées à la précédente.	FINALES. non liées à la précédente.	INITIALES ET MÉDIALES. liées à la précédente.	INITIALES ET MÉDIALES. non liées à la précédente.	VALEUR.
1	Elif	ـا	ا	ـا	ا	A.
2	Be	ـب	ب	ـبـ	بـ	B.
3	Te	ـت	ت	ـتـ	تـ	T.
4	Thpe	ـث	ث	ـثـ	ثـ	T. Ç.
5	Djym	ـج	ج	ـجـ	جـ	DJ. G.
6	Hha	ـح	ح	ـحـ	حـ	HH.
7	Kha	ـخ	خ	ـخـ	خـ	KH.
8	Dal	ـد	د	ـد	د	D.
9	Dzal	ـذ	ذ	ـذ	ذ	D. Z.
10	Re	ـر	ر	ـر	ر	R,

A 2

FIGURE 5. *Type specimens from* L'Imprimerie orientale et française, *Alexandria, 1798; paper size: 22 × 16 cm. (Reproduced with permission of the Houghton Library, Harvard University.)*

The establishment of a press at Bulaq, a suburb of Cairo, was a part of the far-reaching reforms of Muhammad 'Ali (1805–1849), the "father of modern Egypt." Recognizing the need for technical and scientific training in education, this illiterate ruler established numerous schools to train an educated elite. He needed large quantities of textbooks in Arabic and Turkish. Niqūlā al-Masābakī was sent to Milan in 1815 to learn the art of printing; a building was prepared in 1819, and printing machinery installed in 1821. The first book issued at Bulaq appeared in 1822, an event of capital importance in the course of Egyptian history.

During the first 20 years of its activity, the Bulaq press issued at least 243 titles. More were in Turkish than Arabic, and almost all were on military or technical subjects, including numerous translations from European languages. This Egyptian press, far more than the Istanbul press, introduced Western scientific and technical information to the Muslim world.

FIGURE 6. Alf laylah wa-laylah [*Arabian Nights*], *Bulaq, Egypt, 1835; printed surface: 21 × 13 cm. (Reproduced with permission of the Harvard College Library.)*

The early type used at Bulaq was cast in Italy. (See Figure 6.) Later, some was obtained from France. In 1826 Muhammad 'Ali sent a delegation to Europe to study printing, and by the 1830s printing had reached a good technical level at Bulaq.

As a European style of type offended the Muslims' aesthetic sense, a calligrapher named Senglakh Efendi al-Farisi was called upon to engrave a set of matrices. An example of his work, the *Dīwān* of Ibn al-'Arabī (Bulaq, 1854), is often regarded as the most beautiful specimen of Arabic type printing. (See Figure 7.)

In addition to the printing press at Bulaq, Muhammad 'Ali introduced numerous lithograph presses at his new-founded schools. The Medical School press was set up in 1827; the Artillery press in 1831. The lithograph press in the War College was used for Turkish and Arabic. Its staff turned out a weekly paper in Italian and Arabic. During the campaign of 1833 it published *al-Jarīdah al-'askarīyah.*

By 1846 the Bulaq press alone had issued 302,843 copies. Private presses did

FIGURE 7. Dīwān of Muḥyī al-Dīn Ibn al-'Arabī, *Bulaq, Egypt, 1854-55; printed surface: 20 × 8.5 cm. (Reproduced with permission of the Harvard College Library.)*

not flourish in Egypt prior to this date because the Bulaq editions were sold cheaply. Nevertheless, some 102,231 copies had come off private presses by 1846.

The Bulaq press was the only industrial enterprise in Egypt that succeeded without foreign intervention in the 19th century. Its activities slowed down at the end of Muhammad 'Ali's rule and declined even further under the conservative 'Abbas Hilmi I (1848–1854). The number of Bulaq employees declined from 169 to 103 under 'Abbas, and dropped to 60 at one period under Sa'id (1854–1863).

The Bulaq press ceased to function during the 'Urābī revolt in 1882 but shortly afterwards entered a period of remarkable progress under the directorship of Husayn Husnī. A number of Italian experts lent their skills to the enterprise, especially G. Mosca. In 1884 the government called in Edmond Banget from Paris to study the press, and a year later he became its director. Also in 1884 the name was changed to al-Matba'ah al-Ahliyah, the National Press. Its history up to the present has been marked by continual progress and the utilization of technical developments in printing.

Lebanon

The first press in Beirut was established by Yūnus Niqūlā al-Jubaylī, known as Abū 'Askar, in the Monastery of Saint Jā'urjiyūs (George) for the benefit of the Melkite sect. A book of Psalms was issued in 1751. This press was dormant after Abū 'Askar's death in 1787, until 1881, when new equipment was acquired. Strong competition, however, forced it to cease work, and the machinery was sold to Ibrāhim Bak al-Aswad of Ba'abdan.

The American Protestants in 1822 chose the island of Malta as their base of publishing operations. Books in numerous languages were printed and distributed from Malta. In 1834, however, the Arabic printing operations were moved to Beirut while others went to Izmir. The press got off to a slow start in Beirut due to the lack of skilled workers and to the hostilities between Egyptian troops, under Ibrahim Pasha, and the Ottoman army.

The first Arabic type used by the Protestants was referred to as "London" letters. In 1836 one of the American missionaries, Eli Smith, went to Leipzig with specimens of Arabic calligraphy and procured new type to be known as "Amrikani." (See Figure 8.)

The output of the press was educational and religious. The New Testament was printed in 1860; a magazine, *Majmu' Fu'ad*, was begun in 1851; and the first Arabic

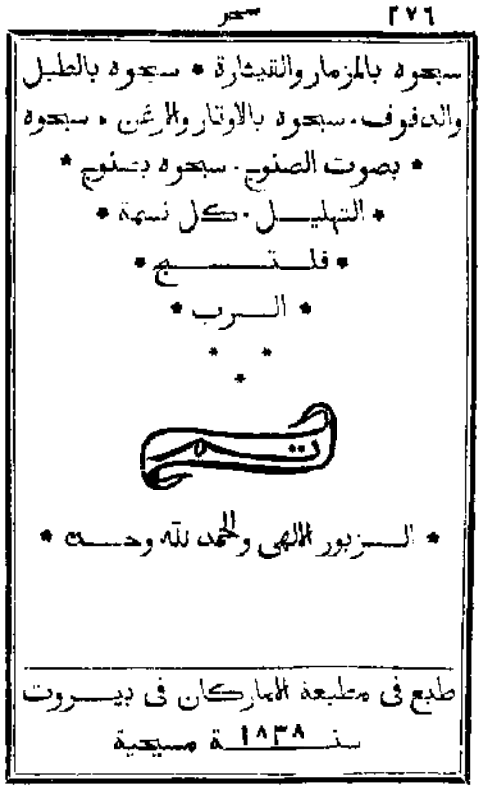

FIGURE 8. Kitāb al-zabūr [*Psalms of David*], *American Press, Beirut, 1838; printed surface: 12 × 7 cm. (Reproduced with permission of the Andover-Harvard Library.)*

illustrated journal, the *Akhbār 'an intishār al-injīl*, in 1863. The first magazine for children, *Kawkab al-ṣubḥ al-munīr*, appeared in 1870.

Spurred by the Protestants' success, the Jesuits set up a press in 1848—the third in Beirut. Their small lithograph press soon proved inadequate, and a larger press was acquired in 1853 through the generosity of the comte de Trimons. Its first fruit (1854) was the widely distributed *al-Iqtidā' bil-masīḥ*. In 1856 the Jesuits obtained a second press and within 4 years they produced 350,000 copies of 30 titles. Their type was originally obtained from Paris, but in 1868 type was secured from the American press.

Both the American and Catholic presses flourished in Beirut, which, due to political and geographical factors, became a thriving city and an intellectual center boasting the Syrian Protestant College (founded in 1866 and the precursor of the American University) and the Université Saint-Joseph (1875).

In addition to the letterpress, the Americans also had a lithograph press for the maps, atlases, and illustrations used in their textbooks. The period from 1870 to 1914 is regarded as its "golden age." The press continued functioning through the difficulties of World War I and is today, even in the midst of first-rate competition from native presses, an important intellectual force in the Arab world.

The Catholic press obtained all the modern equipment of the late 19th century and embarked on a program of publishing classical Arabic literature as well as the work of the best contemporary authors. In 1898 it began the highly regarded journal *al-Mashriq*, which is still published. Its Bible, translated by Father A. Rodet with stylistic corrections by Ibrāhīm al-Yāzijī, was issued in 1876 and won a gold medal in the Paris exposition of 1878. New quarters for the press were provided in 1875 near the Université Saint-Joseph. During World War I it was seized by the Turks, but was reopened and is today famous for its production of first quality scholarly publications.

Khalīl al-Khūrī established al-Maṭba'ah al-Sūrīyah in 1857 and issued the journal *Ḥadīqat al-akhbār*, which was the first popular journal in Arabic. It later became an official journal of the Ottoman government in Lebanon. al-Khuri's machinery came from France and Italy, and some of his type was procured from the Catholic press. al-Maṭba'ah al-Sūrīyah issued many literary works and contributed greatly to the rise of literacy in Lebanon. Its operations ceased in 1911.

Ibrāhīm al-Najjār established the Maṭba'ah al-Sharqīyah in 1858 with equipment imported from France. Official documents and commercial papers made up most of his publications, but among the books issued was his own *History of the Ottoman Sultans* (in Arabic) in 1858. When Ibrāhīm died in 1863, the printing business was left to his brother Ḥannā and to the Maronite bishop of Beirut. Ḥannā took his portion, which consisted of the type, and founded his own press, named al-Maṭba'ah al-Sharqīyah.

Yūsuf al-Shalfūn established the al-Matba'ah al-Umumīyah in 1861. It issued four papers: (*a*) *Jarīdat al-zahrah*; (*b*) *Majallat al-nahlah*, by Luwis al-Sabunji; (*c*) *Jarīdat al najāḥ*, by Shalfūn himself; and (*d*) *Jarīdat al-taqaddum*. *al-Najāḥ* began as a weekly, but in 1874 it became the first Arabic daily paper. In 1871 al-Shalfūn went into partnership with Rizq Allāh Ḥaḍr to print religious and literary texts, but

Shalfūn sold his share to Yūsuf al-Dibs and henceforth the press was known as al-Maṭba'ah al-Umumīyah al-Kāthulīkīyah. Dibs's famous book on the history of Syria was issued from this press.

In 1874 al-Shalfūn established a new press named al-Maṭba'ah al-Kullīyah. For many years it issued the works supported by the Society of Saint George.

The Syriac Catholics set up a press in 1865 in Beirut. Most of its publications were commercial, but some literary texts were issued, such as *Usūl al-qirā'ah al-'Arabīyah wa-al-tahdhībāt al adabīyah*, by Luwīs al-Ṣabūnjī. Ṣabūnjī also printed his magazine *al-Najāḥ* on this press.

Jurjis Shāhīn established the al-Maṭba'ah al-Waṭanīyah in 1865. In the same year the monks of the Monastery al-Mukhalliṣ (near Sayda) established a press in Beirut to print religious and literary works—among which was Nāsif al-Yazijī's *Tawq al-ḥamāmah fi mabādī' al-nahw*. Part of this press was sold to Khalil al-Badrī, owner of the journal *al-Aḥwāl*, and the remainder of the al-Mukhalliṣ press functioned until 1900.

Buṭrus Jarwah, patriarch of the Syriac Catholics, established a press in Sharfah in 1816. The operation utilized a lithograph press as well as a letterpress for Syriac and Arabic type. The Druzes either destroyed or carried off the lithograph press in 1841, but the letterpress escaped injury. It was transported to Dayr Sharfah around 1851 and remained inoperative until 1865 when Father Luwīs al-Ṣabūnjī removed it to Beirut and furnished it with new type.

Hannā al-As'ad founded the Maṭba'at Bayt al-Dīn in 1852. It was a lithograph press.

The monks of Dayr Sayyidah Tamīsh Ibrāhīm al-Dīwānī set up a complete printing operation in 1855 using the old press from Quzhayyā furnished with new type from Beirut. It issued only a few works and ceased altogether by 1882. The equipment was sold to Dayr Quzhayyā.

A press was established at Ihdin in 1859 by Rūmānūs Yamīn and Yūsuf al-Dibs. It used the "Amrikani" type.

In 1863 Dā'ūd Pasha, the first mutaṣarrif of Lebanon, called upon Yūsuf al-Shalfūn to set up an official press in Bayt al-Dīn. Called the al-Maṭba'ah al-Lūbnanīyah, it at first used Catholic type, then the American, and finally new type from Austria. Its first book was *Kalīlah wa-dimnah*, in 1868.

By the end of the 19th century, numerous presses had been established in Lebanon. An economic slowdown due to the opening of the Suez Canal and to the depression of the Lebanese silk industry caused many of the presses to go out of business. This was especially true of the smaller firms outside of Beirut. The number of books printed, however, constantly rose due to the use of steam-operated equipment.

Another reason for the closing of some Lebanese presses was pressure from the government in Istanbul, especially after 1885. Journalism was placed under restrictions, and books had to be sent to Istanbul for approval prior to publication. The Ottomans themselves founded an official press in Beirut in 1885. It began issuing the journal *Bayrūt* in 1888.

The larger presses in Beirut had their own typefoundries and exported type to

Egypt and the United States. One of the innovators in Arabic type was Khalīl Sarkīs, founder of al-Maṭba'ah al-Adabīyah in 1876, for which he prepared an *Islāmbūlī* type. Quṣṭanṭin al-Bayṭār designed a *Fārisī* type, and Najīb Sarkīs a *thulth*-style type used in this outstanding Lebanese press. Another type innovator was the famous scholar Ibrāhīm al-Yāzijī (1847–1906). His type style formed the basis for that employed on Arabic typewriters.

Despite the difficult times of the late 19th century, new presses were established. The most important was the Maṭba'at al-Fawā'id, founded by Khalīl al-Badrī in 1891 to print his journal *al-Fawā'id*. It also issued the journal *al-Aḥwāl* and the magazine *al-Ra'īs*. It acquired a typefoundry in 1896; in 1900 it moved to new quarters. After World War I it began a new phase of activity and employed at least 100 persons. In 1921, however, its owner was banished and the press closed. Sam'an Faraḥ reopened the establishment and issued the paper *Sadā al-ahwāl*.

Another major press was the Maṭba'ah al-Unsīyah, founded in 1893 by Muhammad Salīm al-Unsī. It issued the newspaper *Rawḍat al-ma'ārif*. In 1903 Beirut had 16 printing firms.

The Young Turks' Revolution in 1908 led to the suspension of press regulatory laws, and consequently impetus was given to the growth of the political press in Lebanon. Between 1908 and 1912, 49 newspapers and 26 journals were started in Beirut alone; in al-Jabal, 21 newspapers and 11 journals were begun. This spirit of freedom was short-lived; the Committee of Union and Progress put into effect its policy of Turkification, and presses and schools came under renewed surveillance. The Beirut press was under duress, but the outlying areas remained virtually free. World War I had severe consequences for most of the presses, due to a general economic decline and the closing of schools. The war also led to the mandate, which favored publication in French instead of Arabic. In general the small presses perished but the large companies, by using modern equipment, began to prosper. Beirut today is a major center of Arabic printing and is surpassed only by Cairo.

Syria

In 1841 the second Arabic press in Syria was established in Aleppo by a Sardinian named Belafonti. He issued the first literary text in Syria, the *Dīwān* of Ibn al-Fārid, and he also printed the Psalms. The fate of his press is not recorded.

The first type press in Damascus was established in 1855 by Ḥannā al-Dūmānī. He directed it for 2 years and then sold out to Salīm Mudawwur. Salīm sold it to Ḥannā Ḥaddād, and it eventually passed to Muḥammad al-Ḥifnī in 1882 and became known as al-Maṭba'ah al-Ḥifniyah. It ceased to function in 1885. The type was attractive, but of unknown origin. 'Abd al-Qādir ibn al-Shaykh 'Umar Nabhān edited many of its publications.

The Maṭba'at Ḥalab al-Mārūnīyah was set up in 1857 in Damascus to provide books for Maronite religious use by Yūsuf Maṭar. The Ottoman government in 1864 set up the Matba'at Wilāyat Sūrīyah to print the official journal *Sūrīyah* in Arabic

and Turkish under the direction of Khalīl al-Khūrī from Beirut. The Turks also set up another official press called al-Maṭba'ah al-'Askarīyah, which specialized in army regulations.

In 1867 Cevdet Pasha, the famous historian and governor of Aleppo, set up a press to issue his journal *Furāt*, which was an official weekly. This press was supplied with Arabic, Turkish, and Armenian type and was directed by Jibrā'īl Barghūd.

al-Maṭba'ah al-'Azīzīyah was established by Hāshim al-'Attār in Aleppo in 1877 to print the paper *al-Shuhabā'*.

Other presses were founded in Syria during the 19th century, but due to poor markets, official policies, and competition from Beirut, only four were operating in Damasçus in 1893. In that same year Khālid Afandī Hasan established the Maṭba'at Rawḍat al-Shām, which did excellent printing until it closed in 1913.

Other important Syrian presses are as follows:

Maṭba'at Wilāyat Sūrīyah: Began to issue *Jarīdat al-shām* in 1896. After World War I it issued the official paper *al-'Āṣimah*.

M. al-Khayrīyah: Founded in 1880 in Damascus. A year later it was named the M. Majlis al-Ma'ārif.

M. al-'Ilmīyah: Founded in 1898 in Damascus by Muḥammad Hāshim; sold to Muṣṭafā Shūrī, who moved it to al-Fihā'.

M. al-Ḥamīdīyah: Founded in 1898 by Sulayman Luṭfī in Damascus. It issued the *Majallat al-Shams* during its short life.

M. al-Fawā'id: Founded in Aleppo in 1897 by 'Abd al-Masīḥ Anṭakī; it issued the literary journal *al-Shudhūr al-shahrīyah*.

M. Badā'ī al-Funūn: Founded in Damascus early in the 20th century. Its lithograph press issued many works in science and literature in Turkish, French, and Arabic. It remained operating through World War I.

M. al-Inṣāf: Founded in 1910 in Damascus by Adīb and Ṣāliḥ al-Haylānī. It published local journals, such as *al-'Aṣr al-jadīd*. After its destruction by fire in 1912, the owners opened a new press under the name M. al-Taraqqī. Fāris al-Khūrī and Muḥammad Kurd 'Alī were associated with this press. It survived the war and flourished.

M. Jarīdat al-Ayyām: Founded in 1927 by the Bābīl brothers in Damascus, it was one of the most important presses to appear between the wars.

M. Ibn Zaydūn: Founded by Wajīh Baydūn in 1925. It issued the magazines *al-Insānīyah* and *Kull jadīd*.

M. al-Hāshimīyah: Established in 1936 by Muḥammad Hāshim al-Kutubī. It specialized in school books, the *Qur'ān*, and colored maps.

Iraq

There is uncertainty about the date of the first appearance of Arabic printing in Iraq. A *Jūrnal al-'Irāq* founded by Dā'ūd Pasha al-Karjī, the wazir of Baghdad, is said to have been issued in 1816 by lithography. The first book bore the title *Daw-*

hat al-wuzarā fī tarīkh waqā'i' al zuwarā', by Rasūl Afandī al-Kirkūkī, and was lithographed either in 1821 or 1830.

In 1856 a lithograph press was set up in Kerbala to print commercial notices and Shiite literature; it lasted into the 20th century.

The first letterpress in Iraq was founded by the Dominican Order, in Mosul. Having established themselves in 1856, they began with a lithograph press but later acquired a fully equipped letterpress with type for Arabic, Syriac, and Greek imported from France, and Chaldean type from Anglican missionaries in Iran. The press had a foundry and bindery. The first book was probably *Riyāḍat darb al-ṣalib*, printed in 1868. The Dominican Press was confiscated during World War I and its equipment sent to the Maṭba'at al-Wilāyah.

In 1861 the Maṭba'at Kāmil al-Tibrīzī was established in Baghdad by the Iranian Mīrzā 'Abbās. It was a lithograph press—with the calligrapher Muhammad Jawād, another Persian, designing the plates.

The al-Maṭba'ah al-Kaldānīyah was founded in 1863 in Mosul by Rufā'il Mazījī al-Āmidī, but closed after a few years.

The official government press was not established until 1869 when the capable Turkish governor Midhat Pasha set up the Maṭba'at al-Wilāyah with facilities for lithography and letter printing. It had the first steam-operated equipment in the country. The official journal, *al-Zawrā'*, was issued in both Turkish and Arabic. Most of its work consisted of official publications, although a private person did issue the journal *al-Zuhūr* on it. In 1869 Midhat Pasha installed a new and complete lithograph press for the official establishment, and this was called the Maṭba'at al-'Askarīyah. Another government press was provided in Mosul in 1875.

Few additional presses were brought to Iraq prior to World War I—primarily because of the low level of literacy. After the war, however, the growth was phenomenal, matching developments in education, commerce, and industry. In 1965 the number of presses in the country numbered 146.

Palestine

Arabic printing was introduced to Palestine by the Franciscan order. In 1846 a monk named Frotchner set up a press with machinery from France and type from Austria. The type was later replaced with a supply from the Catholic press in Beirut. In 1900 the equipment was renewed, with the addition of a foundry and bindery.

Jordan

The first Arabic press in Jordan was established in 1909 by Khalīl Naṣr in the city of Hayfā. It moved to 'Ammān in 1922. The journal *al-Urdunn* was one of its publications. In 1925 a government press was started; and in 1926 Muhammad Nūrī set up the al-Maṭba'ah al-Watanīyah, which issued documents and numerous journals of local interest.

The Maṭba'at al-Istiqlāl al-'Arabī was established in 1932 by Jawdat Sha'shā'ah. It issued numerous journals.

A high literacy rate in Jordan has favored the printing industry, and as many as 106 presses were working in 1966.

Arabian Peninsula

The first press in Yemen was established by the Turkish government in 1877 to print the weekly official journal *Sanā'* in Turkish and Arabic.

The Turkish government introduced printing to Arabia with a foot-operated press in the Hejaz as early as 1882. In 1919 a press was installed in Mecca to print the official journal *al-Qiblah*. This press was later called Maṭba'at Umm al-Qurā. In the late 1930s several Saudis were trained in printing at the Bulaq press and, upon their return, the Mecca press became the most important in the country. The other Meccan presses were: M. lil-Sharikah al-'Arabīyah lil-Ṭab' wa-al-Nashr, from which was printed the paper *al-Bilād al-Sū'ūdīyah*; and the M. al-'Arabīyah, founded in 1935 to print *al-Manhal*.

Two presses were also founded in Medinah: one has printed the paper *al-Madīnah al-munawwarah* since 1936; the other was attached to the School of Agriculture. After World War II excellent modern presses were established in Saudi Arabia.

North Africa

The Abbé François Bourgade established a lithograph press in Tunis in the year 1845. Bank notes using Arabic script may have been issued in that year, but it was not until 1849 that the first Arabic book was published. It was a translation of *Soirees de Carthage, ou dialogues d'un prêtre catholique, un mufti et un cadi*. The translator and calligrapher was Sulayman al-Harā'irī.

The government set up an Arabic press in 1860; its first publication was a regulation dealing with army recruitment, *al-Miṣbāḥ al-muṣaffar fī tartīb thabūt al-'Askar*.

Algiers saw its first Arabic lithography in 1832 when the *Moniteur algerién* was issued.

Finally, the city of Fez, Morocco, was the source of a series of lithographed Arabic texts beginning in the reign of Muhammad IV (1859–1873). These books, all in the distinctive Maghribi style of script, form today an invaluable fund of literary, religious, and historical information. (See Figure 9.)

India

Perhaps the earliest instance of printing with Arabic type in India occurred in Calcutta in 1781 with the publication of the Persian *Inshā-i harkaran*. Charles

FIGURE 9. Kitāb salwat al-anfās, *by Muḥammad ibn Ja'far al-Kattānī (d. 1927), Fas, Morocco, 1898–99; lithographed surface: 18.5 × 12.5 cm. (Reproduced with permission of the Harvard College Library.)*

Wilkins was the typographer. Wilkins's type seems also to have been used in the first instance of Persian printing in Bombay, in 1801, consisting of announcements in the *Bombay Courier*. The first literary text from Bombay was printed in 1818. Lucknow had a type press using Arabic in 1819 or 1820.

Lithography was introduced early in the 19th century to Bombay, and was utilized for Arabic script books as early as 1827. Lithography provided the channel for the publication of an immense number of works in Persian and Arabic in the major Muslim centers of India, such as Lucknow, Kanpur, Poona, Bombay, etc. These books have not yet been adequately enumerated, and they are still being issued in a style that resembles the manuscript tradition of Islam. (See Figure 10.) One of the most influential presses in the world of Islam is the Dā'irat al-Mā'arif

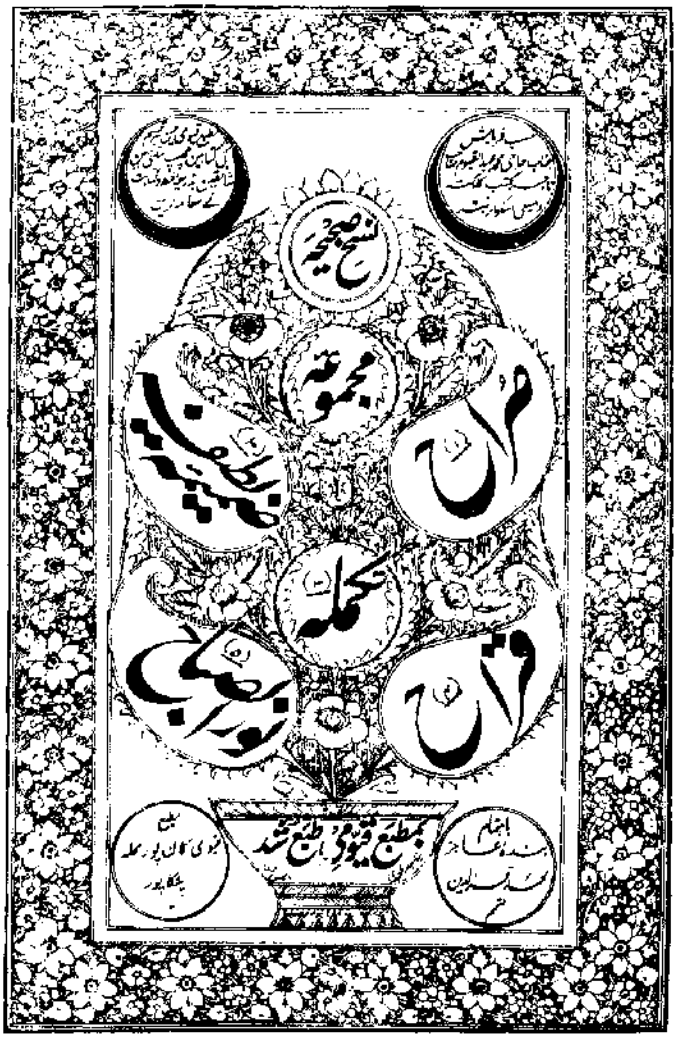

FIGURE 10. Majmūʿah [*a collectaneous volume containing five titles*], *Kanpur, India, 1906; lithographed surface: 27.5 × 17.5 cm. (Reproduced with permission of the Harvard College Library.)*

Press in Hyderabad (A.P.), India, which is dedicated to the preservation of Arabic religious literature.

Problems in the History of Arabic Printing

An atlas of Arabic typography is needed to show the relationship between various types and their evolution—Miroslav Krek, orientalist and librarian, is preparing one. There is also need for imprint catalogs of library holdings so that the output of various presses can be enumerated and evaluated. A recent work of this nature is: Muḥammad al-Shūrbajī's *Qāʾimah bi-awāʾil al-maṭbūʿāt al-ʿarabīyah al-maḥfūẓah bi-Dār al-Kutub* . . . , on the early imprints in the Egyptian National Library.

Islamic civilization has been reluctant to have its religious books, and especially

the *Qur'an*, printed on letterpress. Lithography, on the other hand, has been accepted and is prevalent in many regions as a means of enabling printed books to have the appearance of hand copying. Scripture remains scripture when lithographed. While Demeerseman has delved into the social psychology of Muslims with regard to printing, more work is needed to follow up his investigations.

Many have outlined in detail parts of the history of Arabic printing, but little attention has been given to underlying influences. This is especially lacking in the story of early printing by Christians. Was the development of printing in the Middle East an aspect of Western cultural imperialism? Why was printing pursued so early by Melkites and Maronites and not by their Muslim neighbors? The developments that favored printing within each community have not been adequately explored. Also, the role of printing as part of the 19th-century Arab renaissance needs elucidation. Perhaps the largest unexplored area is the political and economic. The rise of printing in Lebanon and its concentration in Beirut have not been adequately related to political, economic, and cultural movements.

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DAVID H. PARTINGTON

CHINESE PRINTING*

As with many another cultural achievement, there is no exact record of the invention of printing, although all evidence seems to confirm the basic fact that it was first effectively developed in China. The first mention of printing in the Chinese standard histories is found in the *Wu-tai shih*, the Annals of the Five Dynasties (907–960), compiled by Hsüeh Chü-cheng (912–981) and rewritten by Ou-yang Hsiu (1007–1072) (*1*). Both the older and the rewritten editions report the block-printing activities of a minister of state by the name of Feng Tao (881–954) (*2*). Since for centuries there had been no explicit information on earlier instances of printing, it had been customary for generations of Chinese to venerate Feng Tao as the inventor of printing. Later discoveries, however, have shown that there was printing in China before Feng Tao, and furthermore that printing did not occur as the invention of one single culture hero, but rather as an extended evolutionary process to which many an unknown craftsman must have contributed his share. The development appears to have been brought about and helped particularly by four factors: (*a*) the early use of seals, (*b*) the use of charms and amulets by Buddhists and Taoists, (*c*) the carving of stone inscriptions and the technique of obtaining rubbings from them, and (*d*) the rising demand for "religious" (including astrological and meteorological) literature. The use of seals is an ancient Chinese practice (*3*). The earliest record is an entry for the year B.C. 544 in the *Tso-chuan*, a classic of history, concerning a sealed document (*4*). In later historical records, Emperor Ch'in-shih-huang (B.C. 221–107) is said to have given attention to the matter of seals in a decree in which he limited the use of *hsi* [jade seals] exclusively for the imperial seal of state (*5*). At that time already, seals must have been in common usage for official and private purposes. Even China's oldest etymological dictionary (around A.D. 120) lists the word for the common seal, *yin*, and explains it as the "sign of authentication held by those who conduct government" (*6*). The Chinese character for *yin* in its oldest form appears to depict a hand impressing an object. Although Chinese "pictographs" admit of varying, often rather whimsical, interpretations, it is significant in this context that the same word and character, *yin* ("the seal," "to impress"), has been applied to the art of printing since its inception and has been retained in this sense to our days. The semantic and graphic link seems to underscore the fact that the use of seals must have played an important role in the development of printing in China.

The use of carved stamps lends itself naturally and easily also to many other applications, such as stamping of designs and pictures on textiles, pottery (*7*), coins, and roof tiles—all items which indeed have been found thus adorned since ancient times. Particularly relevant in this context is the fact that we find stamps used for the multiplication of pictures and longer messages of a religious nature. Reference must be made here to Buddhism, which had entered China around A.D. 100. It is assumed that Chinese Buddhists brought back from their pilgrimages to India the

* The Notes and Bibliography for this section begin on page 83.

custom of multiplying Buddha's image and short Buddhist charms (*dharani*) as devout acts, pleasing to the deity and ensuring his blessings (*8*). On their return, the Chinese devotees would carve such images and messages in wood and print them on cloth and on paper (invented about that time). The oldest extant specimens of such prints were not found in China, but in Japan and Korea. In Japan it is the *dharani* customarily referred to as the *hyakumantō* (see *Japanese Printing*), and in Korea, a *dharani* discovered in 1966 at the Pulguk-sa Temple in Kyongju (see *Korean Printing*). The Taoists too are said to have manufactured similar charms; a reference to such may be found in Ko Hung's *Pao-p'u-tzu*, a work of the early fourth century (*9*). Whether the Taoist practice had in fact preceded the Buddhists, as some think, is now a moot question.

As to the third phenomenon, the stone inscriptions, we know of their equally long history in China. The earliest specimens are the so-called Stone Drums, formerly arrayed in front of the Confucius Temple in Peking and now reportedly in the Peking Palace Museum, dating perhaps from as early as B.C. 770 (*10*). Further early evidence of stone inscriptions are the stelae that Emperor Ch'in-shih-huang left as his travel mementos on several mountains all over China (*11*). In A.D. 175, the Confucianists at the Han court prevailed on the emperor to have a complete version of the Confucian classics engraved on stone tablets, to ensure textual uniformity and authenticity. The feat was repeated at least six times by succeeding dynasties (*12*). Later, with sufficiently strong paper and suitable ink, these stelae were used as matrices, from which copies were obtained by means of rubbings or squeezes (*13*), a method that has been used for centuries and is still being used by Chinese archaeologists (*14*). The process, in a way, is already a form of printing; the end product shows white characters on a black background. In the 10th century, when a new set of authentic classical texts was thought to have become necessary, it was Feng Tao and one of his colleagues (the lesser-known Li Yü) who, in A.D. 932, submitted a petition to the throne suggesting the simpler and cheaper method of wood-block printing, instead of engraving on stone slabs, in other words, to have the Confucian classics block-printed on paper—hence Feng Tao's fame as the Chinese inventor of block printing. Religious rivalry may also have helped establish his fame, since Feng's project was meant to reassert Confucianism in the face of Taoist and Buddhist advances, a circumstance which made later historiographers—all Confucianists—unfailingly inflate Feng's accomplishment as a pioneering feat of the highest order.

This brings us to the fourth factor that contributed to the invention of printing in China, namely, the pressure of religious demands, partly from religionists and their fervor to propagate the faith, and partly from a receptive populace that clamored for religious or spiritual aid in their problems and tribulations. A clear indication of this fact is that whatever earliest specimens of printing have come to light, they have been of religious, mostly Buddhist, nature. The most momentous find was one of the items discovered at Tun-huang, a block-printed *Diamond Sutra* with its dedication dated A.D. 868, a date which makes it the oldest extant printed book in the world (*15*). The book—actually strips of paper pasted together to form a

scroll—is now preserved at the British Museum. It "shows an advanced technique behind which there must have been a long evolution. It is less crude than any European block printing of pre-Gutenberg days" (*16*).

Attempts to advance the inception of printing in China to even earlier dates mostly lack substantial evidence (*17*). However, more reliable claims can be made for the early printing of almanacs, which used to be important for the predominantly agricultural population by giving guidance as to weather and correct planting seasons. When the imperial commissioner Feng Su (767–836) observed that almanacs were being printed privately in Szechwan and in the lower Yangtze region, he elicited an imperial edict (835) forbidding such private printing, since the printing of calendars and almanacs was an imperial prerogative (*18*). There is furthermore the case of Liu P'ien, who, in 883, observed that printed books on divination, geomancy, astrology, and related subjects were being sold in Szechwan (*19*). Yet another seemingly authentic report has it that Japanese Buddhist monks returned to their country from China's capital, in 865, with many Chinese books, some of which were described as printed books (*20*). Actual specimens of printing of that time—apart from the abovementioned *Diamond Sutra*—are extant only in a few fragments, derived from the Tun-huang finds, now preserved at the British Museum and the Bibliothèque Nationale. In the People's Republic, an eighth-century charm is said to have been discovered in a T'ang tomb in Szechwan (*21*).

After printing had its start in China—presumably sometime in the eighth century, toward the end of the T'ang dynasty—it developed quickly, much stimulated (as later also in Europe) by religious activities. Even the political disintegration that followed the 300-year T'ang empire did not impede a healthy development of printing. This is particularly to be observed in Szechwan province, where at times many intellectuals and even the imperial court had taken refuge from political upheavals, and also in the rich lower Yangtze region and in the mercantile centers of Fukien. Apart from the previously mentioned block printing by Feng Tao, particularly noteworthy instances are: the block-printed edition of Tu Kuang-t'ing's commentary to the *Tao-te-ching*, the Taoist classic, in 30 volumes (909–913); the block-printed edition of the *Ch'an-yüeh-chi*, a collection of Buddhist poetry (923); and widespread private printing of calendars, now that imperial controls had relaxed (*22*). Noteworthy also is the story of Wu Chai-i, who, as a poor student, was frustrated by the scarcity of books and vowed action if ever in a position to act and who indeed later, as prime minister, had a number of literary works printed (around 953), one of them the *Wen-hsüan* anthology of ancient poetry (*23*). These are definite indications of a proliferation of block printing during the Five Dynasties period (907–960) (*24*).

However, it was during the subsequent Sung dynasty (960–1279) that Chinese wood-block printing really came into its own, reaching a degree of technical and artistic perfection hardly matched ever since (*25*). Again it was Buddhism, above all, that eminently stimulated and sustained printing activities. The first Sung emperor commissioned the Buddhist canon, the *Tripitaka*, to be block printed. It took 13 years (971–983) to cut the required 130,000 blocks. Interestingly, they were cut in Szechwan, a fact which attests to the unbroken wood-block printing tradition

in that province. Later in the Sung dynasty, the *Tripitaka* was reprinted no less than another five times, partly on private initiative, in Chekiang and Fukien, and was completed the last time in 1349, that is, after the fall of the dynasty and after almost 120 years of painstaking work (*26*). Princeton's Gest Library claims to have an almost complete edition of this *Tripitaka* (*27*). Among other specimens of that era, a particularly interesting item is the *dharani* dated A.D. 975, recovered in several copies from a Hangchow pagoda, the Lei-feng-t'a, when it collapsed on September 25, 1924 (*28*). The text of the *dharani* claims that it had been printed in 84,000 copies. One of the copies was acquired by the Library of Congress (*29*). The news of its discovery brought out reports of a similar *dharani* dated 956, now in the Museum of Far Eastern Antiquities of Stockholm (*30*). Similar ones were reported from the People's Republic (*31*).

The Taoists also benefited from the increase in printing activities and contributed to it. In fact, the peculiar osmosis in Sung times among the "three religions" created an atmosphere of tolerance conducive to the production of books of varying ideologies and religions. Several of the Sung emperors were patrons of Taoism. The second Sung emperor had the whole Taoist canon collected in 3,337 *chüan* ("chapters" or "fascicles"). His successor supplemented 620 *chüan* and graciously bestowed preface and title, naming it *Pao-wen t'ung-lu* [Comprehensive Record of Precious Writings] (around A.D. 1010). A block-printed edition of this work is known to have been produced in Fukien in the reign period *ch'ang-ho* (1111–1117) (*32*). Smaller Taoist works, such as the *Tao-te-ching*, *Chuang-tzu*, and *Lieh-tzu*, also saw their block-printed editions. Little of these works has survived the wars and particularly the anti-Taoist persecutions of the Mongol regime.

As to Confucianism, institutionalized in the Imperial Academy, it had never ceased to be the prime ideology for most of the empire's bureaucracy and scholar-elite. The rejuvenation of Confucianism, the rise of Chu Hsi (1130–1200) and his neo-Confucianist school, and the controversies between conservatives and innovators were only made possible by the cheaper and more abundant production of books, a phenomenon which has been compared to the influence of the printed Bible at the time of the European Reformation (*33*). The academy's book production was prodigious and its prints ranked highest as regards careful editing and technical execution. One report has it that the imperial library increased its holdings from a mere 4,000 to over 100,000 items within the first 40 years of the Sung rule, thanks to academy prints (*34*). At the start, the Imperial Academy held a monopoly over all printing activity, in the interest of utmost authenticity of texts, but when this monopoly was rescinded in 1064 (*35*), printing spread rapidly and was carried out at innumerable local government offices and by private and commercial printers.

The Sung dynasty also saw the invention of movable type printing by an artisan (blacksmith?) by the name of Pi Sheng, who started his printing experiments with movable types made from clay during the reign period *ch'ing-li* (1041–1048) of Emperor Jen Tsung. A detailed description of his process and method of operation written by one of his contemporaries has come down to us (*36*). Although this described Pi Sheng's printing as "miraculously speedy," the invention did not im-

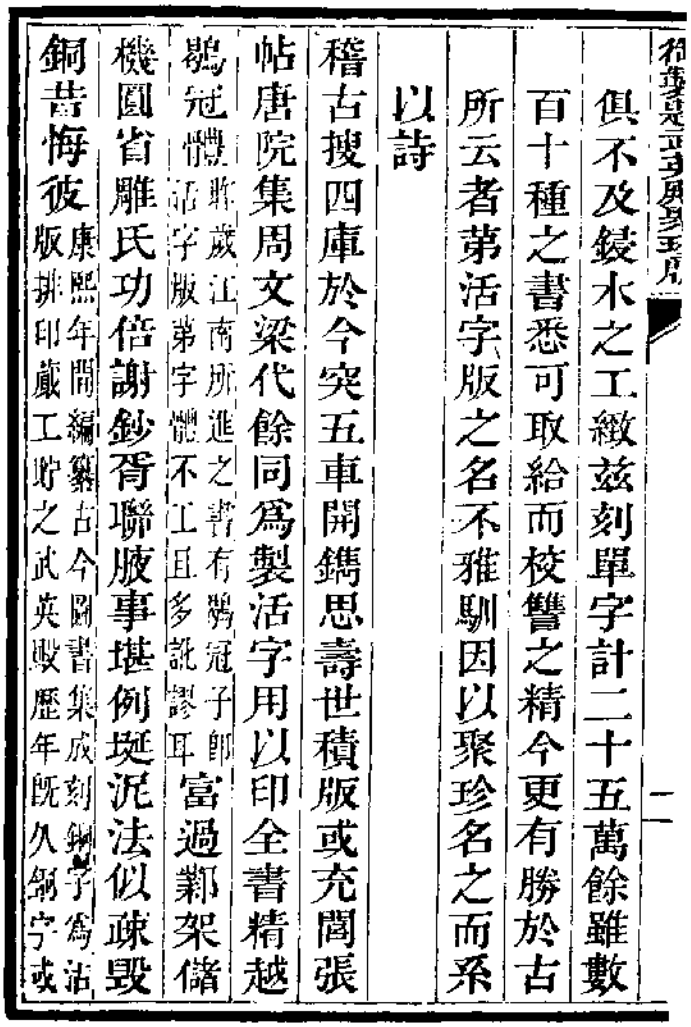
mediately revolutionize Chinese book production as Gutenberg's invention in Europe did about 400 years later. The principal reason may be China's intricate writing system, which requires a very much larger font of type than alphabetical writing. Other reasons may be the primitive and not very effective technique employed by Pi Sheng and the traditional Chinese appreciation of individual calligraphy, which to some extent would become lost in the printing process using precut movable types. Still, clay and porcelain types continued to be used occasionally by Chinese printers, even as late as 1844–1848 (*37*).

The Mongol invasion, noted for its ruthless destructiveness, proved only a very temporary setback for Chinese cultural developments. Printing, for one thing, resumed with great impetus, surprisingly enough much stimulated by the new alien rulers of China. In 1236, a special Bureau for Editing and Compiling Books was established in Peking, the new capital, and a similar bureau in P'ing-yang (*38*). After the capture of Hangchow (1276), the Mongols removed much of the former Sung Imperial Academy, together with printery and printers, to Peking. Printing resumed chiefly as reprinting of depleted Sung editions, but soon the classics, as well as historical and philosophical books, were newly cut and printed. Noteworthy among the general works is the *Nung-shu* [Book on Agriculture] by Wang Chen (1313), which contains also the description of an improved method of movable type printing, using wooden types and a special revolving table to facilitate the typesetter's work (*39*). But even this "reinvention" of movable type printing did not have too much of an impact on bookmaking in general. Printing by local government offices, schools, and commercial printers flourished unrestrainedly. Mention should be made of the *Seventeen Dynastic Histories* printed as a joint venture by various provincial printeries (about 1298–1307) (*40*), and a *Diamond Sutra* done in red and black at, or on behalf of, the Tzu-fu Temple of Chiang-ling, Hupeh (about 1341–1367), which is the first attested multicolor block print (*41*).

Printing in the Ming dynasty (1368–1644) is known for its quantity and variety. The imperial government maintained special bureaus at its two capitals, Peking and Nanking, for the compilation and printing of books. In addition, every larger province had its printery, and private commercial printing also flourished, satisfying an ever-growing public demand. The huge expansion of printing inevitably also produced quantities of badly edited books which gave rise to a prejudice in later generations against all Ming imprints, which seems an excessive generalization (*42*). Definite progress was registered particularly in three fields of printing: movable types, book illustrations, and multicolor printing.

On movable type printing we lack actual details of the stages of its improvement, but we know that hard mulberry tree wood was preferred as material for types, later to be replaced by copper and tin. In the development of copper type, Korea played an important role. In spite of definite progress, however, movable type printing still lagged behind the traditional block printing throughout the Ming era.

Book illustrations—as old as China's first printed book, the *Diamond Sutra* of 868—became more widely used, perhaps for added appeal to a wider and more popular audience, possibly also due to the increasing production of belles-lettres literature, which lends itself more to illustrative adornment (*43*). A Soochow spe-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機圓省雕氏功倍謝鈔胥聯版事堪例埏泥法似疎毀
銅昔悔彼康熙年間編纂古今圖書集成刻銅字爲活
版排印藏工貯之武英殿歷年既久銅字或

FIGURE 1. *Sample page from a printing manual, 18th-century wood-block print.*

cialty in Ming times was the production of New Year poster pictures, essential items for the New Year festivities, a production that later shifted to Yang-liu-ch'ing near Tientsin (*44*). Multicolor printing had been in use much earlier than Ming times, for instance, in producing paper currency during the Sung and Yüan periods (*45*). The method used was chiefly to cut one block for each color. For ordinary writing, the colors were usually black and red; for illustrations and pure art prints, up to five different colors were used. Excellent specimens of this kind are two products of the Ten Bamboo Studio of Hu Cheng-yen (ca. 1582–1672), one being a collection of fancy writing paper and the other a collection of woodcut prints dated 1633 (*46*). Perhaps better known in this genre is the *Manual of Printing from the Mustard Seed Garden*, which was produced shortly after the fall of the Ming dynasty, namely, 1679–1701 (*47*).

In the Ch'ing dynasty the first three emperors were particularly active in promoting Chinese cultural activities. In the field of book printing, two items stand out

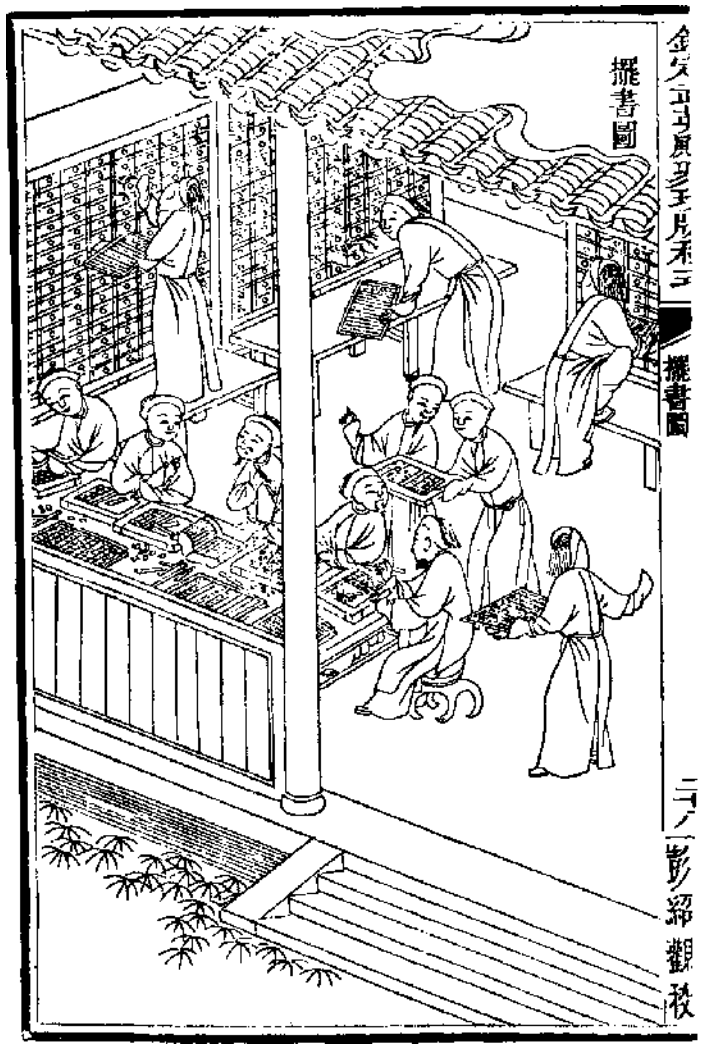

FIGURE 2. *Typesetting, from an 18th-century printing manual.*

from this era: Emperor K'ang-hsi (1662–1722) ordered a new encyclopedic anthology, the *Ku-chin t'u-shu chi-ch ch'eng* [Anthology of Ancient and Modern Books], to be printed. It was completed in 1725 in 10,000 fascicles, using copper type for the text and copper plates for its exquisite illustrations, presumably on the advice of European missionaries (*48*). The other feat was the reprinting of 138 titles of rare books ordered by Emperor Ch'ien-lung (1736–1795) (*49*). By this time the copper type of K'ang-hsi had disappeared—stolen or melted down to be made into coin—and printing was done by wooden movable type. Showing his approval and interest, the emperor coined a new term for movable type printing, namely, *chü-chen* ("assembling gems"). The imperial printery was located mainly in the *Wu-ying tien* ("palace") in the Forbidden City of Peking (*50*), a name that is worth noting as it appears frequently in connection with prints of that time.

Apart from the very pronounced progress and proliferation of movable type printing by official as well as private printeries, the advent of the foreign missionaries

provided a further impetus to printing in this period. The earliest printing by Catholic missionaries had used conventional Chinese block-printing methods. In 1805 an imperial edict listed "no less than 31" such items (*51*). It is also interesting to note that the missions exported Chinese woodcut printers to their colleagues in the Philippines to print Chinese material destined for the Chinese communities there (*52*). Later, wooden movable type methods were used; a font of such movable type is said to be preserved at Macao (*53*). The first Protestant missionary, Robert Morrison, started out (1813) by employing a Chinese wood-block cutter in his first clandestine attempts at producing religious material at Macao, in violation of the emperor's anti-Christian decrees. Fear of discovery soon made him (1814) move his printing activities to Malacca, Britain's easternmost outpost at the time (*54*). In the beginning, printing at Malacca was also done by blocks, for example, the Holy Bible in Chinese, "octavo, in 21 volumes" (*55*). However, printing in Malacca, as well as in similar establishments at Serampore and Singapore, soon developed along more modern European lines, using metallic movable type (*56*). A little later (1832), we read of a lithographic press being used by missionaries in Batavia for printing Chinese, and subsequently, legal restrictions having fallen, similar presses were also set up at Macao and Canton (*57*). After the Opium War had opened additional Chinese cities to foreign residence, the foreign missions moved their presses to Hong Kong (now a British crown colony), Ningpo, and Shanghai. At Shanghai it was in particular the American Presbyterian Mission Press that gained prominence (*58*). It was in these foreign missionary presses that the Chinese became familiar with modern European methods of printing.

In 1897 four former employees of the American Presbyterian Mission Press set up their own printing establishment, the Commercial Press of Shanghai, which grew into China's largest printing and publishing enterprise (*59*). One of the Commercial Press employees, in turn, founded the second largest printing and publishing firm, the Chung Hwa Book Company (1912) (*60*).

The subsequent development has been one of continued and irreversible progress in line with European and American technology. Wood-block printing has become purely a form of the graphic arts. State printing works on the mainland as well as commercial and state printing establishments on Taiwan employ up-to-date equipment with perfect mastery of modern technology, as evidenced by their many fine products of books and prints of all forms.

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ERNST WOLFF

JAPANESE PRINTING*

The earliest extant examples of textual printing in Japan represent a remarkable eighth-century enterprise as well as the oldest authenticated printed texts in the world (*1*). The texts are part of the *Hyakmantō darani*, or "One Million Pagodas and *Dharani*," consisting of miniature pagodas, each containing one printed Buddhist charm or prayer called *dharani* in Sanskrit. On a scale rivaling that of modern best sellers, the million charms were printed on thick paper strips (*2*), which were rolled up and inserted into the hollow centers of the wooden pagodas. This project was undertaken between 764 A.D. and 770 A.D. by order of Empress Shōtoku, after the successful suppression of an insurrection against her Buddhist-oriented court. In 770 the work was completed, and the 1 million pagodas were equally divided and distributed among the 10 leading Buddhist temples in Japan.

How this enormous number of copies were produced so early in the evolution of East Asian printing has been a source of controversy among historians and bibliographic scholars. Two theories have been widely disseminated, one holding that the texts were printed using wood blocks, the other contending they were made from bronze or copper plates. Current research suggests the superiority of the metal plate theory. Wood-block printing, of which there are examples in Nara-period (645–794) textile design, would not have been sufficiently durable to produce so many copies. More enduring metal plates were necessary, and these were made from clay molds, which were formed from engraved blocks of cherry wood. While the argument has been raised that metal casting in the eighth century was too primitive to have accomplished such fine printing, Nara-period Buddhist bronze sculpture and the votive bells of the even earlier Yayoi period (ca. 300 B.C.–300 A.D.) give con-

* The Notes and Bibliography for this section begin on page 94.

vincing evidence that Japanese craftsmen already possessed the technical skill to mold metal printing plates.

An ironic aspect of this first product of Japanese printing is that the texts of the prayers of the *Hyakumantō darani* were not meant to be read. The four texts which were used were taken from the sutra *Muki Jōkō-kyō* and were written in a strange (and now unreadable) hybrid writing system in which Chinese characters were utilized phonetically to represent the original Sanskrit incantation. The production of prayers in astronomical numbers was an act in itself worthy of great religious merit, as well as a religious exercise similar to turning a Tibetan prayer wheel, or reproducing the images of Buddha.

The printing of the texts for the *Hyakumantō darani* of 770 is a monumental but strangely isolated development in the history of Japanese printing. There is no mention of printing in historical records until the latter half of the 10th century and no extant example of dated printed text until the 1080s. While literary culture flourished during the Nara (645–794) and Heian (794–1185) periods, it was carried out in the preferred manuscript form. Several reasons for the neglect of printing and the emphasis on handwriting in Japan during this period have been suggested. First, there was little practical need for printing numerous copies of a work, since only a small circle of people were literate—the courtiers and the clergy. Second, handwriting was highly valued by the Japanese, with the art of calligraphy emphasized and even exalted. Handwritten notes with accompanying poems were a major form of communication in the court, and the development of an elegant style of writing was considered a *sine qua non* for the well-bred person. Styles of calligraphy which were particularly prized in Japan were called *sōsho*, or "grass-writing." They were cursive and abbreviated, resembling long vertical lines of scribbling to the untutored eye. (When the Japanese took up printing again, attempts were made to duplicate the effect of cursive handwritten texts in wood-block printing.) The high regard for handwriting in Japan was also influenced by Buddhism. While any sort of reproduction of the images and words of Buddhism was considered a worthy religious deed, the act of hand-copying sutras was viewed as especially meritorious.

Although printing languished for three centuries after the *Hyakumantō darani*, the use of printing did not cease altogether. Using wood blocks, Buddhist priests printed charms and religious images for religious offerings and souvenirs. But it was not until the period of the learned Regent Fujiwara no Michinaga (960–1028) that the printing of texts began in earnest in Japan. Many printed Buddhist works from Sung China (960–1279) were imported, and interest in printing was stimulated. The term *surikyō*, or "rubbed or printed sutras," referring to block-printed sutras became current.

These early Japanese-printed sutras, however, are not noted as examples of fine printing. Because the technology of ink production was not well developed, the imprints are characteristically light and indistinct. Furthermore, these printed sutras were not produced primarily for reading but as religious offerings. Thus the quality of the print was not as important as the number of copies that could be made from each block. Blocks for popular sutra passages were used repeatedly, their surfaces becoming severely worn, so that many of the remaining texts of these printed sutras

are barely legible. The earliest dated copy of such a printed sutra is a single scroll of the *Lotus Sutra* (Japanese: *Hokekyō;* Sanskrit: *Saddharma-pundarika-sutra*) with an inscription date of 1080; the next is the sutra *Jōyuishi-kiron*, dated 1088. Altogether there are some 23 dated printed sutras from the Heian period (796–1184).

One especially important center for publication of these printed sutras was a Nara shrine-temple, which was both a Buddhist temple of the Hossō sect known as Kōfukuji, and a Shinto shrine called Kasuga where the tutelary deity of the Fujiwara family was worshipped. Buddhist works which were printed at this shrine-temple are known as *Kasuga-ban*, or "Kasuga Imprints," and were first produced as contributions to the Kasuga shrine. *Kasuga-ban*, later printed for reading and incantations, were published until the 16th century.

The development of these printed sutras or *surikyō* was accompanied by an analogous production of Buddhist wood-block prints known as *suributsu*, or "printed images of Buddha." Beginning in the latter part of the Heian period, worshippers would commission temple craftsmen to print a certain number of images to be offered to the deity of their temple. These printed images were frequently placed inside the sculptured icon they represented, a practice thought to multiply the power of the offering. The printing of Buddhist images with block prints and stamps became a private form of daily, weekly, and monthly devotion.

Thus, at the end of the Heian period in 1185, when aristocratic dominance in Japanese society declined and the military clans assumed power, the printing of Buddhist material from wood blocks had a strong beginning, and it was continued throughout the medieval period, from the 13th to the end of the 16th century. Printing during this age remained an enterprise of the Buddhist church. There were three main developments in the Buddhist faith which contributed to the growth of printing: the emergence of a popular religion among the lower classes, the revitalization of the traditional sects in Nara, and the flourishing of Zen.

At the beginning of the 13th century, the Jōdo, or Pure Land, sect of Buddhism was brought to the commoners in Japanese society through the evangelical efforts of Priest Hōnen (1133–1212). Important texts of Jōdo such as Honen's *Senjaku hongan nembutsushū*, printed in 1211, and the 1207 imprint of *Ōjōyōshū* [Essentials of Salvation] by Genshin (942–1017) were printed to help traveling monks spread the Jōdo teachings throughout Japan.

The older sects of Buddhism responded to the new challenge from Jōdo with the publication of printed texts reaffirming their views on Buddhism. Works emanating from the various temples of the traditional sects are classified according to the location of the temple, such as *Kōya-ban*, or "Mt. Koya Imprints," and *Eizan-ban*, or "Hieizan Imprints." The texts printed by these temples during the medieval period are of much higher quality than the printed sutras of the late Heian period. The fact that the works were published as texts for reading rather than as temple offerings demanded clear imprints. There were also improvements in the manufacturing of paper and ink (characteristically jet black and glossy) as well as more skilled block-cutting techniques. Sutras from these temple presses were usually pasted together as scrolls or, less frequently, as books of double leaves pasted together along the folded edge. The Kasuga press in Nara, previously cited, was extremely productive

during the medieval period, its most monumental work being the complete text of the *Great Wisdom Sutra* (Japanese: *Daihannyakyō*; Sanskrit: *Mahaprājnāpāramita-sutra*) in 600 rolls, published in the 13th century.

Another important development in medieval Japanese printing was the introduction of Chinese-style printing. Most Japanese printed texts had been replications of handwriting styles in wood blocks. But around the beginning of the 13th century (ca. 1211), the clear square-style of printing Chinese characters, known as *kaisho*, was begun in Japan. After 12 years of study in China, Priest Shunjō (1167–1228) returned from that country with the 73-volume Northern Sung Edition of the *Ritsu-bu* (*Vinaya pitaka* section of the Buddhist cannon setting forth the rule of discipline for nuns and priests). Priest Shunjō had the work reprinted in Japan so accurately that it is almost impossible to distinguish between the Chinese original and the Japanese reproduction. Shunjō's accomplishment, along with the continued importation of books from Sung China, had a great impact on Japanese printing thereafter.

The Zen Buddhist sects, introduced to Japan around the beginning of the 13th century, allied themselves with the newly emergent military class, which they served as educators. Zen priests took great interest in printing and cultural activities in general. The Zen temple presses, most active in the 14th century, were in fact the first to print secular works in Japan. Zen priests, propagating a view more worldly than others, published not only religious tracts but Confucian classics, Chinese dictionaries, and works of Chinese literature. Five Zen temple presses in both Kamakura and Kyoto produced several hundred titles during the medieval period. Works from these presses, known as *Gozamban*, or "Five Zen Monasteries Imprints," utilized the Chinese printing style, the work often being performed by naturalized Chinese printers. A few *Gozamban* were published with wood-block illustrations.

The printing of pictures from wood engravings had advanced to a considerable stage of accomplishment by the beginning of the 14th century. Besides the early use of printed pictures as souvenirs and offerings, large block prints of Buddhist icons, some several feet in dimensions, were used as objects of worship. Folding prayer books known as *ori-hon* often contained illustrations. But the greatest achievement of wood engraving during the medieval period was the printing of the *Yūzū nembutsu engi* [A History of the Yūzū nembutsu Sect] in 1414. This work is an early example of a printed *emakimono*, or "picture scroll," which had flourished originally in manuscript form with hand-painted illustration, beginning in the Kamakura period (1185–1335). The two scrolls of this work, which tells the history of the Yūzū nembutsu sect, are illustrated by hand-colored wood-block prints, interrupted at intervals by text printed in an elegant calligraphic style.

The printing of wood-block pictures in books, scrolls, and separate sheets declined, as did printing in general, soon after the production of *Yūzū nembutsu engi*. Civil war engulfed most of Japan throughout the 15th and 16th centuries, and many temple presses and libraries were destroyed, resulting in the loss of vast numbers of printed works. However, printing activities did not cease entirely, since printing presses were located in all parts of Japan, except on the island of Shikoku. With

the end of the civil war, and the establishment of the peaceful Tokugawa reign (1600–1867), printing and book publication flourished to a degree hitherto unknown.

Throughout the ancient and medieval periods, the Buddhist church dominated printing, and with the exception of some works of Chinese literature, only religious texts were printed. During the Tokugawa period, printing continued in Buddhist temples, but governmental and commercial presses became active, publishing primarily secular works of Japanese origin. As the literacy rate among townspeople rose, commercial presses catering to popular tastes became preeminent in the printing field.

Besides these social conditions favoring the development of printing during the Tokugawa age, in the 1590s a technical innovation was introduced to Japanese printing: movable type. While printing from movable type had been known in China since the 11th century, and had been adapted and refined by the Koreans in the 13th century, it was not used in Japan until this time. The invention was brought to Japan almost simultaneously by two different groups: Jesuit missionaries, and Japanese soldiers returning from Korea.

In 1590 Alessandro Valignano brought to the island of Kyushu in southern Japan, a font of European type to aid in his efforts as a Jesuit missionary. For a period of about 20 years, the Jesuit press published several works, of which some 30 titles remain. In the second decade of the 17th century, the Japanese government began to restrict Christian and other foreign influences, and in 1614 the presses were moved to Macao. The Jesuit missionary presses published works in Latin and Japanese, using both wooden and metal type. The work in Japanese-language texts was extraordinary, since it first used romanized Japanese, later a combination of roman and Japanese syllabary letters, and finally cursive and semicursive Chinese and Japanese characters. The historically interesting but isolated activities of the Jesuit missionary press in Japan, however, did not have significant impact on Japanese printing.

Of greater interest, and greater influence on the history of Japanese printing was the font of copper movable type captured by Toyotomi Hideyoshi (1536–1598) during the Korean expedition and presented to Emperor Goyōzei (1571–1671) in 1592. Much impressed by this invention, the emperor immediately had the *Classic of Filial Piety* (Japanese: *Kōkyo;* Chinese: *Hsiao Ching*) printed using the Korean type. He also sponsored several other presses which published Japanese and Chinese classics as well as Buddhist texts. Such works from imperial presses are known as *Chokuhan*, or "Imperial Editions." One of the most noteworthy *Chokuhan* is *Nihon Shoki*, the eighth-century *Chronicle of Japan*, printed in 1599. This work not only illustrates the elegant Chinese–Korean-style movable type, but also represents the first non-Buddhist text of Japanese origin to be printed in Japan.

Stimulated by the activities of the imperial presses, temple and private presses, with fonts of wooden movable type, arose around the beginning of the 17th century. Some of this work was initially encouraged by the founder of the Tokugawa government, Ieyasu (1542–1616). Ieyasu, who felt education was a key to peace-

ful government, collected manuscripts and set up Priest Genkitsu (dates unknown) with several fonts of type and a college in Fushimi, where Buddhist and Chinese works were published. Ieyasu was also the patron of the artist and calligrapher Hon'ami Kōetsu (1558–1637), who joined forces with a merchant, Suminokura Soan, to establish a village devoted to printing at Saga near Kyoto.

The Saga press, one of the earliest private presses in Japan, produced the most admired works printed from movable type of this period. Books from this press, known both as *Saga-bon*, or "Saga Books," and *Kōetsu-bon*, or "Koetsu Books," are distinguished by their fine bindings, delicately hued and embossed paper, woodcut illustrations, and innovative and elegant use of wooden movable types. The type in *Saga-bon* closely resembles hand brush calligraphy. Some types were actually ligatures in which more than one Chinese character, or a character and a *hiragana* symbol (one of the two Japanese phonetic scripts), are united to produce the effect of cursive writing. The most famous work produced by the Saga press is the 10th-century tale *Ise monogatari* [Tales of Ise], printed in 1608. All works published from movable type from 1592 to 1643 are known collectively as *kokatsuji-ban*, or "Old Movable Type Imprints."

Printing from movable type was the main form of printing in the first few decades of the Tokugawa period, but by the mid-17th century the practice had died out. However, a small-scale revival of the use of wooden movable type occurred toward the end of the Tokugawa period, when in 1799 the Japanese feudal government used movable type to print Chinese classics as textbooks in its schools. Various *han* or feudal domains and private schools also set up fonts of wooden type to produce books used in their schools. Nevertheless, this later development does not fall under the rubric of *kokatsuji-ban*, and is clearly exceptional in the printing of the Tokugawa age.

The mainstream of Japanese printing from the middle of the 17th century to the beginning of the Meiji period (1868–1912) was wood-block printing by commercial presses. Wood-block printing was revived in 1615, carried out on a commercial basis from the 1620s, and completely dominated printing in Japan by 1650. This return to the older form of printing after experimenting with movable type may seem retrogressive from the Western point of view, but profit-minded commercial publishers were responding to the demands of the reading public. Technical difficulties in printing the Japanese written language and Japanese aesthetic preferences favored block printing over movable type.

A major problem of movable type printing of Japanese, which utilizes both Chinese characters and two syllabaries, is that thousands of types are needed. Even the largest presses could not anticipate all the characters which might be needed in printing a text, so new types were continually being carved. A related problem was that, for the newly literate and nonscholarly audience, Chinese characters (which can have several readings in Japanese depending on context) had to be glossed with small phonetic, or *kana*, symbols. Both of these problems were better solved by block printing in which blocks were carved to the specifications of each page of text.

Two aesthetic considerations also influenced the return to block printing. Illustrations became popular and, indeed, a necessity for the commercial success of a trade book. Block printing enabled the engraver to cut text and illustrations at the same time on the same block. The cursive styles of calligraphy, *sōsho*, so admired by the Japanese could also be easily reproduced on wood blocks, but only ineffectively with movable type.

The dramatic rise of literacy and publication activities, during the first century of Tokugawa rule, is demonstrated by the following facts. In the 1640s there were already over 100 publishers in Kyoto. A mass audience had developed by the 1660s, as illustrated by the publication in 1666 of an illustrated children's encyclopedia, *Kimmō zui*, which went into several editions. There was extensive demand for juvenile literature by the 1680s. It is estimated that by 1710 there were over 600 publishers and booksellers in Japan, primarily in Edo (Tokyo) and Osaka.

The kinds of works most in demand during the Tokugawa period were illustrated works of fiction. In the first part of the 17th century, the most popular books printed from wood blocks were *kanazōshi*, or *kana* storybooks. These were written mainly in easy-to-read *hiragana* syllabary and contained numerous illustrations. Their contents were taken primarily from the *otogizōshi* folktales of the medieval period. The format of the *kanazōshi* is the prototype for popular trade books of the Tokugawa period.

By the 1680s, the *kanazōshi* gave way to a similar but more sophisticated genre known as *ukiyozōshi*, or "stories of the floating world." In 1682 the novelist Ihara Saikaku (1642–1693) published his first novel, *Kōshoku ichidai otoko* [The Life of an Amorous Man], along with his own illustrations. This first *ukiyozōshi* depicted the contemporary Japanese scene of the *ukiyo*, or "floating world," of the pleasure quarters. Two years later the novel was reissued with illustrations by the artist Hishikawa Moronobu (1618–1694). The subject matter of the *ukiyo*, and this pattern of collaboration between illustrators and novelists, became the norms for Tokugawa fiction. Such collaboration was not always harmonious, in some works the text dominating, and in others, the illustrations. In later Tokugawa genres, such as *kibyōshi* and *kusazōshi*, text was relegated to an element of the illustration, somewhat like a comic book.

While illustrations appeared in books before the time of Moronobu, he developed Japanese illustration into a fine art. His style of drawing was consciously adapted to the necessities of reproduction by wood blocks and evolved into Japan's best-known art form in the West, *ukiyoe*, or "pictures of the floating world." *Ukiyoe* artists after Moronobu continued to produce a large part of their work as illustrators well into the 19th century. Moronobu also created books which eliminated text altogether, in a genre known as *ehon*, or "picture book," and produced the first single-sheet art prints, called *ichimaie*.

Moronobu hand-colored some of his prints, and also varied the tone of the black printing ink, *sumi*, by diluting it, or by partially wiping the inked block. Full color printing of pictures did not occur, however, until the middle of the 18th century. Some experimentation in color printing began in the 17th century, per-

haps as early as the 1620s. A red lead pigment, *tan*, was first used, and such prints are known as *tan-e*, "red pictures," or *beni-e*, "pink pictures." Blue and green inks were later introduced. In 1765 the *ukiyoe* artist Suzuki Harunobu (1725–1770) developed the technique of full polychromatic printing known as *nishiki-e*. After Harunobu's breakthrough, the technique was used for color illustrations in novels and other popular works, in scientific textbooks, and for single-sheet prints, advertisements, and New Year's cards.

The next important developments in the reproduction of pictures, and in printing in general, were inspired by Western techniques learned in Nagasaki from the Dutch, the only Western foreigners permitted in Japan. The artist and scholar Shiba Kōkan (1738–1818), a disciple of Harunobu, mastered the art of recessed engraving from the Dutch. Many of the maps and illustrations, which appeared in his travel books and scientific texts, were made from engraved copper plates. The first person to use European-style movable type printing in Japan was Motoki Shōzō (1824–1892). An interpreter for the Dutch in Nagasaki, he obtained a European printing machine with type from the Dutch in 1848. With this equipment, along with type he himself created, Motoki published in 1852–53 *Ranwa tsūben*, a book of Dutch conversation with Japanese translations. This small book of 50 sheets is considered the beginning of modern printing in Japan.

When Japan fully opened up to the West in the Meiji period (1868–1912), the Japanese quickly learned and adapted Western printing techniques to the needs of their writing system. As a result, wood-block printing was rapidly eclipsed. Motoki continued to be a leader in the printing field. Having established a printing institute in Nagasaki in 1869, he became a manufacturer of type, some of which was used in the production of Japan's earliest vernacular newspaper, *Kankyo Yokohama shimbun*, first issued in December 1870. Other newspapers sprang up throughout Japan during the next two decades.

The Japanese kept up with developments in Western printing, lithography being introduced in 1887, and offset printing in 1914. Modern movable type printing has become the norm in 20th-century Japanese printing, and in the postwar period, photocomposition techniques have been utilized as well. With these basic techniques of modern printing, Japan has become one of the major publishing centers in the world. Since the 1930s, the Japanese have printed over 20,000 titles each year, except during and immediately after World War II; and from 1965, some 25,000 titles have been published annually. While the modern techniques of mass production have been skillfully incorporated into the Japanese printing industry, standards have been high, and a traditional sensitivity to the aesthetics of printing is still strongly in evidence.

NOTES

1. Korean scholars have claimed that they have found a Korean printed text which antedates this Japanese text. In 1966 a printed *dharani*, tentatively dated 751 A.D., was found in the Pulguk-sa temple in Kyongju, Korea. Final confirmation of the date, however, is still awaiting more concrete evidence.

2. Paper became available in Japan around 755, or about 650 years after its invention in China in 105 A.D.

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ROBERT G. SEWELL

KOREAN PRINTING*

Korea, a nation until recent years little known to the Western world, has nevertheless known times of great intellectual, cultural, and scientific achievement, in some areas predating or surpassing both East and West in excellence and accomplishment. One such area of excellence is printing. Printing was carried out on a vast national scale in Korea as early as the 11th century, and Koreans are credited with having developed the first practical method of printing with movable type—perhaps as early as 200 years before Gutenberg printed his now famous Bible (*1*).

* The Notes and Bibliography for this section begin on page 104.

Factors in the Development of Korean Printing

The development of printing in Korea progressed as the result of four major influences: Chinese cultural dominance, the role of the Chinese language in Korea, the spread of Buddhism, and early government interest in and sponsorship of printing. Printing was an art the Koreans almost certainly learned from China, and its development doubtless progressed as it did in that country—from seals and rubbings to wood-block prints (xylographs), to more advanced techniques of printing from movable type made of wood, clay, or metal.

CHINESE CULTURE

Korean legend claims that Chinese culture was first brought to Korea in 1122 B.C., when a Chinese sage named Chi-tzu (*2*) settled in Korea with 500 followers (*3*). However, records of migrations of Chinese to Korea due to political upheavals in China provide us with more reliable dates. In the turbulent years after the downfall of the Ch'in dynasty (206 B.C.) and the beginning of the Han dynasty (202 B.C.) in China, many rebellious local officials were defeated and driven into exile. One such exile was Wei Man (*4*), formerly in the service of the state of Yen, who was forced to flee into northern Korea around 194 B.C. (*5*). Some accounts claim that he brought as many as 1,000 followers with him (*6*). Later, in 108 B.C., four Chinese provinces—Lo-lang, Chen-fan, Lin-t'un, and Hsüan-t'u (*7*)—were established in northwestern Korea, one of them (Lo-lang) lasting until A.D. 313 (*8*). Through such early and sustained contacts with the Chinese, Koreans developed a high respect and admiration for Chinese culture. As China gained prestige as the seat of learning, more and more Korean scholars traveled there to study and eagerly brought back new ideas to their countrymen.

By the time of the T'ongil Silla, or "United Silla" Period, in Korea (A.D. 668–935) when we first find evidence of printing in East Asia, Chinese culture was already dominant in the Korean peninsula. Given this strong permeation of Chinese influence in Silla society, it is not surprising that examples of printing from this period have been found in Korea. It is interesting that what may well be the oldest example of printing in existence dates from this period and was printed in Korea. A copy of the *Vimala Mirbhasa* sutra (*9*) (a *dhāranī*, or Buddhist invocation) was discovered in 1966 in the Sŏkka T'ap (Sakyamuni Stupa) of Pulguk-sa Temple in Kyongju and has been tentatively dated sometime between 704 and 751. (See Figure 1.) This dating places it earlier than what were previously considered the oldest texts—the *Hyakumantō dhāranī* or *Muku jōkō* sutra printed at the order of the Empress Shōtoku of Japan sometime between 764 and 770, and the *Ta tsang ching* or *Tripitaka* of Tun-huang, China, which dates from 868 (*10*). The discovery of the *Vimala Mirbhasa* sutra does not provide us with an exact date when the art of printing was introduced from China to Korea, but it does constitute one more indication that printing was indeed introduced at an early period as part of the general flow of Chinese culture to the Korean peninsula (*11*).

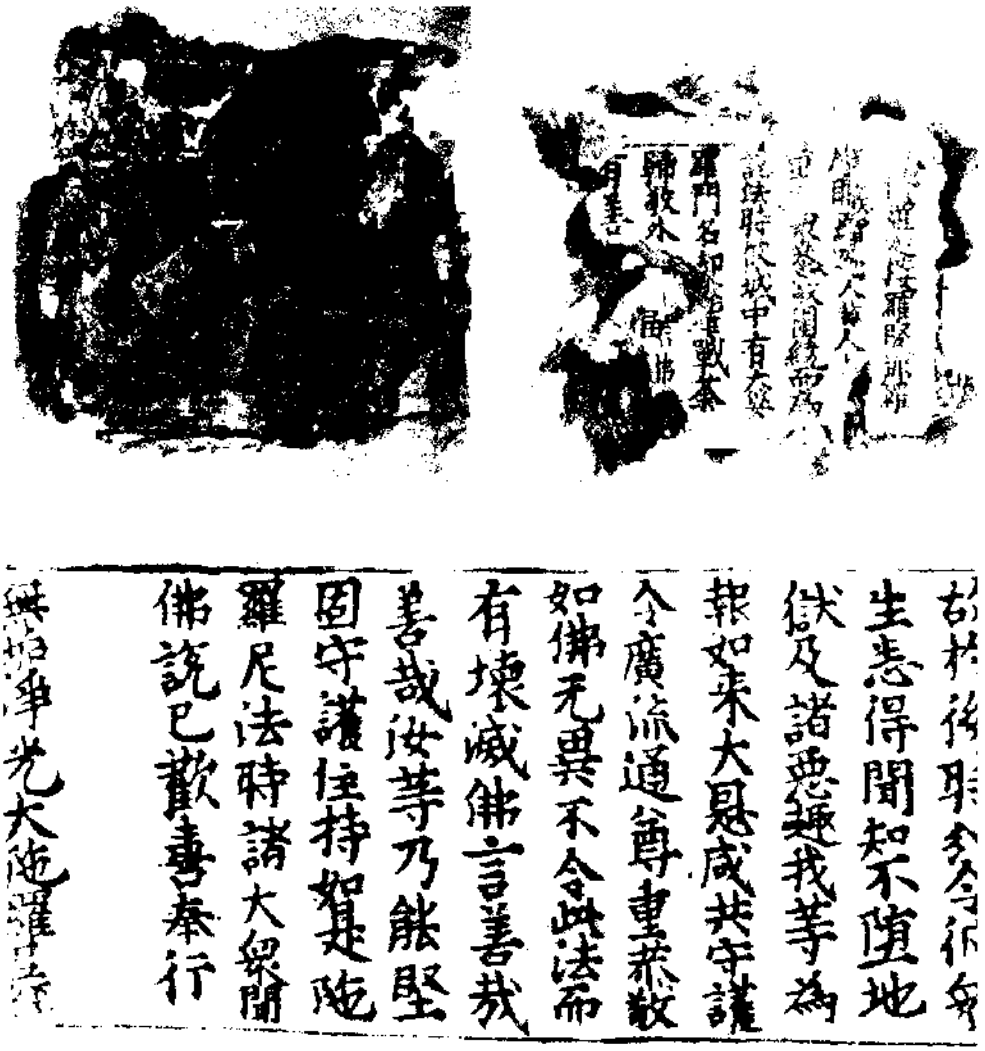

FIGURE 1. *Portions of the* Vimala Mirbhasa *sutra, printed ca. 704–751 A.D., discovered in the Pulguk-sa Temple. Courtesy of the Consulate General of the Republic of Korea, Chicago, Illinois.*

THE CHINESE LANGUAGE

The second great influence on printing in Korea was the Chinese language. The Korean language had no unique writing system until the 15th century, so for centuries before that all scholarship was carried on through the medium of the Chinese script. Though early attempts were made to adapt the Chinese writing system to more closely fit the needs of Korean—a language linguistically unrelated to Chinese—such attempts were short-lived. A situation developed whereby Koreans wrote in the Chinese script and idiom but pronounced what they wrote in a fashion more closely related to their own language. Thus, for all practical purposes no language barrier existed in literary terms between China and Korea. Even if we speculate on the basis of the large numbers of Koreans who studied in China that printing techniques were most probably learned through a teacher-student or master-appren-

tice relationship, the use of a common script in China and Korea surely made it possible for Koreans to apply printing techniques learned from the Chinese with a minimum of adaptation to the Korean idiom.

BUDDHISM

The coming of Buddhism to Korea in A.D. 372 marked a further strengthening of the impact of Chinese writing in Korea and placed a greater importance on printing. Just as Latin was the lingua franca of Christianity in Europe, Chinese was the language of Buddhism in East Asia. Religion played an important part in the everyday lives of the people, and the printed word became an important part of that religion. In Mahayana Buddhism, the school of Buddhism most popular in East Asia, the printing or copying of portions of the scriptures carries with it a promise of merit for the individual. The impact of this doctrine on the history of printing is evident in that, of the earliest printed texts discovered in East Asia—the *dhāranī* sutra discovered in Kyongju, the earliest texts from Tun-huang in China, the printed charms of the Empress Shōtoku in Japan, and the great *Tripitaka Koreana* in Korea—all were conceived as petitions to Buddha for merit and protection.

GOVERNMENTAL INFLUENCE

The fourth influence on the development of printing in Korea was the role of government patronage. Interest on the part of the government was already evident in the Koryo dynasty (918–1392). The great Buddhist *Tripitaka* (see below), begun sometime around 1011, was compiled and printed at the personal command of King Hŏnjong (1010–1031). In 1056, when a provincial official complained about the unreliability of manuscript copies of certain books needed in the local schools, the government ordered various departments to print one copy of each book to be sent to him (*12*). In 1101, the Koryo government established a Printing Office, the Sŏjŏk P'o, in the National College [Kukchagam] and moved the wood blocks of the royal collection to this office. Five years later, in 1106, a set of the *Tripitaka* was donated to the Khitan Liao dynasty in North China. These examples suggest that not only was considerable printing activity already taking place at this time, but also that the influence of this activity reached even into the sphere of foreign policy (*13*).

Government interest continued under the Yi dynasty (1392–1910) which followed. In 1392, the last year of the Koryo reign, King Kongyang (1389–1392) established the Sŏjŏgwŏn, or Publications Office, probably under the influence of powerful figures of the soon-to-be Yi dynasty (*14*). The importance of this office was that it created a focal point for the printing industry, previously scattered far and wide under the separate control of various temples and government officials (*15*). In 1403, King T'aejong, third king of the Yi dynasty, added the Chujaso, or Office of Typecasting, to the Publications Office, and within a few months the first of many fonts of bronze type was cast there. This early and consistent interest of the government in printing activities was an important factor in influencing their nature and development.

Stages of Development

The development of printing in Korea can be easily divided into three periods—periods which, interestingly enough, parallel historical periods as well. In each of the three periods a distinctive method of printing predominated, though only in the early years of the first period was there but a single method in use. The three periods are the period of wood-block printing, or xylography (roughly corresponding to the Koryo dynasty); the period of movable type printing (roughly corresponding to the Yi dynasty); and the period of modern typography and typesetting (roughly corresponding to the post-Yi dynasty period of the 20th century).

The Koryo dynasty was a Buddhist dynasty, and the bulk of the materials printed in that period were Buddhist texts. Even after the development of movable type printing in the latter part of this period, xylography was still preferred, one reason being that illustrations and images could easily be carved on the same block as a canonical text—a factor apparently appreciated by the early printers.

The Yi dynasty, on the other hand, was a Confucian dynasty, fiercely anti-Buddhist. The subject matter of the books printed under its auspices tended to emphasize history, morals, and the classical literature of China—a sharp departure from the bulk of the printing done in the previous dynasty. Since this was the period when movable type came into predominance, Buddhist books in movable type from Korea are almost nonexistent (*16*). The Confucianist leanings of the government added to their monopoly of the book printing trade, for the printing and sale of books in a Confucian society were frowned upon (*17*). Since the educated elite for whom books were printed in Korea was a small group, editions were small, usually no more than 100 copies (*18*). Movable type printing was well suited to the Korean preference for the printing of a variety of texts in small editions; while in contrast, Japan and China preferred xylographic editions which were more suited to the production of large numbers of copies.

WOOD-BLOCK PRINTING AND THE *TRIPITAKA KOREANA*

Wood-block printing activity in the Koryo dynasty dates from at least as early as the eighth century, as evidenced by the *Vimala Mirbhasa* sutra discussed above. In the 10th and 11th centuries, printing from wood blocks received a great stimulus from the establishment of national colleges for higher education and the rise of private schools, both of which created a greater demand for books (*19*). Another stimulus, as previously mentioned, was religious. It is not surprising, therefore, that wood-block printing is perhaps best exemplified in the minds of the Korean people by the great *Tripitaka Koreana*, known in Korean as the *Koryŏ taejanggyŏng* (*20*). The printing of the *Tripitaka Koreana*, a collection of Buddhist scriptures, was first begun in Korea during the reign of King Hyŏnjong (1010–1031) of the Koryo dynasty. Authorities differ in their assessment of when work was actually commenced on the carving of the wood blocks but generally agree that it was probably begun sometime between 1011 and 1014 (*21*). The project was conceived as an act of prayer to Buddha for the expulsion of invaders from the Khitan Liao dynasty

in North China and as a demonstration of the cultural achievements of Koryo as an independent nation (*22*). Though Korean historical records attribute the withdrawal of the invaders in 1019 to the divine merit of this *Tripitaka* publication project, authorities disagree as to the date of the project's completion. Some imply that the project was finished by the time the invaders withdrew (i.e., 1019), while others cite evidence that final work was not completed until as late as 1087 (*23*). An important supplement to the *Tripitaka* which included many commentaries by Chinese monks was compiled during the last quarter of the 11th century under the direction of Monk Ŭich'ŏn, who devoted his entire life to the task. This and all the original wood blocks were destroyed by the Mongols in 1232 (*24*), but fortunately copies of some works from both the original *Tripitaka* and from Ŭich'ŏn's supplement survive in Japan.

The second printing of the *Tripitaka Koreana* was undertaken in 1263 by King Kojong, again as a petition to Buddha for the expulsion of foreign invaders—only this time the invaders were the still-present Mongols who 4 years earlier had destroyed the first set. The second set of plates was completed in 1251, 16 years later, and is in existence to this day (*25*). It consists of 81,258 wooden blocks (hence the common Korean name *P'alman Taejanggyŏng,* or *"Eighty Thousand" Tripitaka*) engraved on both sides with Chinese characters, making a total of 162,516 plates. When printed, they comprise the complete *Tripitaka,* a collection consisting of 1,511 separate works in 6,805 volumes. These wooden blocks are kept today, as they have been since 1398, in Haein-sa Temple in South Kyongsang Province. (See Figure 2.) Their remarkable preservation is considered by the monks who guard them to be due to a miracle of Buddha. The existence of the plates is not the only "miracle" of this *Tripitaka,* however. Its textual accuracy and artistic beauty are considered remarkable; and it is regarded by many as not only the oldest, but also the best of all the translations of the Buddhist *Tripitaka* existing today.

MOVABLE TYPE PRINTING

Wood-block printing, though developed to such a high degree, is not the area in which Koreans have made the greatest contribution to the history of printing. It is now fairly well documented that it was in Korea that a practical method of movable type printing was first developed, using bronze type cast from a mold. Movable type printing was invented by the Chinese (*26*), and as was the case with wood-block printing, movable types of wood and clay were no doubt first known in Korea as a result of contacts with China. According to early Korean records, movable type, probably made of wood, was already known in Korea in the first part of the 13th century (*27*)—as early as, or perhaps even earlier than in China (*28*). The earliest known book believed to have been printed in Korea from movable type is mentioned in the *Tongguk Yi sangguk chip* [Collected Works of the Grand Counselor Yi], by Yi Kyu-bo. He cites there a book called the *Sangjŏng yemun* [A Detailed and Authentic Code of Etiquette], 28 copies of which were printed from cast type on Kanghwa Island, probably around 1234 (*29*). An edition of a Zen Buddhist book printed shortly thereafter, in 1239 (*30*), claims in its colophon to have been

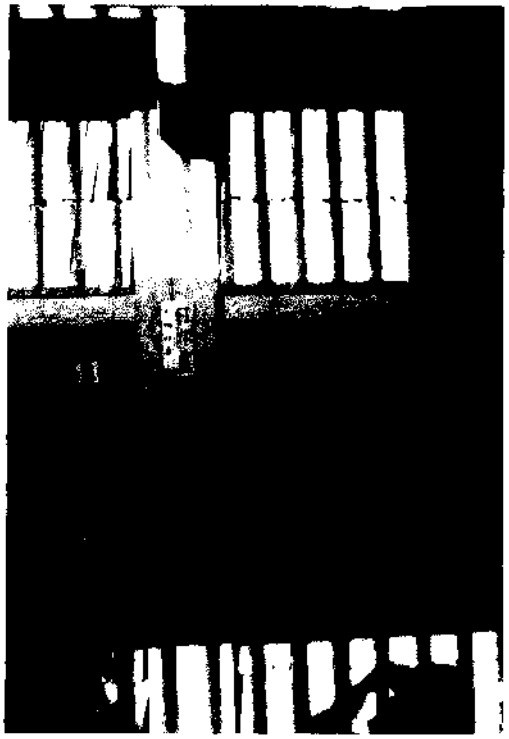

FIGURE 2. *Some of the approximately 80,000 wooden printing blocks of the* Tripitaka Koreana, *preserved in Haein-sa Temple. From a photograph by the author.*

recarved in wooden blocks from a earlier cast type edition (*31*). However, the earliest *verified* example of movable type printing in existence today is an incomplete copy of the second volume of a Buddhist work, *Pulcho chikchi simch'e yojŏl,* printed with movable metal type in 1377. This book, owned by the Bibliothèque Nationale in Paris, was brought to the attention of scholars only in 1972 when it was exhibited in Paris at a special exhibition organized in commemoration of International Book Year (*32*).

The genius of Korean movable type printing lay in the development of the type mold. This invention paved the way for mass production of durable, well-formed type of high quality. As far as is known, this was a distinctly Korean invention (*33*), which the Koreans went on to develop to such a degree of excellence that their printing eventually excelled even the Chinese printing of that period (*34*).

The various types used in early printing in Korea are generally known by name—in the case of metal types, usually by the name of the year (of the Chinese year-cycle) in which they were cast. Examples are *Kyemi-ja* (also known as *Kemi-ja),* "type of the year *Kyemi*"; *Kabin-ja,* "type of the year *Kabin,*" etc. The former is especially well known as the first font cast after the founding of the Yi dynasty's Office of Typecasting in 1403 (*35*). Another well-known type, first cast in 1677 or

1682 (authorities differ) was named *Han'gu-ja* after Han Ku, famed calligrapher of his day, who made the matrix for the original type. Typefaces were usually modeled after the style of a well-known calligrapher or a particularly beautiful block print—the model being either of Chinese or Korean origin.

Korean movable type printing suffered a serious setback in 1592 when Korea was invaded by Hideyoshi Toyotomi, a Japanese warlord who was soon afterward to put the whole of Japan as well as Korea under his control (*36*). War and occupation lasted until 1598 (*37*), during which time a large number of type fonts and Korean technicians were taken to Japan. Following the Hideyoshi invasion, metal was at a premium in Korea, and so for about 70 years all types were made of wood.

The influence of Korean movable type printing on the printing of China and Japan cannot be overlooked. While the Hideyoshi invasion marks the definite point when this technique was introduced to Japan, the date of its introduction to China is not so easily determined, although it is known to have been much earlier. By the end of the 15th century we know of at least two Chinese printers printing with bronze type, one in Wusih and one in Ch'angchou (*38*). Movable type printing was not uncommon throughout the Ming dynasty (1368–1644); however, then and through the Ch'ing dynasty (1644–1911) wood-block printing was considered by the Chinese to be the "normal" method. Notable exceptions seem to have been modeled on the Korean pattern. The *T'ai p'ing yü lan* encyclopedia was printed from movable type in 1574. Another encyclopedia, the *Ku chin t'u shu chi ch'eng*, was printed with copper type sometime around 1722, 9 years after a number of Korean printed books were presented to the Emperor K'ang-hsi at his request. In the last years of the 18th century, the famous *Ssu k'u ch'üan shu* collection of Chinese literature was published with movable type at the suggestion of a court official of Korean descent who considered it to be a much cheaper method than that of wood-block printing (*39*).

Japan was much slower than China to adopt movable type printing. It was more than three centuries after the first record of such printing in Korea that the first book in movable type was printed in Japan—and then by European Jesuits, based on what evidently had been an independent discovery of this method of printing in Europe. However, the first movable type book in Chinese characters—which was also the first actually printed by the Japanese—appeared in 1595, only 5 years after the Jesuit printing. This and other early Japanese movable type editions appear to have been influenced far more greatly by Korean typography than by the work of the Jesuits. Since type fonts and artisans had only recently been brought from occupied Korea to Japan, it is not surprising that Japanese printed books of this period resemble Korean books even down to the smallest details of typographical style (*40*).

THE MODERN PERIOD

The printing industry of the Yi dynasty flourished again for a while after recovering from the disastrous Hideyoshi invasion, but began to decline in the latter years of the dynasty. Political instability and outside pressures all took their toll. Toward the late 19th century, Korea began to fall under increasing influence from Japan and

the West, and in particular from 1876 on there was a great influx of ideas from Western civilization (*41*). Ideas about printing began to change as a result of this influence. In 1883 the Korean government began publishing an official bulletin, the *Hansŏng Sunbo*. At first published every 10 days, it later became a weekly, and continued until 1888. This and the *Hansŏng Sinbo* [Seoul News], founded in 1885, were printed with lead type imported from Japan. Western printing methods were introduced into the country for the first time in 1885 by Dr. Henry G. Appenzeller, an American missionary who printed the Korean-language Bible at the Paejae Haktang, a mission school in Seoul. There he cast both Korean and English type for religious publications and installed a motor-operated automatic paper cutter made in the United States. Eight years later, in 1903, the Korean government established a mint in Seoul which later became the Government Printing Bureau. By 1909 there were more than 200 printers working there. In 1915 Yi Tae-wi, a Korean patriot living in the United States, began printing a publication in which for the first time the Korean alphabet was set up in Linotype (*42*). Printed in California, the *Sin Han Minbo* was a patriotic periodical intended for Koreans living in the United States.

The next significant development in Korean printing had to wait until after World War II and the invention of the Korean typewriter. Still in the perfecting stage in recent years, the typewriter has come into vogue in the Republic of Korea, especially in the last decade, as the government has increasingly advocated the use of the Korean alphabet to the exclusion of Chinese characters. The letters of the Korean alphabet are customarily written in slightly variant form depending on their position in a syllable (initial, medial, or final). While some typewriters have maintained these traditional calligraphic distinctions, making for a fairly complex keyboard and the necessity for much use of the shift key, others have sacrificed beauty for speed and experimented with a single form for each letter. Due to these different concepts of what a typewriter should be and to competition among various manufacturers, it has been difficult to agree on a standard keyboard. However, in recent years, the printing industry in Korea has grown into a large, modern operation much like its counterpart in other parts of the world, and surely the Korean typewriter will also be perfected in the near future.

Significance of Korean Printing

Looking, then, from our modern vantage point, what can we say is the importance of Korean printing? What place does it occupy in the history of printing worldwide, and what influences has it had on the printing of other nations? The immediate influences were, of course, felt most keenly in China and Japan. The printing and export of the *Tripitaka Koreana* and other block-printed, mostly Buddhist, books not only influenced typography in these countries but also contributed to their Buddhist culture. The Korean *Tripitaka*, in particular, is today considered a cultural treasure belonging not to a single nation, but to all of the Buddhist world—its beauty and textual accuracy as valuable as its antiquity.

The influence of Korean movable type printing was equally pervasive. Though

it is doubtful that Korean technology spread as far as Europe, as some have claimed (*43*), Korea's place in the history of printing worldwide must still be considered one of great importance, even though her influence was felt in only a relatively small area of the world. The technology of movable type printing may have been developed independently on two opposite sides of the globe, but it is still significant that the Korean development came first. And even if, at some later date, another nation should discover printed works earlier than the sutra scrolls from Kyongju, Korea will still stand among those nations who were the first to realize the great importance, influence, and beauty of the printed word.

NOTES

1. The earliest extant example of Korean movable type printing now known predates Gutenberg's achievement by approximately 70 years. Secondary sources indicate, however, that movable type printing was being carried on at least 150 years before that.
2. Called *Kija* in Korean. All Chinese words and names in this article are given in Wade–Giles romanization, and Korean words in McCune–Reischauer romanization, with the following exceptions: (*a*) when an author is known to prefer a variant spelling for his name, that preference is respected; (*b*) place names are given in the commonly accepted English forms. Oriental names are cited in the surname-first form common in East Asia.
3. Herbert Allen Giles, *A Chinese Biographical Dictionary*, p. 121; *Taebaekkwa sajŏn/ Korean Encyclopedia*, Vol. 1, p. 878. Cf. also James Scarth Gale, *James Scarth Gale and His History of the Korean People*, especially pp. 95–96.
4. Wi Man or Wiman in Korean.
5. Gale, *James Scarth Gale and His History of the Korean People*, p. 117; cf. also p. 328, footnote 11.
6. Han Woo-keun, *The History of Korea*, pp. 15–16.
7. Nangnang, Chinbon, Imdun, and Hyŏnt'o in Korean.
8. Han Woo-keun, *The History of Korea*, p. 18.
9. Also called the *Raśmivimala-vaviśuddhaprabhā dhāranī*, and in Chinese the *Wu kou ching kuang ta to-lo-ni ching;* cf. L. Carrington Goodrich, "Printing—a New Discovery," p. 39.
10. Thomas F. Carter, *The Invention of Printing in China and Its Spread Westward*, pp. 46–81.
11. One scholar, Sohn Pow-key, based on the evidence of the newly discovered sutra, believes that Koreans might *possibly* have developed methods of wood-block printing even *before* the Chinese; cf. Sohn Pow-key, *Han'guk ŭi ko hwalcha* [Early Korean Typography], p. 31.
12. Sohn Pow-key, *Han'guk ŭi ko hwalcha*, p. 33.
13. Sohn Pow-key, *Han'guk ŭi ko hwalcha*, pp. 13, 34.
14. Melvin P. McGovern, *Specimen Pages of Korean Movable Types*, p. 14; also Sohn, *Han'guk ŭi ko hwalcha*, p. 38.
15. Sohn Pow-key, *Han'guk ŭi ko hwalcha*, p. 18.
16. Carter, *The Invention of Printing in China . . .*, p. 229.
17. Sohn Pow-key, *Han'guk ŭi ko hwalcha*, pp. 39–40.
18. Kim Won-Yong, *Han'guk ko hwalcha kaeyo/Early Movable Type in Korea*, p. 6.
19. Sohn Pow-key, *Han'guk ŭi ko hwalcha*, pp. 32–33.
20. Information on the *Tripitaka*, unless otherwise noted, is based on the article by Paik Nak Choon, "*Tripitaka Koreana*," in *Transactions of the Korea Branch of the Royal Asiatic Society*.
21. Sohn Pow-key, *Han'guk ŭi ko hwalcha*, p. 33, says "about 1014"; Ahn Kai-hyon, "Publication of Buddhist Scriptures in the Koryo Period," pp. 83 and 235, gives a date corresponding to 1019.

22. Ahn, "Publication of Buddhist Scriptures in the Koryo Period," pp. 83 and 235, speculates that a third reason might have been Hyŏnjong's desire to seek the active support of the country's Buddhists, thus further consolidating his political power.
23. Korea (Government-General of Chosen, 1910–1945), *A Short History of Korea*, p. 38; Sohn, *Han'guk ŭi ko hwalcha*, p. 33; Han, *The History of Korea*, p. 143; Ahn, "Publication of Buddhist Scriptures in the Koryo Period," pp. 83 and 235; and Kim, *Han'guk ko inswae kisul sa*, pp. 59–69.
24. Korea (Government-General of Chosen, 1910–1945), *A Short History of Korea*, p. 43.
25. Paik Nak Choon, *"Tripitaka Koreana,"* p. 69.
26. Cf. Carter, *The Invention of Printing in China. . . .*
27. McGovern, *Specimen Pages of Korean Movable Types*, p. 13.
28. One scholar, Sohn Pow-key, has claimed the existence of a book dating from the 1160s printed in Korea from movable type; however, this date is disputed by Goodrich, cf. L. Carrington Goodrich, "Movable Type Printing: Two Notes."
29. McGovern, *Specimen Pages of Korean Movable Types*, pp. 13–14; Sohn, *Han'guk ŭi ko hwalcha*, p. 35.
30. *Nammyŏng ch'ŏn Hwasang song ch'ŭngdoga;* cf. Sohn, *Han'guk ŭi ko hwalcha*, p. 50.
31. Sohn, *Han'guk ŭi ko hwalcha*, p. 35.
32. Ch'ŏn Hye-bong, *Pulcho chikchi simch'e yojŏl.*
33. Carter, *The Invention of Printing in China . . .*, p. 243.
34. McGovern, *Specimen Pages of Korean Movable Types*, p. 3.
35. Lists of fonts, a discussion of their differences, and numerous facsimile pages printed from them are contained in McGovern, *Specimen Pages of Korean Movable Types;* and in Sohn, *Han'guk ŭi ko hwalcha.*
36. Korea (Government-General of Chosen, 1910–1945), *A Short History of Korea*, p. 65.
37. Sohn Pow-key, "Early Korean Printing," p. 101.
38. Carter, *The Invention of Printing in China . . .*, p. 230.
39. Carter, *The Invention of Printing in China . . .*, p. 239; Sohn, *Han'guk ŭi ko hwalcha*, p. 42.
40. Carter, *The Invention of Printing in China . . .*, pp. 231–232 and p. 236, footnote 28; McGovern, *Specimen Pages of Korean Movable Types*, p. 16.
41. Information in this section, unless otherwise noted, is based on *Korea: Its Land, People and Culture of All Ages.*
42. Sohn Pow-key, "Han'guk inswae kisul sa," p. 1055. In this passage, Sohn refers to "linotype" and gives the date as "around 1930." In his *Han'guk ŭi ko hwalcha*, p. 24, he gives the date as 1915 and calls it "intertype."
43. One scholar, Sohn Pow-key, claims that the influence of Korean movable type printing spread across the China–Arabian route to Europe and intimates thereby that European typography was learned from the Orient. The consensus of most scholars, however, seems to be that although the early development of wood-block printing in Europe was quite probably influenced by China, there appears to be no proof of a definite connection between the later development of movable type printing in East Asia and the similar developments in Europe. Cf. Sohn, *Han'guk ŭi ko hwalcha*, p. 31.

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U.S.S.R.

See *Russia—U.S.S.R., Book Printing and Libraries*

COMPUTER-AIDED COMPOSITION

Computer-aided composition, computer-aided typesetting, and computer photocomposition have come to mean the use of the digital computer in the preparation of textual material to be printed. The computer utilized for composition may be either a general purpose digital computer such as those produced by IBM, DEC, and Honeywell or a special purpose computer such as those manufactured by Stromberg Carlson and Cognitronics. Whether a general purpose computer or a special purpose computer is utilized, the goal of a computerized composition system is to produce text with the quality and style of that which would have been handset or mechanically composed by a printer. This requires capabilities that are not easily reproduced using a digital computer.

The reason for applying the computer to the task of composition is that it is believed that economies of time and effort can be achieved.

These economies are achieved by using the computer to perform functions such as:

1. To capture and store data that is keyed via a machine-readable medium for later processing such as editing, storing, and composing.
2. To insert control characters in the data to be printed so that it can drive composing devices such as filmsetters and typesetters.
3. To perform all the necessary calculations to make possible the justifications of lines by varying word and character spaces.
4. To produce the control codes necessary for controlling vertical and horizontal positioning as well as space allocation for headings, text, tables, illustrations, footnotes, etc.

None of these tasks are difficult for a computer to perform once the necessary programs have been written. Writing the programs requires that the tasks be explicitly defined in great detail. This is where the rub lies. Defining typographical rules and parameters for computerized composition is difficult. This results from the fact that typography has been considered more of an art than a science. As a result, the specifications for producing printed products are based as much on the aesthetic

factors associated with typography as they are on the mechanistic factors. This produces difficulties in establishing standards and limiting alternatives that are important when automating any function.

Historical Summary

The Linecaster developed by Ottmar Mergenthaler in 1884 and the Monotype developed by Tolbert Lanston were the bases of early attempts to automate the composition function. In 1932 a keyboard was used to produce six-level paper tape that was then used to drive a Linecaster. In 1963 C. J. Duncan of Newcastle University successfully programmed a computer to produce justified text that could drive a Monotype. Duncan converted the punched paper tape output from the computer to a monotype ribbon. The ribbon was then read backwards into the caster so that the end-of-line spacing codes would be read first, causing the wedges to be inserted properly for justification. Later versions of the Monotype accepted paper tape with six-, seven-, and eight-level codes.

It was in the decade of the 1960s when both special purpose computers and general purpose computers were widely applied in the printing industry. The Linasec computer by Compugraphic Corporation and the Delco Justifier by Delco Radio Division of General Motors are examples of special purpose computers developed during this period. The IBM 1130 and the DEC, PDP-8 are examples of general purpose computers utilized for similar functions. The distinction between general purpose and special purpose computers is made by the degree to which they are controlled by hardwiring or programming. The general purpose computer is controlled by software, as opposed to the hardware logic of the special purpose computer. It was also during the 1960s that software systems were developed for computer-aided composing. Companies such as IBM, DEC, Elliott Automation, RCA, Honeywell, and others devoted considerable resources to the development of extensive software systems for typesetting and filmsetting. In 1965 there were reported 26 Linasecs in the United States, and in 1966 there were 91 Linasecs and Justapes in the United States. In 1967 these had increased to 197. Although the general purpose digital computer was gaining popularity, there were 470 Linasecs and Justapes in 1972. Most of these were in newspaper offices. The general book printer needed a more powerful general purpose computer than that required for newspapers because of his need to do more extensive editing and more sophisticated composing. As a result, in 1972 only 28 book printers had Linasecs or Justapes and 68 had DEC, PDP-8s, while 40 had IBM 1130s.

Keyboards

Another development related to the automatic control of typesetting devices was the printer's keyboard. The development of a keyboard for the assembly of founder's type took place in the late 19th century. The first attempts at developing

keyboards imitated the compositor's type case. These keyboards had separate keys for upper and lower case and the key arrangement was dictated by the method of character assembly. It was the Monotype model D keyboard introduced in 1907 which became the standard for printers, with a "qwerty" typewriter lay and removable keybars which made the keyboard independent of the matrix case arrangement. The Linecaster machine keyboard lay followed the matrix assembly needs of the machine. This keyboard arrangement took into account the frequency of use of the characters but unfortunately neglected the performance of operators. The development of keyboards that produce machine-readable text that can be computer composed was the next step. The keyboard character code is a six-level code; only 64 unique codes can be represented. Since some of these codes are required to control the typesetter device, actually fewer than 64 characters are available to represent printable characters. Since the mechanically controlled Linecaster had a minimum printer's font of 100 characters, the machine-readable limitations posed some technical problems. One method to overcome this limitation was to increase the coding level to seven- and eight-level codes. This increases the unique character set to 128 and 256, respectively. Another method used to overcome the character set limitation of the machine-readable media was to use sequences of characters. Typically, certain keys are set aside to indicate a control or shift condition. Thus, a single set of 26 letters from A to Z can be used to represent the 52 letter sequences A–Z and a–z by use of a shift key which sends a code that is interpreted to mean that the character which follows is an upper case character, and which, when not present, indicates a lower case character. Therefore, a keyboard with 44 keys can represent 88 different characters in the shifted and unshifted modes. If a six-level code is used for punching the characters onto paper tape, only 64 of the 88 characters can be uniquely encoded. Therefore, the operator is instructed that certain characters must be keyed as sequences of two characters, with the first character being used as a control character only. Thus, with only one control character, it is possible to double the character set. If three-character sequences can be used, the character set is tripled. The difficulty with this approach is that the operator of the keyboard cannot master the sequences easily and his/her performance will suffer. This will be especially true if the operator must enter control codes signifying the typeface, type size, measure, vertical spacing, and indentation. Keyboard development is still underway, with a variety of magnetic media being used for filmsetting methods, such as key-to-magnetic tape, key-to-disk, and floppy disks.

Justification of Text

A composing problem that printers have always found difficult and time consuming is that of line justification. The use of the space-band and the justification drum on Linotype and Monotype machines, respectively, are two mechanical methods used to determine when the line is full of text. The object of line justification is to produce straight margins on the left and right by varying the space between words and characters. A computer has the ability to determine the number of words that

will fit on a line of a given length by adjusting the space between words and/or characters. This process requires that the computer know the width of each character in the text. This is complicated because a unit of measurement for type body size has not been adopted internationally and the set widths vary from typeface to typeface. This means that a great variety of widths must be accounted for in the composition.

Although it may be desirable from a computer composition point of view to standardize set widths so that the same number of ems will be equivalent to a specified number of picas in any set, this is not easily done, since the available type fonts act as the specification basis for new printed products. Another complication arises for the computerized justification of lines in that, although the characters are calculated in units of set, the word spaces are calculated in thousandths of an inch. Thus, computerized control of justification must not only calculate the number of characters in the specified type fonts that will fit into the line measure, but must also consider the interword spaces. This means that there is no common denominator for the various width calculations and they are dependent upon the different type fonts and the number of words, characters, and spaces on a line. This is further complicated by the need to hyphenate words to produce a line without noticeable space differences between words or characters.

Early attempts at computer-aided typesetting used a computer to control a Linecaster. This system consists of three basic components: a keyboard, a computer, and a Linecaster. The keyboard is utilized to produce a punched paper tape with a six-, seven-, or eight-level code. Six- and eight-level codes are the more common. The text that is keyed by the keyboard operator is punched on paper tape. The tape is then taken to the computer for justification and other composing functions. The result of the computer processing of the input text is another punched paper tape with the proper spacing and control codes to drive the Linecaster.

These types of systems are not on-line to the computer because of the wide variance between the speeds of the various components. The computer can process and punch data at rates equal to 50 times the input operator speed and 25 times faster than the Linecaster can operate. The Linecaster, on the other hand, can operate faster than three keyboard operators. These systems are known as torn-tape systems because when several pages have been keyboarded, the paper tape may be torn from the punch and processed through the computer for composing. The computer's punched output is also torn from its punch and processed through the Linecaster, which produces the composed lines ready for the remainder of the printing process. Special Linecasters were developed that made it possible to make changes in the type size and measure but these systems were never operationally successful. The advantage of using a computer-controlled Linecaster is that it avoids the use of justifying keyboards and eliminates the need to remember sophisticated hyphenation and other rules for justification. Figure 1 illustrates the basic Linecaster process. As on-line systems became more and more economical in the 1970s, it became possible to place the Linecaster system on-line. It may be used completely on-line, with no paper tape punches and keyboard devices, sending data directly to the computer. The computer spools the output from the keyboards and processes

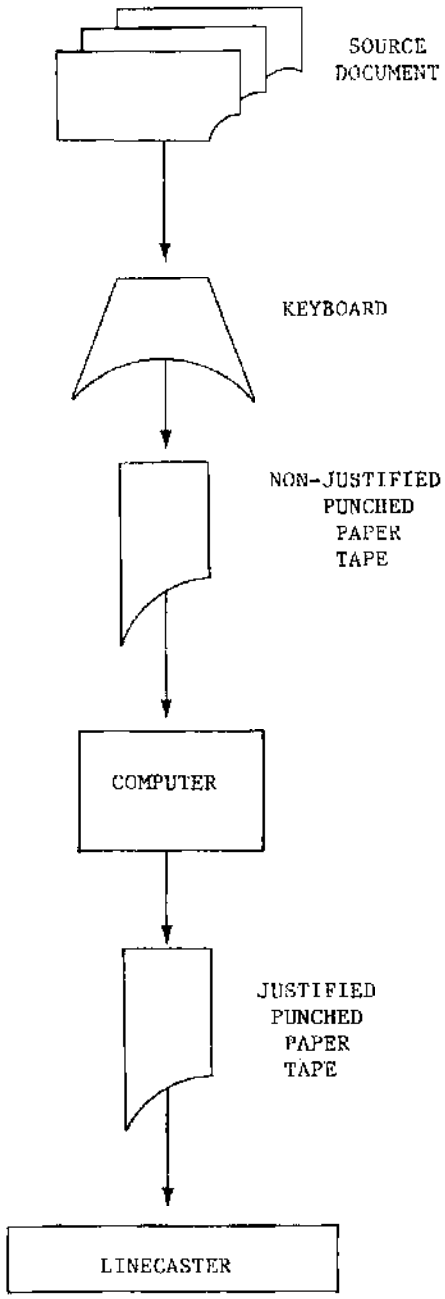

FIGURE 1. *Simple computer-controlled Linecaster system.*

it as input jobs are completed or when commanded to do so by the operator. This system permits editing of input data on-line and has the capacity to accept input from many terminals (keyboards) concurrently. The input being keyed may represent separate parts of the same document or separate documents. This type of system is illustrated in Figure 2. The keyboard device may be a cathode ray tube (CRT) instead of a printing keyboard device, with a multiplexor controlling the transmission of data between the terminals and the computer.

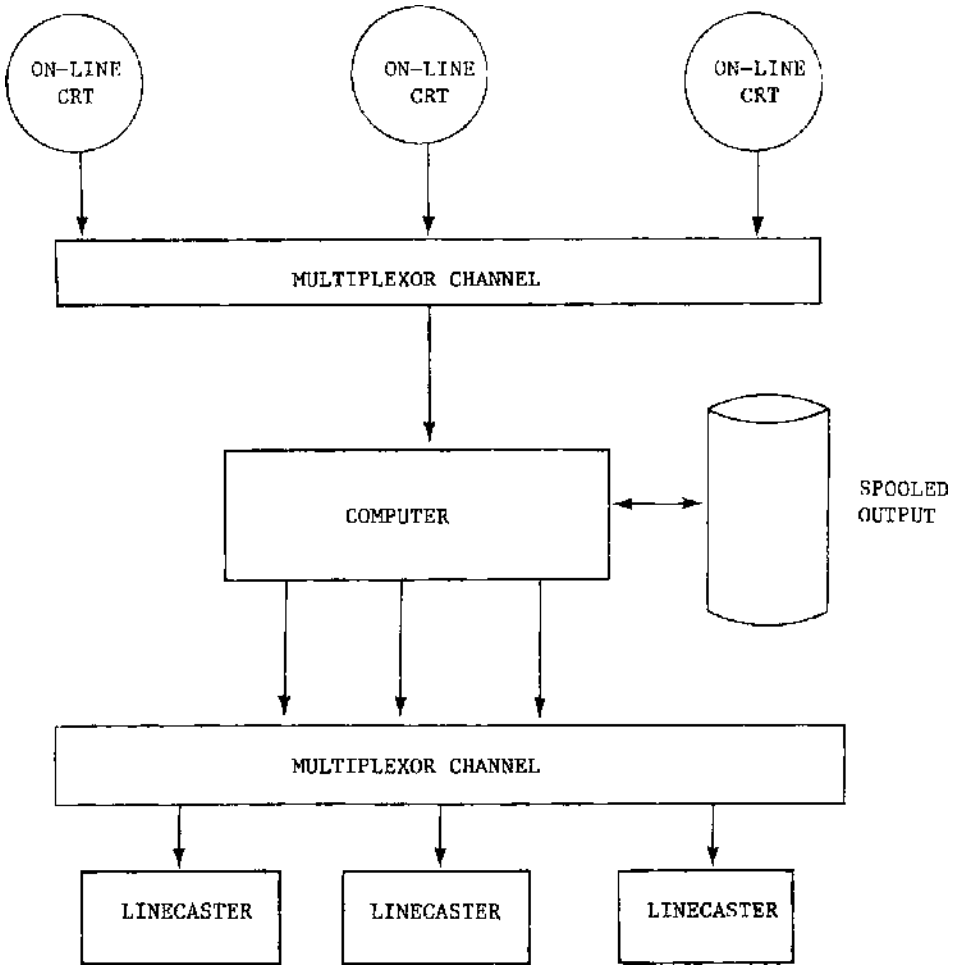

FIGURE 2. *On-line computer-controlled Linecaster system.*

The software (computer programs) necessary to perform editing, spooling, and justification and other composing functions must be purchased or developed before such a system is feasible, even if the hardware is available.

The use of computers for typesetting composition was especially attractive to newspapers that gathered data from wire services in a machine-readable form capable of being composed on a computer. Thus, the news data would not require rekeying. The value of computer-aided typesetting to newspapers can be verified by the fact that over 60% of computer-typesetting equipment installations are in newspaper offices.

Filmsetting

The use of the computer to drive a Linecaster was an important advance for the printing industry, but if it had not been for the development of film techniques that permitted composing text in the form of white-positive images on a black back-

ground, the computer would probably be used to control hot metal processes. In fact, several such systems were proposed but could not be economically justified. The difficulty with the computer-controlled Linecaster was that type changes and measure changes were difficult to implement and it was unsuitable for tabular settings. In addition, the impossibility of having variable line spacing to aid in page makeup severely limited its general applicability.

The development of filmsetting techniques overcame the limitations of linecasting, and greatly reduced the cost of producing a page of print relative to hot metal methods. Filmsetting techniques were experimented with as early as the 1920s but could not be justified economically. The Intertype and Linotype companies experimented with filmsetters. Linotype abandoned their project but Intertype developed a filmsetter using a matrix assembly method in 1949. Their first model was called a Fotosetter. The method of line justification was not typographically acceptable to the typographer although the general reader did not seem to notice. Later models developed in the 1950s offered alternatives to the objections made by typographers. Type size changes were made via a multiple lens turret with a range from 3 point to 72 point. In 1964 the Fotosetter was equipped with a paper tape drive. This meant that computer composition was possible although it was never used commercially in this manner. In 1955 Monotype Corporation produced the first commercial filmsetter. Development of the Monophoto filmsetter took several technological generations but in 1964 the H.M. Stationery Office produced a drive tape for a Mark 3 model using an eight-level code. At the same time the Monophoto was being developed, Michael Barnett began experimenting with computer composition at MIT. He performed his work in 1961 using Photon 560. The Photon used a rotating plastic disk with 16 fonts of 90 characters each and a rotating turret with 12 lenses for changing type size. This effectively provided 17,280 characters for composition purposes.

Keyboarded unjustified text was processed through a computer which produced justified text on eight-level coded paper tape which was then used to drive the Photon filmsetter unit. Barnett used an IBM 7090 to perform the justification. Other developments in the early and mid-1960s improved on the composing software and interface media. The Linofilm filmsetter also shares in the credit for the development of filmsetting devices and processes beginning in 1956. The Linotype was first driven by computer output at IBM's Watson Research Center in 1962. It was in the mid-1960s when paper tape input to the filmsetter began to be replaced by magnetic tape. From the mid-1960s until the mid-1970s rapid advancements were made in filmsetting techniques. The early methods used unscanned techniques, whereas the 1970s brought scanned techniques. Scanned techniques refer to a method of electronically generating the desired characters to be placed on film, whereas the unscanned methods use a matrix of character images that are selected mechanically and projected on a film. Scanned methods were developed in the late 1960s for computer-to-microfilm (COM) applications. The speed of filmsetters has increased from 10 characters/second for unscanned methods to several thousand characters/second for scanned methods.

The basic principle behind filmsetting is to take keyboarded text and compose

lines that are then recorded on a film using photographic techniques. The earliest methods assembled white-positive images of type fonts using a linecaster-type of mechanism. The assembled matrices were photographed to provide a film galley that was then used in producing plates. The next technological step used a master film of the type fonts necessary for a job. This matrix of type fonts was used to select the correct characters to be photographed for a line. This eliminated the linecasting mechanism and the matrix case. The input to the filmsetter mechanism was controlled by punched paper tape produced by a computer and its related composing software. Flmsetting equipment was driven by seven-level and eight-level codes, as opposed to the earlier six-level codes. The computer software system that performed the composing for a filmsetter had to be more intelligent than the Linecaster control programs. The filmsetter programs had to translate the text into typographic control codes for typeface, type size, measure, vertical spacing, and horizontal spacing to drive the filmsetting mechanisms. Some early models of filmsetters used a rotating lens turret and a rotating disk with a matrix of type fonts to be used in composing the text. The codes are sent to the filmsetter by the computer directly or on paper or magnetic tape. This output causes the correct type font and type size to be selected and recorded on film. In other filmsetter devices, the type fonts are kept on 35-mm film that has to be inserted manually. These types of machines can usually handle four to eight type fonts with 60 to 1,200 characters at one time. Figure 3 illustrates a filmsetting method. The speed of filmsetting made the process attractive, as did the multiple type fonts and more sophisticated justification techniques. Because the rate of input to the filmsetter from paper tape was considered too slow, the medium of magnetic tape was adopted by many filmsetter manufacturers. This provided an input speed that exceeded the capability of unscanned image filmsetters. Unscanned filmsetter devices use a moving matrix grid or a stationary character grid with electromechanical control of character selection for photographic recording. The previously mentioned methods of filmsetting are all unscanned methods. Speeds of 10 to 30 characters/second are typical of unscanned filmsetting methods.

Scanned Filmsetting

The research performed in the 1950s on computer-to-microfilm systems by Eastman Kodak resulted in the discovery that by using scanned methods it was possible to record 90,000 characters/second on a film. A scanned method uses a CRT (cathode ray tube) to generate characters on a screen, which is scanned. The character image on the screen is transmitted to film. The film is then used to produce plates for the printing press. Figure 4 illustrates a scanned filmsetting device.

The computing resources necessary to perform scanned filmsetting are extensive. These include the software required to control the character generation, line justification, spacing (horizontal and vertical), line drawing, etc.

The typical operating speed of composition using scanned filmsetting is in the range of 100 characters/second to 1,000 characters/second. Some commercial devices usually associated with scanned filmsetting are: RCA Videocomp, Digiset,

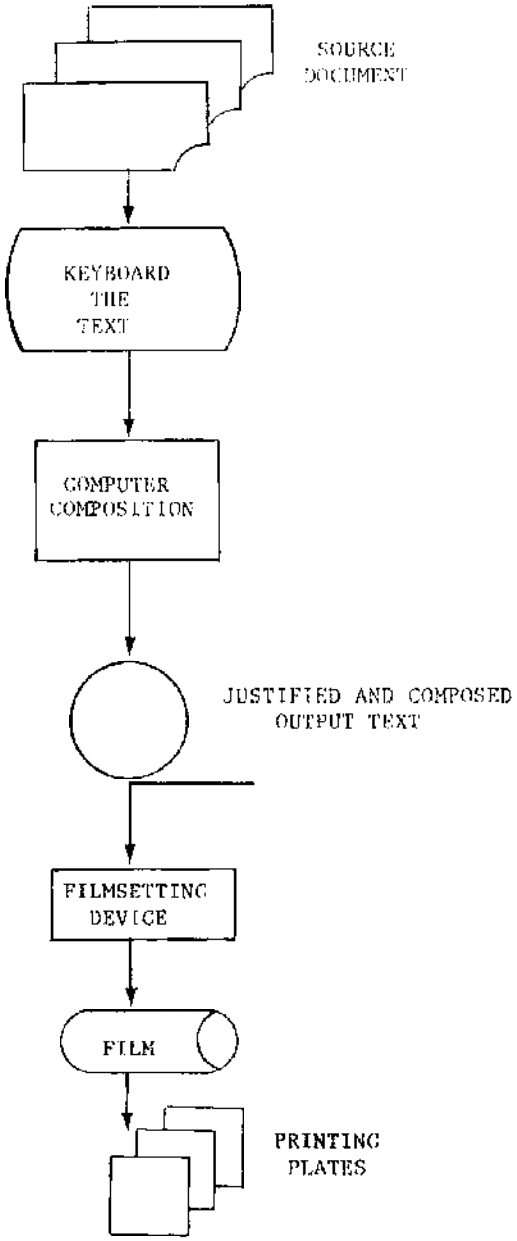

FIGURE 3. *Filmsetting method.*

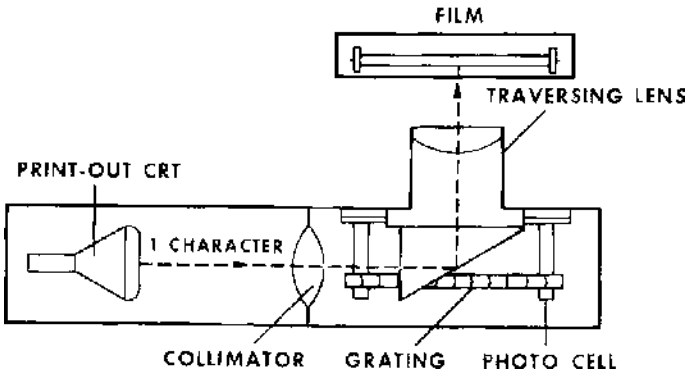

FIGURE 4. *Scanned filmsetting device.*

Photon, Linotron, Harris-Intertype Fotoronic, Crosfied Magnaset 226, and Compugraphic Videosetter. Work continues on methods to improve the speed and quality of composition via improved hardware and software.

Problem Areas

A problem that has been with the printing industry since the inception of keyboarding of text for composition is the limited number of keys available to encode the printer's font. A printer may require different fonts and type sizes within a given text, and it is impossible to include all of these on a keyboard. In addition, some compositions require a character set that uses diacritical characters. This is true if foreign-language materials are being composed.

The Library of Congress estimates that it requires approximately 1,400 characters to cover its catalog card composition process. Since it is impossible to operate a keyboard with 1,400 unique keys, methods have been developed to indicate changes in type font or typeface. This is done with character sequences or escape sequences. Thus, the character "á" can be represented on the keyboard as a two-character sequence such as $a, where the $ character is an escape character that generates a character code that indicates that the "a" that follows is to be translated to "á." Similar methods can be used to indicate indentation, line positioning, typeface changes, and type font changes. Needless to say, when using this approach the burden is placed on the keyboard operator. Research and development continues on this important problem area and solutions continue to make advancements.

A second problem area is that of verifying and editing text data after the filmsetting has been completed. If the desired changes are extensive, the original input text must be edited, because the editing of composed text requires extensive knowledge of how the composition process is done so as not to destroy the next filmsetting run.

If the source text is edited to such an extent that the entire filmsetting process must be redone, the cost becomes excessive. At the present time software to perform editing and recomposition only to the extent required to be compatible with the remaining filmset plates is still underdeveloped. As a result, error correction is an expensive process once the filmsetting process has been completed.

In the same manner, verifying is a slow and tedious process that does not guarantee that no editing will be required.

A third, more general problem area is that related to the quality of composition. This refers to the aesthetic quality of the results. A handset product is never the same as a computer-composed product. As a result, efforts continue in attempting to improve the quality of the composing process to imitate manual methods.

The advent of computers into the printing industry has produced some remarkable changes in the craft. Like all changes, not all of what has happened is for the betterment of the industry. But, as the computer becomes recognized as an important tool for the printing industry, its application becomes ever more refined.

JAMES G. WILLIAMS

PRISON (CORRECTIONAL) LIBRARIES

To even begin discussing library services in a correctional institution, one must first set some definitions of terms which may lead to confusion in this context and describe some of the variables which affect the comments to be made.

A correctional institution for this purpose is an institution in which persons are held for court cases or to which they are committed for criminal behavior, as a result of court action. The most general categories of correctional institution are jails (local institutions), detention centers (local institutions), and prisons (state and federal institutions). Such terms as penitentiary, regional jail, reformatory, holding center, admissions unit, development center, etc., can be considered as subcategories of the previously cited general terms. Although each has a unique meaning in one or more parts of the United States, there are no commonly understood universal definitions for these terms.

Institutions which fall in the general category of prerelease centers and halfway houses constitute a borderline which will not be discussed in this article. Generally, the purpose of such institutions is to integrate the resident into the community. Library services to meet this goal can be provided through the local public or school library. This type of institution and its role in the correctional picture are also in such a stage of development at this time that it seems inappropriate to attempt to consider the library as an integral part of its organization until there is a more general understanding of what that structure is.

Correctional institutions may be very small or very large. A diagnostic unit of 10 persons is not the usual institution size, but there are several correctional institutions in the United States with less than 25 residents. The largest institutions cluster in the group with about 1,500 to 2,000 residents but there are some with 5,000 or more residents. Correctional institution residents may be either adult or juvenile, male or female.

Correctional institutions are also described as requiring minimum, medium, or maximum security. Definitions of these three terms vary somewhat among institutions and states. Whatever the definition, the restraints and constraints resulting from security requirements have a very specific effect on the kinds of library services which can be offered and the manner in which those services can be offered.

A library, for the purpose of this article, is an organized collection of materials of various kinds selected to meet the library needs of the residents of the particular institution. Within this paper, the term "book collection" will be used to describe materials held by an institution which are not organized or which have simply been accumulated rather than selected. "Organized" in this context is understood to mean that the materials are classified using one of the standard classification systems and cataloged in a manner that permits identification of the materials in the collection by author, title, and subject.

The institution library should provide the residents of the institution with the services they would have available on the "street." Therefore the library must function as a public library. Where residents would need school, academic, or special

library services, the library should provide these also. In almost every case, all four types of library services must be provided from one library. Very few, if any, institutions can afford the luxury of more than one library in the facility. Institutional libraries should also meet the needs of staff for job-related materials. Most correctional librarians also have resident library aides and must function as teacher, trainer, and supervisor for the residents assigned to work in the library.

In this article, every effort will be made to provide factual information concerning correctional libraries. However, there are major communication gaps in the use of the few terms described above which make much of the available and very limited literature almost meaningless in terms of common understanding. For this reason most of the statements are general, giving a range of high and low features rather than specific figures. The bibliography, within the limitations of common understanding, will provide more specific information. Due to the problem in common communication, which is even greater when international information is considered, this paper will concern itself with correctional libraries in the United States.

Historically, there was little or no library service in correctional institutions of any type prior to 1900. However, book collections have existed, to some extent, at least since 1842.

The Bible and some religious books were available to prisoners in the penitentiary in Philadelphia at the time of Charles Dickens's first visit to the United States in 1842. In *American Notes*, Dickens describes his visit to "Philadelphia and its solitary prison." In describing the life of the prisoner, Dickens says: "He has a Bible, a slate and pencil, and under certain restrictions, has sometimes other books, provided for the purpose, and pen and ink and paper."

Two years after Stillwater Prison was established as a Territorial Prison in 1851, there were 900 books for 218 inmates. When the books were destroyed by fire in 1884, 1,000 new titles were purchased, in part with a personal loan from the warden.

Probably the first recorded designation of a librarian for correctional library service occurred in Iowa. About 1903 the Iowa State Board of Control said: "We seek to provide each institution with a good working library suited to the needs of its inmates." In 1905 the Board of Control created the office of supervising librarian, to which Miss Miriam E. Carey was appointed in 1907.

In 1911 a committee of the American Library Association (ALA), the Committee on Libraries in Federal Prisons, worked with the American Prison Association (APA) to improve library services. The American Library Association also had a more general Committee on Hospital and Institution Libraries prior to 1911. That committee was the forerunner of the present ALA Health and Rehabilitative Library Services Division with its section on Library Services to Prisoners.

The first publication directly related to the field was probably ALA's *Manual for Institution Libraries* (1915).

In 1927–28 Austin H. MacCormick and Paul W. Garrett, executive secretary of the National Society of Penal Information (now the Osborne Association), made the first nationwide survey of American prisons and reformatories for adults, 110 federal and state institutions. At the same time MacCormick surveyed the educational

programs under a grant from the Carnegie Corporation. "The Library as an Agency of Education," a chapter in *The Education of Adult Prisoners—A Survey and a Program*, resulted in 1931.

Librarians in correctional libraries today may not be encouraged to know that the book collections in 1931 reflected the same inadequacies seen today. A trained librarian at San Quentin discarded 20,000 out-of-date, poor-condition, and unsuitable titles from that collection. At the Federal Penitentiary at Atlanta 15,000 were discarded. Similar or worse conditions existed in most of the institutions surveyed.

Circulation figures in the survey were misleading since some figures were based on a regular delivery to every inmate whether books were requested or not. Few libraries had tables and chairs and only a few permitted browsing. There was not a single librarian in the 110 institutions, although some libraries were at least supervised to some extent by a chaplain or teacher with a college degree. Inmate librarians were in charge of a majority of the libraries.

While the situation was grim, there were bright spots. Some inmate librarians did an outstanding job, as did some of the teachers and chaplains. Some institutions received professional guidance from local librarians. Some inmates had interlibrary loan available through their library. In some states there was some professional supervision of library services through the state library agency or the state correctional agency.

The recognition of libraries by the American Prison Association through the formation of a Committee on Institution Libraries was a landmark in 1932. Another "first" in that year was the *Prison Library Handbook*, the first of a series of publications resulting from the collaboration of the American Library Association and the American Prison Association committees.

The first attempt at standards for prison libraries, *Objectives and Standards for Libraries in Adult Prisons and Reformatories*, was approved by APA in 1943 and by ALA in 1944.

Although juvenile and female institutions were not totally ignored by librarians, most of the publications and the librarians were concerned with adult male institutions. There were and still are relatively few females in correctional institutions by comparison with the number of male residents in correctional institutions. Juveniles, who would now be committed to juvenile facilities, for many years were sent to adult facilities or to reformatories which were adult facilities for younger first offenders. Also, there have been several changes in the definitions of "juvenile" as a term in the context of correctional facilities over the years.

Relatively little overall progress was made in improvement of library services in correctional institutions from the 1930s to the late 1960s. A number of persons from both ALA and the American Correctional Association worked to improve the situation. Their efforts resulted in considerable improvement in specific institutions but the nationwide picture remained discouraging. In part, this was due to an increase in the number of institutions. From 1870 to 1970, for adult correctional facilities alone, the number increased from 34 to over 400 facilities. Slow progress also is a result of conflicting priorities and funds. However supportive of the library a prison director is, the realities of food, clothing, and security must take precedence

over library services for the available funds, which are never sufficient for the total needs of an institution.

With the federal recognition in Title IVA of the Library Services and Construction Act (LSCA) in 1966 that the development of institution libraries was needed, funds became available to many state library agencies not involved with correctional library services.

Each state, in order to qualify for LSCA Title IVA, had to prepare a plan for the use of the funds. Every state plan differed from every other state plan depending upon local conditions and previous activities. The authorized amount for LSCA Title IVA was never appropriated. As a result, the per capita formula for distribution of the funds was never used. The appropriation during the life of Title IVA was divided more or less equally, with each state receiving approximately $39,000 annually. States used those funds in a variety of ways:

1. Added consultant staff
2. Per capita grants to all institutions
3. Divided funds to each institution using a means other than per capita
4. Per capita grants to some institutions (those with librarians, for instance, or prisons, or hospitals)
5. Purchased materials or services for institutions
6. Special projects in institutions
7. Statewide surveys
8. Model or pilot libraries
9. Training for institution library personnel

Whatever the 1966 state plan showed, one of the results in every state was the assignment of responsibility for institution library services to someone at the state library agency, if only for the purpose of LSCA reports.

The 1970 amendments to LSCA eliminated LSCA Title IVA and made the substance of LSCA Title IVA part of LSCA Title I. The 1972 amendments to LSCA made it a regulation that expenditures from LSCA Title I for libraries in institutions could not be less than the 1971 expenditure.

As the first impact of LSCA was being felt in correctional libraries, the library profession in general and the professional associations in particular were experiencing a strong call for social responsiveness. One of the results of the surge toward social responsibilities in libraries was considerable increase in the interest of local libraries in serving the unserved, including persons in local institutions.

Paralleling the increasing interest on the part of librarians was an increase in the knowledge of the general public of the inadequacies of correctional institutions for rehabilitation. This knowledge and media coverage of such events as the riot at Attica caused increasing social pressure for change. Federal funds other than those for library programs were made available to correctional institutions. Many correctional administrators and staff in many situations were eager to add and improve programs and for the first time could apply for funds not earmarked for operations. The late 1960s saw much effort to improve correctional facilities and some of those efforts focused on libraries.

To review the situation in the libraries in the mid-1970s, the local juvenile detention centers in areas outside the large metropolitan centers frequently have no on-site libraries although some do have book collections. If book collections are available in small facilities, they are usually made up of gift books and frequently show no signs of selection. Such centers may also lack other rehabilitative services besides library services. This condition is a result of the varying size, age range, and type of population as much or more than of a failure to recognize library needs. A single institution may have some residents for a few hours, others for weeks. Of 10 residents, 5 may be girls aged 13–15 one day; and 6, boys under 12 the next. Detained youth may be in protective custody as a result of addiction or mental illness, of being a runaway, or as the sole survivor of an auto accident.

Improvements in library service in local juvenile detention centers have been made, however. They may take the form of planned visits to local public libraries. Education programs for residents may involve use of public school facilities, including libraries. Public libraries have placed rotating collections in the centers or have included stops at detention centers in bookmobile schedules. In some metropolitan institutions, library staff have been assigned to the detention center. Some detention centers have identified library space or even a library room. Many detention centers now have either a book collection or a library with materials which are suitable for at least part of the population. A few notable institutions have relatively good collections, in adequate space, with at least a part-time librarian.

State-administered or funded juvenile institutions are sometimes, but not always, part of a state school system which requires libraries to meet some standards of quality. Institutions in most cases are considered to serve grades K–12 even though the majority or all of the population is of high school age. A state may have admirable library requirements for its public schools, but juvenile institutions may not be required to meet them at all or may only be required to meet the much less stringent K–12 standards.

Most state-administered juvenile institutions have sufficient population to justify a full-time librarian. Where the population is too small to justify the budget outlay for a librarian and library space and materials, in the opinion of the state or institution administration, some institutions are contracting with local public libraries for services.

There are probably more good libraries in state juvenile facilities than in any other kind of correctional situation. But, these libraries appear inadequate when compared with the libraries available to this age group in the public school systems of the country. There is a strong movement to treat juveniles in local facilities rather than in large centralized facilities. This treatment approach is reducing the size of state institutions and causing a change in the type of offender in state institutions. These changes are being, and will be, felt in institution library services. Some institutions are now eliminating library positions and/or assigning other responsibilities to the librarian in a effort to adjust to reduced populations. If the community treatment approach continues, it is almost certain to result in requests for services from public and school libraries which most local libraries have not previously provided.

Because women are usually the minority in both juvenile and adult institutions,

library services for women tend to be poorer than for men. In most local correctional facilities outside of metropolitan areas, women are housed in a section of a male facility. Frequently there are substantial objections, on the grounds of security, to giving women access to the library materials housed in the male area. To some extent this may be overcome with rotating collections and book cart service. It remains a problem which, in most facilities, shows little progress toward solution. In large metropolitan areas, services may be provided which are equal to those available to men.

Library services to local jails (adult facilities) show considerable improvement in many parts of the United States. However, there is no general overall improvement. Facilities in metropolitan areas, such as the Cook County Jail in Chicago and Holmesburg Prison in Philadelphia, now have librarians and library services and programs. Librarians in these jails report progress but also many remaining deficiencies. Jails in medium-sized and small towns may have book collections which are supported by rotating collections, bookmobile service, or regular staff visits from a local public library. In some cases, funds from the Law Enforcement Assistance Administration have been used to improve local library services in jails.

Many efforts have been made by volunteer groups to improve local jail libraries. In a few situations volunteers have been able to cause the development of a library within the institution, which is staffed and budgeted from institution funds. In several cases, volunteer activities have resulted in more or better public library services. More frequently, volunteer activities result in temporary improvements. These improvements may take the form of either an improved book collection or an organized library. However, in almost every case, services which are developed by volunteers without the support of some paid library personnel from the institution or a local library regress to mediocre book collections as volunteer interest and sympathy lose impetus with the passage of time.

Most state adult correctional institutions had book collections prior to 1966. However, with very few exceptions, those collections for adults included such items as the *Five Little Peppers,* 1938 *New Trends in Television,* and 40 copies of a third-grade health and safety textbook. Where the library was directed by a resident, correctional officer, or some other nonlibrarian, no guides to selection were usually available and every book given to the library went on the library shelves.

Many state-administered adult correctional facilities have seen library improvement as a result of LSCA Title I or Title IVA. As a result of federal funds more prisons now have librarians. Those librarians have found, if they were the first librarian in the institution, that from 60% to 90% of the books on the shelves were unsuitable, out of date, or incomplete copies, just as MacCormick did in his 1927–28 survey. And, although it is a long and frustrating process, they have succeeded in discarding some if not all of the unsuitable materials. For the first time, many libraries now give a true visual showing of the quantity of useful titles to patrons and administration. Librarians are also communicating library needs to administrators to a greater degree than before.

Most librarians in adult correctional facilities do not have annual budgets but many institutions have begun to purchase new books from LSCA, Law Enforce-

ment Assistance Administration, institution budget, or canteen funds. There remain major obstacles in most adult institutions to good use of the library. Browsing may not be allowed. Security within the institution may preclude studying or reading in the library or even adequate physical access for many residents. Antique wiring and/or insufficient power may restrict the use of nonprint materials.

There is much less general censorship than before. Magazines generally are no longer turned over to an officer for review and clipping before going into the library. Residents seldom receive a book a week whether they want it or not. Materials are reviewed for suitability before going on library shelves in most institutions.

One of the very encouraging results of the many improved libraries in correctional institutions is the overwhelming evidence that residents want to read. They may use phonograph records, tapes, or film because they lack the skill necessary to read print, but every librarian with a collection suitable for the institution residents reports that readers are there. The most popular reading materials in many institutions are poetry, psychology, and philosophy. There are also avid readers of mysteries, westerns, and science fiction. Residents purchase a surprising number of books from their own funds. They may also have personal subscriptions to book review periodicals, including *Publishers Weekly* and *Library Journal.*

Several legal cases have affected the development of library services in correctional institutions in recent years. The majority of the cases have been concerned with the availability of legal reference materials in adult correctional institutions. A few cases have been concerned with juvenile facilities and general reading materials. Most of the legal actions have resulted in precedents for local or state institutions, but further court actions may be required before any general improvements result from these precedents.

Those cases concerning access to legal reference materials which have reached the Supreme Court have made it obligatory on departments of correction to provide the same access to the courts for indigent inmates as for those who are more affluent, through the provision of counsel and law books. Various ways of meeting this obligation by contract, photocopy, and on-site provision of services are being tried. The American Association of Law Librarians is working with other professional associations to develop the guidelines and bibliographies to assist institution librarians in meeting this responsibility.

In spite of the lack of personnel and library space, and of rules that encourage the use of the library and well-selected materials, there have been improvements since Dickens's visit in 1842. Librarians working in institutions, and state library agency supervisors, are frequently frustrated and depressed about correctional libraries, but a review of the last 10 years shows considerable progress in almost every state. With these libraries, it is much like a child waiting for Santa Claus—it takes so long to see results.

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MARGARET CHEESEMAN

PRIVATE LIBRARIES

Antiquity

We know pathetically little about the libraries of antiquity, and there is far less evidence for private libraries than for collections of rulers and priests and libraries available to the public. For the latter we have inscriptions and some actual sites, but for the former we have only literary references, often secondary or tertiary. Nevertheless, it is most likely that there were many more private libraries than public ones, that their resources were more significant, and that more of their contents survived, since they were not so exposed to plunder as public institutions (*1*).

There may have been small collections of material of interest to individuals in Egypt, Babylonia, Assyria, the Hittite Empire, Phoenicia, and Palestine, but libraries on which we have any information at all were priestly or official (*2*). In classical Greece there were libraries in temples, the residences of the tyrants, in the quarters of philosophical schools, and later in gymnasia. The most celebrated ones were sponsored by the Ptolemies (Museion and Serapeion in Alexandria), the Attalids in Asia Minor, and some of the other ruling houses (*3*). Private libraries in the real sense appeared first in fifth-century Athens. Athenaeus (I, 3) mentions Euripides' library, and the dramatist even suggests that his knowledge was derived from books (*Alcestis*, 962; *Hippolytus*, 451 and 954; and the *Plisthenes* fragment, 627 [*Nauck*]). Aristophanes pokes fun at the bibliomania of the tragedian (*Frogs*, 943, 1409, 1114). Plato (*Apology*, 26 D) says that Anaxagoras' works were readily available in the trade, thus available for private collections. The middle and new comedy poet Alexis of the fourth century composed a mythological burlesque, *Linos* (fragment), in which the schoolmaster Linos permits Heracles to choose books from his collection, including Orpheus, Hesiod, Homer, Choerilus, Epicharmus, and other authors, but the hedonistic youngster immediately pockets a cook book.

The first private library whose history we can trace was that which belonged originally to Aristotle (*4*). It was his personal property, not that of the Peripatetic School in the Lykeion. From Aristotle it passed into the ownership of his friend and successor Theophrastus, who added to it and later gave it to Neleus of Skepsis in the Troad on the assumption that the latter would succeed him as director of the school. Instead, Strato was chosen, and Neleus went home. Athenaeus says that Neleus sold the collection to Ptolemy Philadelphus; but Strabo follows a reliable Peripatetic tradition and says that Neleus took the books with him to Skepsis, kept the published and unpublished works of Aristotle, and sold the rest to the Alexandrians. Neleus' heirs stored the rolls in a damp basement, where they were damaged by moisture and papyrophile vermin. The Attalids, to whose realm Skepsis belonged, wanted the books for their own library in Pergamon, but the damaged ones were sold to the rich bibliophile Appelikon of Teos in Athens. He restored and copied them, paying little attention to textual accuracy. Appelikon had a command in the first Mithradatic War, in which he presumably lost his life, and Sulla took the entire collection to Rome as personal booty. Some 20 years later the grammarian Tyran-

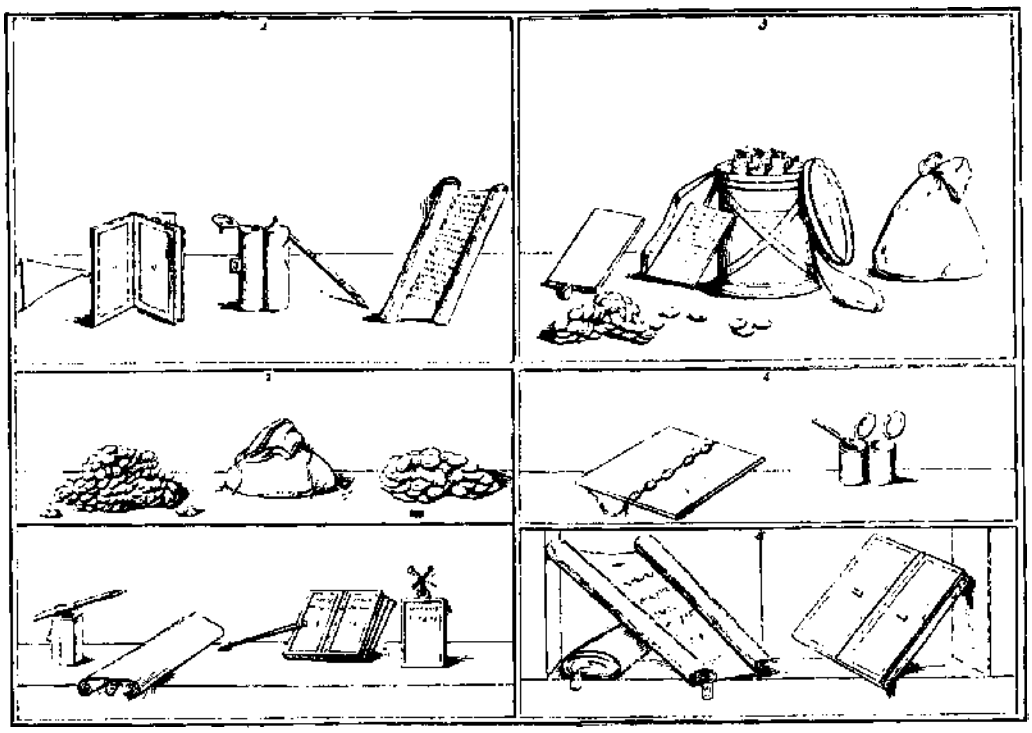

FIGURE 1. *Books and writing instruments depicted in Pompeian wall paintings.*

nio of Amisus, a friend of Cicero, Caesar, and Atticus, noticed the collection and had the manuscripts copied. They were placed at the disposal of the head of the Peripatetic School, Andronicus of Rhodes, and were the basis for a definitive edition of Aristotle's works.

In the Hellenistic period Hipparchos implied that the Alexandrian scholar Eratosthenes had a personal collection (*5*), but he probably was thinking of the Museion, of which Eratosthenes was the director. The *Suidas* reports that the Epaphroditos, who flourished in the time of Nero and the Flavian emperors, had collections of over 30,000 books. Many sophists, who enjoyed good incomes from their professions, had fine collections. Favorinus of Arles (Arelate), teacher of Herodes Atticus, Gellius, and Fronto, bequeathed his library to the first, and Proclus of Naukratis was eager for his students to use his collection as "outside reading" (*6*). Galen left his library in Pergamon when he moved to Rome. Plutarch tells us in his *Demosthenes* that library resources were so meager in his native Chaeronea that he had to develop a private collection. The Apostle Paul had a small traveler's library, and he requests Timothy (II, 4:13) to bring him a cloak left at Troas "and the books, but especially the parchments."

Although Sulla set up Appelikon's library on his estate at Cumae, where it was later used by Cicero, it did not stay together as a collection, since Faustus Cornelius Sulla had to sell it to settle his debts. Cicero was delighted with the opportunity to acquire some of the scarce books in it (*7*).

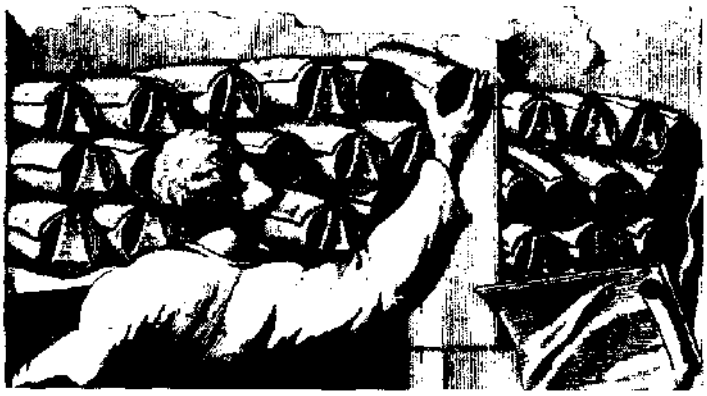

FIGURE 2. *Shelving for papyrus rolls in a Roman library.*

M. Licinius Lucullus, one of the richest men of antiquity, also acquired a collection of books as booty in Greece, and probably added to it substantially when he set it up at his summer place in Tusculum and made it generally available (*8*). It passed to his son, one of the conspirators against Caesar, and was probably dispersed after he fell at Philippi.

What we don't know, or what we might have known, about Roman bibliophily is tantalizing. (See Figures 1–3.) The excavations at Herculaneum in 1750–1765 turned up a handsome collection in a Roman villa, which has been assumed to have belonged to L. Calpurnius Piso Caesonius. Two-thirds of the rolls, which might well have been restored far more effectively had they remained in situ for two more centuries, were writings of the Epicurean philosopher Philodemus of Gadara, and it is assumed that the house belonged to L. Calpurnius Piso Caesonius, who gave refuge to Philodemus (*9*). Certainly the most productively used private library of Republican Rome was that of Cicero. In 67 B.C. he had T. Pomponius Atticus, his friend and mentor in all things literary, purchase books as well as works of art (*10*). Cicero bought books throughout his life and received many gifts, notably the collection of the grammarian Servius Claudius. His books were confiscated when Clodius maneuvered his exile in 58 B.C., but he received restitution when Pompey recalled him the next year, and he went on with his zealous collecting. The wealthy Atticus also had an extensive collection, as did Cicero's brother Quintus. Gellius (III, 10, 17) tells us that the library was confiscated when Antony had Cicero proscribed and put to death.

Under the empire, wealthy Romans with intellectual interests often had libraries in their country villas, and there were even legal considerations about the disposition of libraries in testamentary law. Parvenus who were semiliterate acquired books for show as well as even more handsome cabinets for them, and Petronius, Seneca, Lucian, and Ausonius poked fun at them. But there were those who read the books they collected. Suetonius tells us that Persius, who died at the age of 28, had already collected 700 books. Pliny's letters (III, 7, 8) inform us that Silius

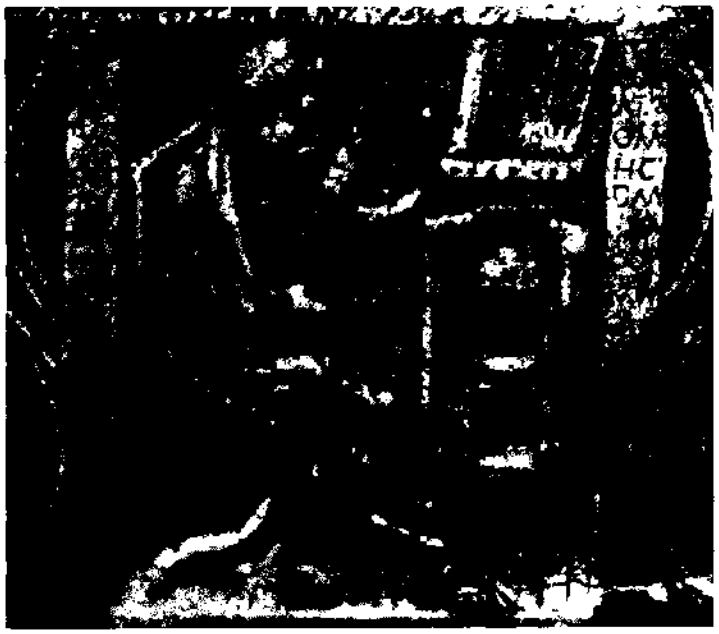

FIGURE 3. *Reading a papyrus roll in a Roman library.*

Italicus had an extensive library. The once celebrated poet Serenus Sammonicus (d. 212) was said to have owned 62,000 books, and the orator Quintus Aurelius Symmachus (340–402) probably had a much more substantial library than the *bibliothecula* to which he refers (*11*). Even with the triumph of Christianity the tradition of private libraries persisted among the Gallo–Roman aristocracy, and Sidonius Appolinaris (ca. 430–ca. 479) mentions several of them in his letters and poems.

The Middle Ages

To identify and define private libraries in the Middle Ages is perhaps more difficult than it is for antiquity. To be sure, there were Richard d'Aungerville (de Bury) and others with the same inclination to bibliomania; but—particularly in the church, which held the major libraries before the rise of the universities—it is difficult to distinguish between the personal property of some bibliophilic bishop or abbot and that of the institution over which he presided. Thus when Cassiodorus (ca. 480–ca. 575) founded the first great monastery, Vivarium, in Calabria, he probably used his own collection as a basis. A bibliophile of his stature would never have given up his zeal for collecting, but from then on it was for the monastery; and he had his own ideas about the use of books by the monks. Much the same may be said about the libraries of kings and noblemen, and a large proportion of the great national and regional libraries of Europe have partial origins in the bibliophilic inclinations of emperors, kings, and dukes. The Bibliothèque Nationale is an egregious example. However, the history of institutional libraries and the biographies of noble and

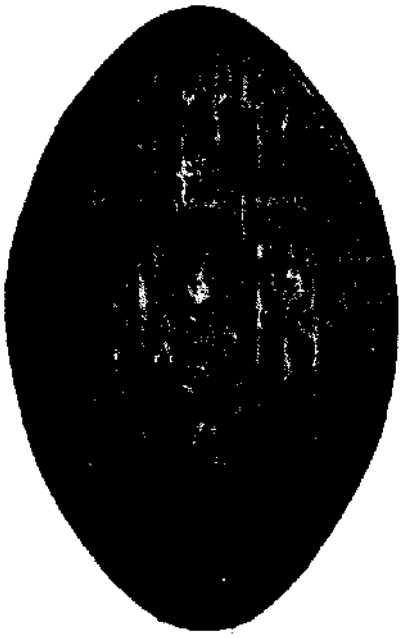

FIGURE 4. *Seal of Richard de Bury.*

clerical bibliophiles who built them belong to general library history, not to that of private collecting.

There were doubtless other medieval collectors with the same enthusiasm as Richard de Bury (from his birthplace, Bury St. Edmund's in Suffolk; or d'Aungerville, from his family name; 1287–1345), bishop of Durham after 1233; but no collector before the Renaissance is so well known as this medieval Dibdin, thanks to his classic treatise on bibliomania, the *Philobiblon* (*12*). (See Figure 4.) Undoubtedly a collector from early youth, and blessed with the means to pursue his goals, he probably amassed the major portion of his great collection after the accession of Edward III, of whom he was a favorite, in 1327. Unhappily the "special catalogue" which de Bury says he compiled has not survived, but we have extensive details about his predilections and habits as a book collector both from the *Philobiblon* and the account of William de Chambre (*13*), a Durham historian. He was said to have owned more books than all the English bishops together and to have had a library in each of his residences. De Bury's associates represented a veritable medieval Roxburghe Club, with such bookish friends in the group as Thomas Bradwardine, later archbishop of Canterbury; Richard Fitzralph, later archbishop of Armagh; Richard Benworth, later bishop of London; Walter Seagrave, later dean of Chichester; the astronomer John Mauduit; the "plain and perspicuous doctor" Walter Burley (who dedicated a translation of Aristotle's *Politics* to de Bury); Robert Holket; and Richard de Kilvington. The simple comment of Chambre, "Iste summe delectabatur in multitudine librorum," tells the de Bury story as well as a whole book.

We do know that there were strong bibliophilic inclinations on the part of many

individuals in the Middle Ages, even if their private collections, or even records of them, have not survived. That St. Francis believed it sinful to own books (as well as other property) (*14*) must have inspired something of a backlash, for the mendicants did have fine libraries both in England and on the continent; and in the 14th century they compiled the first national union catalog, the *Registrum Librorum Angliae*. Among the Gray Friars as well as the Austin Friars and Black Friars there were many individual booklovers whose enthusiasm built some handsome collections for the period, but whether they had any substantial personal collections we cannot be sure (*15*). Literate individuals surely had their personal books, and Chaucer must have had a fairly good selection to have been able to write in the *Boke of the Duchesse*:

> So when I saw I might not slepe,
> Til now late, this other night,
> Upon my bedde I sat upright,
> And bad oon reche me a book,
> A romaunce, and he hit me took
> To rede and dryve the night away.

Before the Renaissance, however, it was the royalty and nobility of the latter Middle Ages who showed the greatest sensitivity for the written word. In Flanders the dukes of Brabant and the counts of Hainault; the Valois dukes of Burgundy;

FIGURE 5. *Petrarch (from a manuscript in the Bibliothèque Nationale, Paris).*

and Louis de Bruges, seigneur de la Gruthuyse and earl of Winchester, were both patrons of literature and collectors. Many French kings and noblemen were book-lovers, and some of the former augmented the royal library, but there were also individuals who collected. Archbishop Juvenal des Ursins, who died in the middle of the 15th century, and Jacques de Pars, physician to Charles VII, are examples of Frenchmen outside of the nobility who were collectors (*16*). Bibliophily blossomed in the Italian quattrocento, but of all the private collectors Petrarch is far and away the most distinguished. (See Figures 5 and 6.) He collected books throughout his life, beginning to concentrate intensively in 1329 when, at the age of 25, he toured Switzerland and Flanders. In Paris he was pleased that the university regulated the price of books to keep them within the reach of students. In Rome he was annoyed that English and French visitors were buying up the best books. His treatise on fortune contains a dialogue on book collecting which is a vastly more critical approach than the commentary of the effervescent Richard de Bury. Petrarch was more of a modern than a medieval man, and his tastes and techniques in book col-

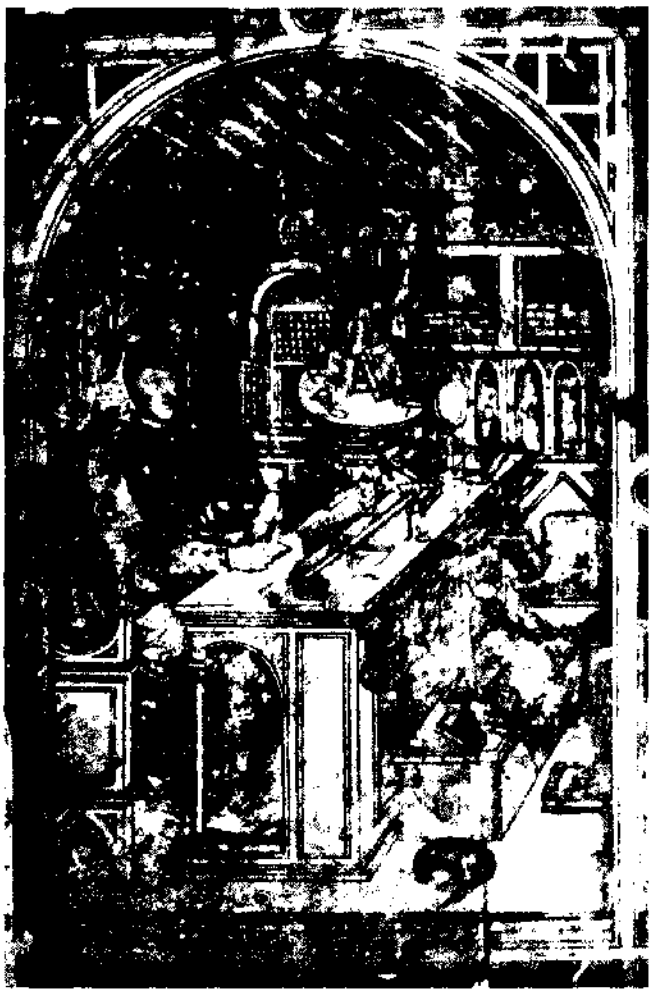

FIGURE 6. *Petrarch in his study (from a manuscript in the Landesbibliothek in Darmstadt).*

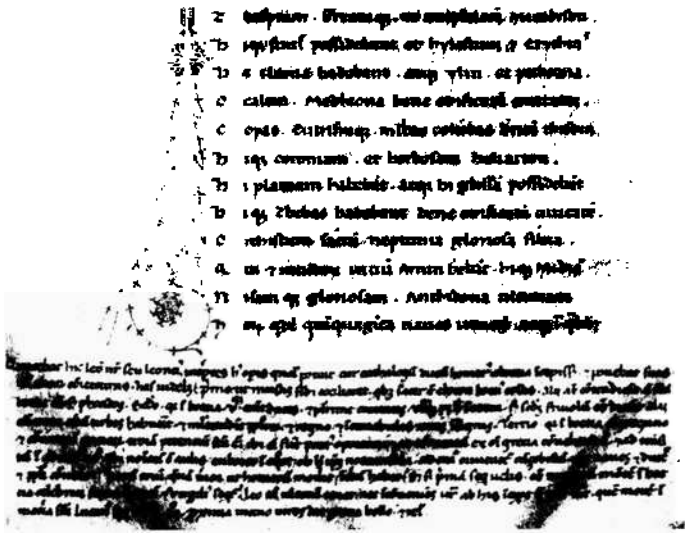

FIGURE 7. *Petrarch's* Iliad *manuscript with a note in his own hand.*

lecting reflected both learning and refinement (*17*). The pitiful surviving remnants of Petrarch's library in Venice, Rome, and Paris are a pathetic monument to the first great collector in the modern sense. Those that he gave to the Republic of Venice toward the end of his life were found by the antiquarian Tomasini in a dark room near the horses of Lysippus, most of them deteriorated beyond repair in the dank Adriatic climate. (See Figure 7.)

The most thorough study of private libraries in the medieval period of any European country is that of Ladislaus Buzas in his chapter on "Die Privatbibliotheken" in *Deutsche Bibliotheksgeschichte des Mittelalters* (*18*). In the absence of a well-developed middle class, nearly all identifiable collectors before the 15th century were princes of church and state; and, since their books often went to monasteries and cathedrals, the history of their libraries belongs to that of the church's collections. Thus the collection of Otto III (d. 1002), friend of Gerbert of Aurillac (later Silvester II), was given by his successor Heinrich II (d. 1024) to the see of Bamberg. Karl IV (d. 1378) gave the manuscripts he took to Prague from Avignon and Paris to churches, monasteries, and the university. As early as the 11th century one Reginfrid, of noble birth, presented 39 books to the library at Tegernsee when he entered this monastery.

In 14th-century works we begin to hear about wealthy collectors in the cities. According to the poet Johann Hadlaub (d. ca. 1340), the Zürich patrician Rüdiger Manesse (d. 1304) and his son Johann (d. 1297) collected older German literature, and for this reason Johann Jakob Bodmer named the great Heidelberg Minnesang manuscript for the family ("Manessische Handschrift"). Another collector of secular literature was the Bavarian knight and counselor Jakob Pütrich von Reichertshausen (d. 1469), who assembled 164 titles, many of courtly epics, in his peregrinations from Hungary to Brabant. Lower in the social scale was Hugo von Trimberg (d. 1313), schoolmaster in Bamberg and author of *Der Renner*, who tells us in the

latter work (lines 16145–16151) that he owned 200 books. We know that Nuremberg patricians must have had substantial collections of didactic literature, often presented by novices upon their entrance in the Dominican monastery of St. Catherine, for example, by a young woman of the distinguished Tucher family, who brought 23 titles with her.

After the 13th century, scholarship was not the exclusive preserve of the church, and the learned man could be a lawyer or a physician as well as a churchman. Early protohumanists such as Albrecht von Eyb (d. 1461), Rudolf Agricola (d. 1485), Konrad Celtis (d. 1508), and Hartmann Schedel (d. 1514) surely had their personal collections, and some of their lesser brethren were probably foremost in the mind of Sebastian Brant when he created the figure of the "book fool" in *Das Narrenschiff* (1494). Some collectors were also benefactors of university libraries, thus Konrad von Gelnhausen (d. 1390) and Marsilius von Inghen (d. 1396), who presented 117 and 437 books, respectively, to Heidelberg. Amplonius Ratinek de Berka (d. 1435), personal physician of the bishop of Cologne, gave 635 volumes to the Collegium Amplonianum, which he founded at the University of Erfurt. The 283 books of the sometime rector of the University of Paris and instigator of the first printing in Paris, Johann Heynlin von Stein (d. 1496), went with him when he entered the Carthusian house in Basel. Nikolaus von Cues (d. 1464), cardinal, apostolic legate, and discoverer of Cicero's *De republica*, left his collection to the hospital of his native place, Cues near Bernkastel on the Moselle, where 270 of his manuscripts are still preserved. Perhaps the finest private collection of the period was that of the Schedels: Hermann (d. 1485), city physician of Nuremberg, who left his collection to his cousin Hartmann (supra), who is best known as author of the *Weltchronik*, issued in Latin and in German by Anton Koberger in 1493 with some 1,900 wood engravings. Hartmann owned at least 632 books, which he cataloged himself (*19*), and 59 were presented to the Nuremberg Stadtbibliothek.

The Renaissance to the Present

ITALY

The line between the Italian Middle Ages and the Renaissance, just as that between other historical periods, cannot be readily identified at any specific date. The transition was gradual and often imperceptible, an especially unclear situation in the case of book collecting by private individuals. Petrarch and Hartmann Schedel had roots in the Middle Ages, but they were essentially Renaissance men in terms of orientation and achievement. In the high Renaissance the zeal for rediscovery of ancient learning inspired the passion for collecting so that private libraries flourished as never before. Many of the great private libraries assembled in the last five centuries have passed into public collections, and their origins are a part of the history of these libraries; but the attitudes toward books which motivated the formation of these collections and the methods are those that we recognize in the modern collector.

FIGURE 8. *Poggio Bracciolini.*

The prototype of the "bird dog" collector was Gian Francesco Poggio Bracciolini (1380–1459) (*20*). (See Figure 8.) His most significant contributions were his recovery of Lucretius and Quintilian, the latter in the Abbey of Reichenau. He was a prodigious copyist, and his extensive travels as a papal secretary enabled him to visit many a monastery with almost forgotten treasures which he could make available to scholarship. His valuable manuscript collection found an ultimate home in the Laurenziana in Florence. His contemporary, Niccolò dei Niccoli (1363–1437), was the greatest bibliophile of his day. He had a collection of some 800 manuscripts which he had bought or copied. He was the intimate of major humanists to whom his collection was available, and the bibliographical adviser of Cosimo de' Medici (1389–1464). (See Figure 9.) Cosimo acquired some 200 manuscripts from Niccolò, and, together with 400 of his own established a library in the Dominican monastery of San Marco in Florence. The collection passed to the Laurenziana when the order was dissolved in 1808 (*21*). The Medicis, above all Lorenzo il Magnifico (1449–1492) (*22*), had an abiding interest in book collecting. (See Figure 10.) One of Lorenzo's greatest contributions was to commission Andreas Johannes Laskaris (ca. 1445–ca. 1535) to collect manuscripts in Greece, and he liberated some 200 pieces, mainly from the monasteries of Mount Athos (*23*). After the fall of the Medicis, Laskaris went to Paris where he directed the organization of the library of François I at Fontainebleau. The activities of the book-loving Medici popes, especially Leo X and Clement VII, are a part of the history of the Vatican Library.

FIGURE 9. *Cosimo de' Medici.*

FIGURE 10. *Lorenzo il Magnifico.*

Florence and Rome were not the only points of bibliophilic ferment in Renaissance Italy. In Ferrara the house of Este was responsible for one of the noblest libraries of the age; and Ercole I (1431–1505), especially zealous in collecting manuscripts in Italian, and Alfonso II (1533–1597), who acquired Corvina manuscripts *inter multa alia*, were leading figures (*24*). In Urbino the library of Duke Federigo da Montefeltro (1444–1482) attracted the main scholars of the age to this country town (*25*). A good proportion of the books were supplied by the copyists of Vespasiano da Bisticci (1421–1498), whose services for both Duke Federigo and Cosimo de' Medici present a dealer–collector relationship that has endured for the last five centuries (*26*). In many respects Matthias Corvinus (1458–1490), king of Hungary, should be ranked among the great Italian bibliophiles, for Vespasiano was his main supplier, and most of his great collection (estimated at 1,000–1,500 volumes) were of Italian provenance (*27*). The Corvina Library might have been the basis for a great Hungarian National Library but for the disastrous aftermath of the

FIGURE 11. *Cardinal Federico Borromeo.*

FIGURE 12. *Maffeo Pinelli.*

Battle of Mohács (1526) and the destruction of the Magyar kingdom. A few pathetic remnants survive, for example, the 47 volumes of the Österreichische Nationalbibliothek, of which 16 manuscripts were returned to Hungary in 1933.

In this brief outline, only outstanding examples of private collectors from all periods may be mentioned, simply to illustrate trends in various countries at various times. Italy, where collecting has been a passion for seven centuries, is an egregious example. Thus, of the great Italian bibliophiles of the 16th century we may mention only Gian-Vincenzio Pinelli (1538–1601) and Cardinal Federico Borromeo (1564–1631; see Figure 11). Pinelli assembled a very extensive collection (*28*), augmented by that of a rival collector, Paolo Aicardo, with whom he had an agreement that the survivor would inherit the other's collection. Upon his death Venice seized some 200–300 manuscripts copied from Venetian archives. Part of the remainder was shipped to Pinelli's heirs in his home city of Naples, but one ship was taken by pirates. The other part remained in family ownership in Padua; and after the death of the last owner, the scholarly printer and bookseller Maffeo Pinelli (see Figure 12), in 1785, 14,778 lots were auctioned in London in 1789–90. Pinelli's books that reached Naples remained in storage until Cardinal Borromeo bought them in 1602 as the basis of the Biblioteca Ambrosiana, opened in 1609 (*29*). Another member of the same family, Count Antonio Maria Borromeo (1724–1819), formed another distinguished private library which he described in *Notizia de' novellieri*

FIGURE 13. *Antonio Magliabecchi.*

italiani (1794) and *Catalogo de' novellieri italiani* (1805). In Rome, Cardinal Camillo Borghese (Paul V, 1605–1621), Bishop Angelo Rocca (1545–1620), and Cardinal Hieronymus Casanatta (1620–1700) were typical of those princes of the church who were book collectors and left their treasures to libraries.

The archibibliophile of the 17th century was Antonio Magliabecchi (1633–1717) (*30*). (See Figure 13.) All manner of legend about Magliabecchi haunts the literature of bibliomania, including his alleged knowledge of shelving in the Sultan's library (although he never left Florence save for two short trips, despite a prodigious correspondence throughout Europe). The facts are that he was librarian of Grand Duke Cosimo III, that he acquired a personal collection of some 30,000 volumes and knew the bibliographical facts about them in minute detail, and that he lived in material poverty amidst a wealth of books (*31*)—and left them to the public. In 1861 the collection was combined with the Grand Ducal Biblioteca Palatina to form the modern Biblioteca Nazionale Centrale.

In the 18th century the figure of Cardinal Domenico Passionei (1682–1761) overshadowed all other personalities in Italian bibliophily (*32*). For the last 6 years of

FIGURE 14. *Bookseller on the streets of Rome in the 17th century, by Anibale Carracci.*

his life he was librarian of the Vatican, but as early as 1721 his private collection in Frascati, including the books of Cassiano del Pozzo, numbered 60,000 volumes. No book by a Jesuit was allowed on the shelves. It was bought by the Augustinians and is the basis of the Biblioteca Angelica in Rome. Johann Joachim Winckelmann was his librarian for a while.

FRANCE

Book collecting rides the tides of national prosperity, and France was the first successor of Italy as a natural habitat for great private libraries. French kings had been collectors in the 14th century, and in the 15th century Charles VIII (1470–1498) and Louis XII (1462–1515) brought books from Italy as part of booty of war. The latter set up the collection in Blois, where it was the ultimate basis of the Bibliothèque Nationale. François I was a collector in his own right and had a library in Fontainebleau. Henri II and Diane de Poitiers (herself the daughter of the bibliophilic Jean de Poitiers, seigneur de Valentois) had a magnificent library in the

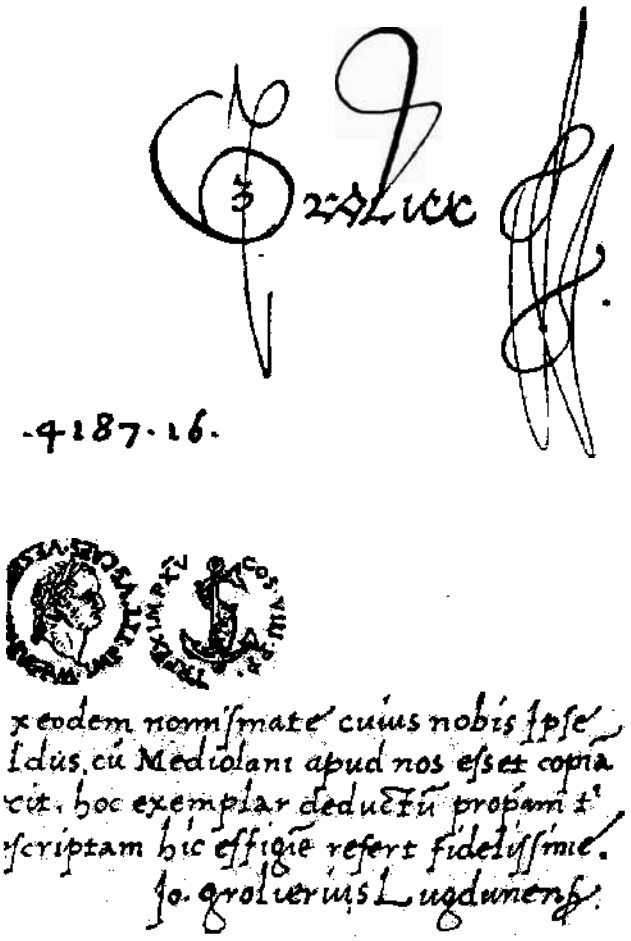

FIGURE 15. *Large and small signatures of Jean Grolier.*

château of Anet in which the initials D and H were intertwined on the bindings. Among several other *femmes bibliophiles* of the century, Catherine de' Medici was particularly distinguished. She brought to France from Urbino some Greek manuscripts purchased by Cosimo de' Medici; but her greatest coup was the confiscation of the library of Marshal Strozzi as "Medici" books, since they were once inherited by a nephew of Leo X (Medici).

The classic name in French bibliophily of the 16th century is that of Jean Grolier de Servin, vicomte d'Aguisi (1479–1565), by trade a diplomat and general paymaster of the French forces in Italy, by inclination a bibliophilic humanist, counting Aldus Manutius among his intimates (*33*). The handsome bindings on his books, of both Italian and French origin, have always been much sought-after and are generously inscribed "Grolierii et amicorum." (See Figures 15–17.) Most of his library went to his son-in-law Méry de Vic, the garde des sceaux, and from him to his son Dominique, bishop of Auch. The books were sold in 1676 in the Hôtel de Ville of Lyon, and this dispersal marked the beginning of one of the greatest bibliophilic hunts of all time.

FIGURE 16. *Grolier's arms on the dedication page of the Milan* Gaforius *of 1518.*

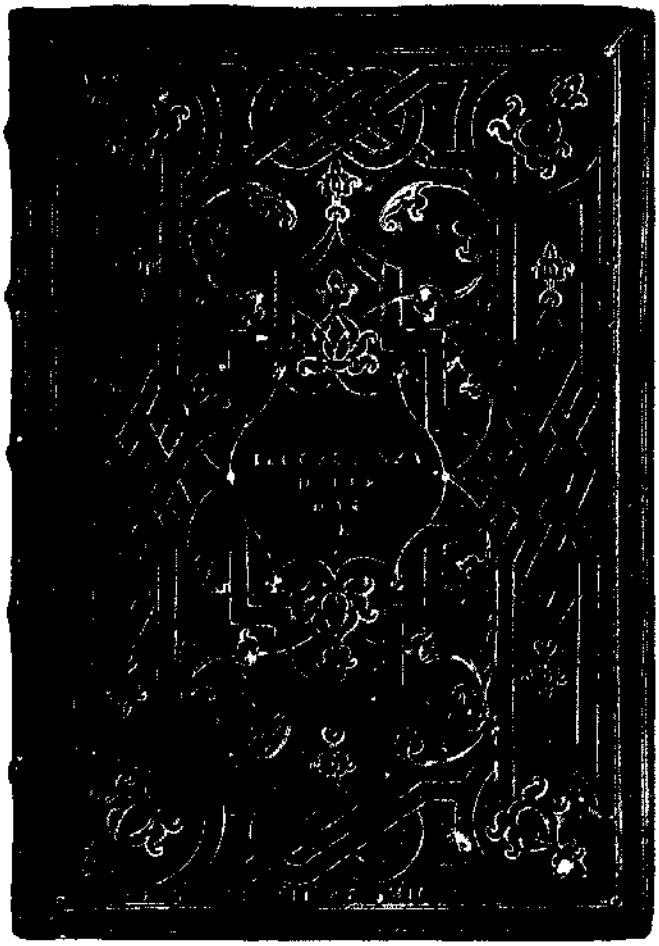

FIGURE 17. *Grolier binding.*

FIGURE 18. *Jacques Auguste de Thou.*

The other great name in French bibliophily of the 16th century is that of Jacques Auguste de Thou, baron de Meslay (1553–1617) (*34*). (See Figure 18.) He inherited a rich collection from his father, including gifts from Grolier. His 8,000 volumes were bound in simple covers with armorial bearings. (See Figures 19 and 20.) He wanted his books to be available to scholarship, and they were supervised

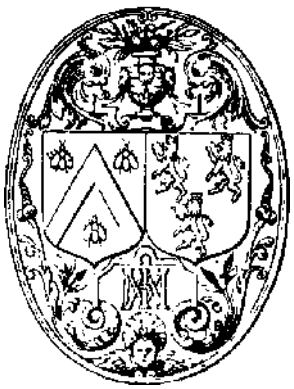

FIGURE 19. *Supralibros of Jacques Auguste de Thou and Marie de Brabançan.*

FIGURE 20. *Binding for Jacques Auguste de Thou.*

by Pierre (1582–1651; see Figure 21) and Jacques (1586–1656) Dupuy. The younger Jacques Auguste de Thou (1609–1677; see Figure 22) took over the collection in 1643 and nearly doubled the holdings, but had to send it to auction to satisfy his debts. The sale finally took place in 1680 to Jean-Jacques Charron, marquis de Menars (1644–1719), brother-in-law of Colbert. In 1706 he sold most of his books to Cardinal Armand Gaston Maximilien de Rohan, prince de Soubise (1674–1749), who, in turn, left the collection to his nephew Charles. The latter sent the collection to auction in 1788. Many were acquired by the Comte d'Artois, later Charles X (1757–1836). The collection was seized by the Republic in 1798, returned to the owner in 1816, and after 1830 deposited in the Bibliothèque de l'Arsenal.

The great majority of Renaissance collectors were princes of the church or state, but many humanists and scholars developed fine reference libraries. (And some of the great public figures were also scholars of repute, for example, de Thou, with his monumental contemporary history, 1604–1608, in four volumes.) A prototype of the scholar-collector was Nicolas Claude Fabri de Peiresc (1580–1637), archaeologist, philologist, and botanist as well as bibliophile (*35*). The annotations in his books reveal intensive use. His friend Pierre Gassendi (1592–1655), to whom he left 100 books of his choice, described the collection, pointing out the simple but

FIGURE 21. *Pierre Dupuy.*

tasteful bindings which carried the intertwined Greek letters NKO. The Peiresc collection was sold in 1647 by his heirs, and the majority found a home in the Collège de Navarre.

Book collecting became quite fashionable in the age of *roi soleil*, and P. Louis-Jacob de Saint-Charles (Dom Jacob) recorded the names of 110 collectors in Paris in 1644 (*36*). The greatest of these collectors was the Italian Cardinal Jules Mazarin (1602–1661) (*37*). He acquired books and works of art en masse, but he had to sell the collection in 1652 on the orders of Parlement. His librarian, Gabriel Naudé, author of the famous *Advis pour dresser une bibliothèque* (1627), sold Mazarin a good portion of his own extensive collection. In 1661 Mazarin presented his books to the Collège Mazarin to become the basis of the modern Bibliothèque Mazarine. Another great French statesman of the age, Jean Baptiste Colbert de Torcy (1619–1683), was also a passionate collector, acquiring entire libraries until he owned some 35,000 volumes in 1666 (*38*). These were inherited by other members of the family, but their 60,000 books were auctioned in 1728, while Louis XV acquired the 15,000 volumes of manuscripts for the Bibliothèque du Roi (Nationale). A third noteworthy collector of the age was Pierre Séguier, comte de Gien et duc de Villemor

FIGURE 22. *The younger Jacques Auguste de Thou.*

(1588–1672) (*39*). He owned some 20,000 books and 4,000 manuscripts, particularly Greek and oriental. After his death they went to the prince-bishop of Metz, Henri Charles de Cambout, duc de Coislin (1664–1732), who willed them to his abbey of Saint-Germain-des-Prés. A large part was burned in 1793, and the next year the remainder was deposited in the Bibliothèque Nationale.

Such collections as these, along with lesser ones (many of which would be the envy of any great modern library), laid the basis for the acquisitions of the great French private libraries assembled in the following centuries. Noteworthy as one of the first great libraries of the 18th century was that of Count Karl Heinrich von Hoym (1694–1736), Saxon minister to the French court (*40*). (See Figure 23.) Among his 100,000 volumes, auctioned in 1738 for 85,000 livres, were handsome early printed books on parchment and later works of the 17th and 18th centuries in bindings of Padeloup, Duseuil, and Boyet. The most famous collector of the century was Louis César de la Baume-le-Blanc, duc de la Vallière (1708–1780) (*41*). (See Figure 24.) In 1759 he bought the entire collection of Guyon de la Sardière, and later acquisitions included the libraries of the English consul in Livorno, Jackson, and of the Parisian silk dealer Bonnemet, with many handsome bindings by Derome le jeune. La Vallière sold duplicates at auction in 1767, 1772, and 1777, and his daughter, the duchess of Chatillon, disposed of the basic collection in

FIGURE 23. *Count Karl Heinrich von Hoym.*

FIGURE 24. *The duc de la Vallière.*

1785 at what was probably the most important sale held up to that time. Marc Antoine Voyer d'Argenson, marquis de Paulmy (1722–1787), governor of the Arsenal, bought 25,537 volumes, and in 1785 he sold his entire collection to the comte d'Artois (Charles X) to form the basic collection of the Bibliothèque de l'Arsenal.

Some 500 significant private libraries are known to have existed in Paris from 1750 to 1780 on the basis of published catalogs (*42*). A large proportion passed into public ownership during the Revolution. The auctions of the period 1789–1815 were characterized in many cases by outrageously high prices, a typical phenomenon of unstable political and economic periods when art objects, books, and similar tangibles are recklessly acquired for fear of instability of currency and securities rather than for a genuine devotion to scholarship and books. An exception was the auction of the library of Count MacCarthy-Reagh (1744–1811), whose remarkable collection included incunabula, fine bindings, books on parchment, and other typographical rarities. He refused £20,000 for his library from the Duke of Devonshire (infra); and the auction of 1815–1817 (fetching a total of 407,000 francs, the highest total before the Yemeniz auction of 1867) provided bargains for the purchasers of even a century and a half ago.

Bibliophily began to assume a formal status in the early 19th century with the organization of such groups as the Roxburghe Club (1812) and the Société de Bibliophiles François (1820), with their respective high priests, Reverend Thomas Frognall Dibdin (1776–1847) and Charles Nodier (1780–1844) (*43*). (See Figure 25.) The latter society was formed by several well-known French collectors, the mar-

FIGURE 25. *Charles Nodier.*

FIGURE 26. *René-Charles Guilbert de Pixérécourt.*

quis de Châteaugiron, René-Charles Guilbert de Pixérécourt (see Figure 26), Baron Walkenaer, de Malartie, Durand de Lançon, Bérard Vicomte de Morel de Vindé, and Comte Édouard de Chabrol. Nodier, like Dibdin, transferred the romantic spirit to book collecting, but he was far more knowledgeable, and his emphasis on *éditions originales* pointed a new way for collecting. He founded the ***Bulletin du bibliophile*** in 1834 with the antiquarian bookseller Josèphe Téchener (1802–1873). The fine bindings from Nodier's collection are still a prize whenever they occasionally turn up.

Among the most spectacular of the 19th-century French collectors was Baron Jérôme Frédéric Pichon (1812–1896) (*44*). (See Figure 27.) The Société des Bibliophiles, of which he was a guiding spirit and president from 1844 to 1894, held its meetings in his handsome library in the Hôtel Pimodan (built in 1657, occupied by the duc de Lauzun after 1682). He collected books, manuscripts, and prints, and had a noteworthy collection of books formerly owned by bibliophilic ladies. Part of his collection was sold in 1869, and the remaining 20,000 volumes and manuscripts in 1897 and 1898.

The founder of a great family of bibliophiles and bibliographers, Antoine-Augustin Renouard (1765–1853; see Figure 28), was the bibliographer of Aldus and the Étiennes (*45*). Perhaps his greatest service was to bridge the bibliophilic tradition of the *ancien régime* over the shambles of the Revolution into the modern tradition of

FIGURE 27. *Baron Jérôme Frédéric Pichon.*

FIGURE 28. *Antoine-Augustin Renouard.*

Parisian collecting established during the Restoration and Empire. As a publisher he put out handsome editions of Corneille, Voltaire, and others, still sought after today. He corresponded with Bodoni and leading scholars of Europe. In many respects he was the forerunner of the scholar-bookseller-collector of the 20th century, a species which has made perhaps the most important of all contributions to private collecting, both through personal activities and through advice to others.

A comparable personality was Jacques-Charles Brunet (1780–1876), bookseller and bibliographer as well as bibliophile, best known for his *Manuel du libraire et de l'amateur de livres*, originally published in three volumes in Paris in 1810, followed by later editions and supplements. It records some 40,000 titles of the scarcest and most valuable books. Like Renouard, he was a discriminating collector (*46*), and his great *Manuel*, although superseded today, was a bedside companion of *amateurs de livres* for a century.

Another transitional figure was Noël-François-Henri Huchet, comte de la Bedoyère (1782–1861) (*47*). An aristocrat of high lineage, a colonel of guards, and a personality who fitted into the first and second Empires as well as the Restoration, his ambition was to acquire the best works on world history. Of his 100,000 volumes, most in handsome morocco bindings—some contemporary, others from earlier centuries—some of the finest went to the Bibliothèque Impériale (Nationale) after his death, and the remainder were auctioned.

A golden age of French collecting was the latter part of the 19th century. The auctions in Salle Silvestre in the Rue des bons-enfants (acquired by Pierre Jannet in 1846) until 1870, and from then on in the Hôtel des Commissaires-priseurs in the Rue Drouot (Hôtel Drouot), were glittering affairs as significant as any other event in the capital of world society. Bogeng visualizes the "majores" (as the leading collectors were called) in the Salle Silvestre with the Comte de Lignerolles beckoning to his agents with imperceptible gestures; Guyot de Villeneuve waiting, monocle in eye, with suppressed anticipation for a choice piece; the courtly Baron de Lacarelle, whose aristocratic mien covered his profound bibliological expertise; the Comte de le Béraudière, even more skilled in matters bibliographical; the Marquis de Ganay, who specialized in armorial bindings; and the booksellers representing other collectors who were not present themselves.

The richest sale before the Franco–Prussian War in terms of the yield was that of the library of Nicolas Yemeniz (1783–1871), a Greek of Istanbul who made a fortune in the silk trade and collected until 1860 when the death of his wife drove him into seclusion, even from his books (*48*). The 725,000 francs fetched by the Yemeniz sale were excelled in the period 1878–1884 when the Didot sales took place after the death of Ambroise-Firmin Didot (1790–1877) (*49*). Beginning with François Didot (1689–1759) the family had amassed fabulous material on all aspects of the history of books. Henri-Eugène-Philippe-Louis d'Orléans, duc d'Aumale (1822–1897), son of Louis-Philippe, was the master of a magnificent collection, including that of Bernard Armand Cicongue (1790–1859), rich in bindings of le Gascon, Boyet, du Seuil, Padeloup, and Derome, sold to the duke in 1861 for 375,000 francs. It was housed partially in the family home in England at Twickenham, ultimately in the Château de Chantilly with handsome art collections which the duke

FIGURE 29. *The comte de Lignerolles.*

bequeathed to the Institut de France, of which he was a member (*50*). Raoul-Léonor L'homme-dieu du Tranchang, comte de Lignerolles (1816–1893; see Figure 29), a dedicated royalist who left the diplomatic service in order not to have to serve Napoleon III, was a prime bibliomaniac but one who pursued his avocation with great expertise. He had some 3,000 volumes bound for him by Trautz-Bauzonnet in his extensive collections, for which he refused 2,000,000 francs before the posthumous auction of 1894–1895 fetched only 1,136,407 francs (*51*). Jean-Joseph Sosthène, baron de la Roche Lacarelle (1816–1887) is a classic example of the discriminating bibliophile. After selling one library when he thought he was losing his sight, later restored, he assembled a choice collection of 540 items, sold in 1886 for 575,000 francs (*52*).

Baron James de Rothschild (1844–1881; see Figure 30), as a director of the great banking house, had the means to acquire nearly any of the 15th-, 16th-, and 17th-century books for which he yearned, and he could pick out choice items which appeared on the market with such significant provenances as Hoym, la Vallière, Henri III, Louis XII, Louis XIV, and Marie Antoinette. His library was willed to his son Henri, also a collector (*53*). Like the names of Morgan and Mellon, that of Rothschild is as overwhelming in bibliophily as in banking. In England Baron Ferdinand de Rothschild (1839–1898) assembled a remarkable collection of French 17th- and 18th-century books in his library at Waddesdon (Bucks), and passed it on to James Armand de Rothschild (*54*). And from the present Lord Rothschild we have *The Rothschild Library: A Catalogue of the Collection of Eighteenth-century Printed Books and Manuscripts Formed by Lord Rothschild*, privately printed in Cambridge, reprinted in 1969 (*55*).

The Goncourt brothers (Edmond, 1822–1896; and Jules, 1830–1870) achieved as much distinction as collectors as they did as critics (*56*). (See Figure 31.) Their holdings in 18th-century illustrated books, as well as for the period 1856–1896, were quite extensive; and for the last quarter of the 19th century their original editions, dedication copies, and collectors' editions (e.g., on Japan paper) approached completeness. (See Figure 32.) The collection was auctioned in 1896. Another im-

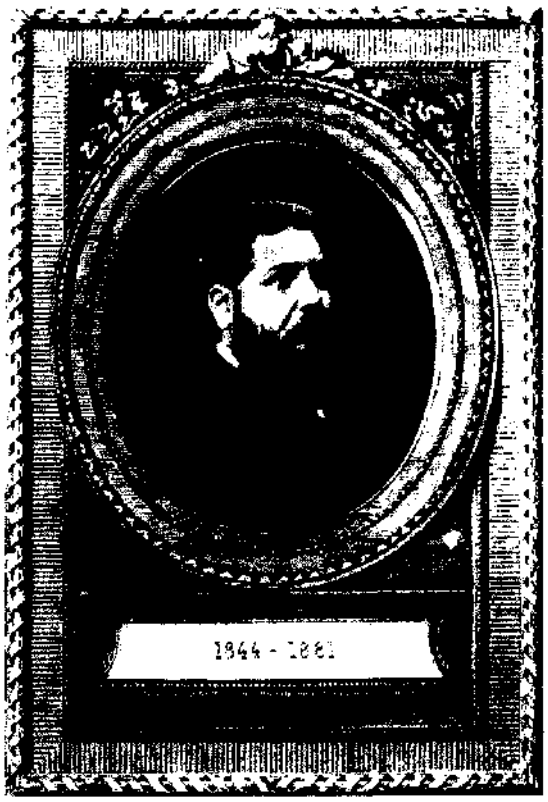

FIGURE 30. *Baron James de Rothschild.*

FIGURE 31. *Edmond and Jules de Goncourt.*

FIGURE 32. *Bookplate of the Goncourt brothers.*

portant collector of the period was Henri Béraldi (1849–1931), who collected prints and 18th-century illustrated books (*57*). Along with Octave Uzanne he developed the taste for modern bindings. In 1880 he and a group not active in the Société des Bibliophiles François founded the Société des Amis des Livres, with special emphasis on the fine book (*58*). A final important figure of the 19th century was Eugène Paillet (1829–1901). Although he sought collectors' books just as the older French bibliophiles, he, like Béraldi, laid heavy emphasis on the art of the book.

The private libraries of Renaissance Italy and of France from the Renaissance through the 19th century that have been mentioned here are mainly the very famous ones with rare and valuable books; the intensive, pinpoint collecting that is the formative element for scholarship has not been emphasized. Indeed, an encyclopedia would be necessary to mention all of the significant collections of this type assembled in the last five centuries. Those who had the foresight to pull together pamphlets of the Reformation and French Revolution, who were wise enough to assemble the work of Savonarola, Voltaire, or Goethe in their own times, or who documented the rise of science and industry in Europe, such collectors existed in France and other countries along with the wealthy and the powerful who could acquire incunabula on parchment and books from Corvinus and Grolier, and who could afford the services of the famous binders. Many are in the pages of the histories of libraries to which their collections went. However, this survey is restricted largely to the latter group.

ENGLAND

England had noble private collections in the 16th and 17th centuries, but in the 18th and 19th centuries when Britain was the richest and most powerful nation in the world, book collecting developed along parallel lines. Particularly significant was the fact that for over two centuries the sun never set on the collecting area for English bibliophiles; and today English libraries are perhaps the richest in the world

FIGURE 33. *The Duke of Bedford praying to St. George (from the Bedford Missal).*

in non-European books. The great English antiquarian and auction houses still offer a selection of the world's manuscripts and printed books unrivaled by those of any other country.

Noble and royal collectors flourished in England as on the continent in the late Middle Ages. John Plantagenet, first duke of Bedford (1389–1435), son of Henry IV, was a devotee of fine illuminated manuscripts, the most famous of which was the Bedford Hours (*58*). (See Figure 33.) Bedford's brother Humphrey, duke of Gloucester (1391–1447), was a comparably avid collector, and his gifts to Oxford University (some 600 Latin manuscripts between 1439 and 1446) are remembered today in the stately hall in Oxford known as Duke Humphrey's Library. The first Tudor, Henry VII (1485–1509), is sometimes considered the founder of the "Old Royal Library," which went to the British Museum in 1757.

The first noteworthy English book collector in the 16th century was Thomas Wotton (1521–1587), often called the English Grolier on account of his taste for fine bindings and the inscription "Thomae Wottoni et amicorum" (*59*). (See Figure 34.) His son Edward married the daughter of another important collector of the age, Sir William Pickering (1516–1575), thus combining the two libraries. (See Figure 35.) The books later passed to the ownership of the Chesterfields, whose library was auctioned at Sotheby's in 1920. Elizabeth I (1533–1603) was an aficionada for embroidered, silk, and satin bindings; and her favorite, Robert Dudley, earl of Leicester (1532–1588), had a considerable collection with his armorial bear-

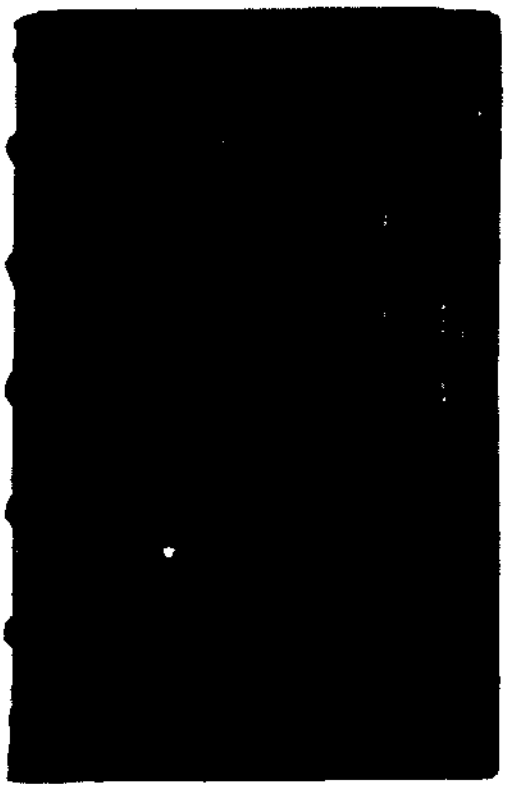

FIGURE 34. *Binding executed for Thomas Wotton.*

ings on the bindings. William Cecil, Lord Burghley (1520–1598), also had a substantial collection of printed books and manuscripts. Mathew Parker (1504–1575), archbishop of Canterbury, patron of printing and scholarship as well as a collector, was also a lover of fine bindings. His greatest service was to assemble books and manuscripts of dissolved religious houses, and he presented many to Corpus Christi College in Cambridge (*60*). Both James I (1566–1625) and his young son Henry, prince of Wales (1594–1612), were booklovers; and the latter pulled the old Plantagenet library back into the Royal Library and also acquired the noble collection of John Lumley (1534?–1609).

Sir Robert Bruce Cotton (1571–1631) was the first great collector of source material on English history (*61*). Although the Cottonian Library was rich in Greek and Hebrew manuscripts, the crown jewel was the collection of state papers in 958 volumes. Accused of selling state secrets to the Spanish, he forfeited his library, but it was later restored by Charles I—but only released after his death, to the collector's son, Sir Thomas. Sir John Cotton (d. 1702) gave the collection to the state in 1700. Unhappily 212 volumes were burned or badly damaged at a fire in the Ashburnham House in 1731, but in 1753 they found a final home in the British Museum.

The activities of Sir Thomas Bodley (1544–1613) in Oxford are part of that institution's library history, but he set the style for hundreds of other collectors, great and small, in subsequent centuries who have made the Bodleian the richest, even if not the largest, of the world's great university libraries. Among the first were that

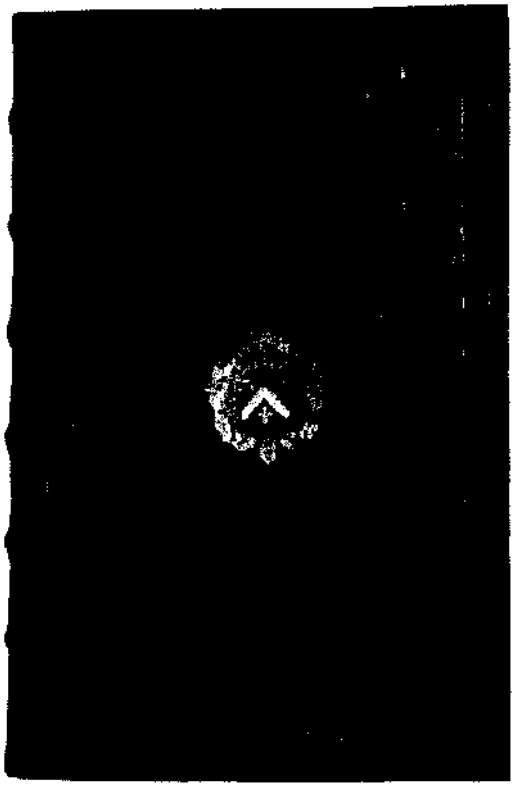

FIGURE 35. *Binding executed for Sir William Pickering.*

"incomparable pair of Brethren" to whom the First Folio of Shakespeare is dedicated: William Herbert, earl of Pembroke, who in 1629 presented 242 Greek manuscripts from the collection of Francesco Barocci (Barozzi) in Venice (*62*); and the fourth earl, Philipp, who donated the great Paris Polyglott Bible of 1645. Archbishop William Laud, Sir Kenelm Digby, and John Shelden are only a few other famous names among the 17th-century collectors who were also benefactors of the Bodleian.

Samuel Pepys (1632–1703) loved book collecting second only to gossip (*63*). His collection of some 3,000 volumes was rich in early English imprints, and the 1,800 ballads in five folio volumes are one of the great collections of this genre. The diaries are full of information about the books that Pepys read, borrowed, and bought, often with prices and the cost of bindings. The collection was sent to his nephew, who in turn presented the books to Magdalen College on the condition that they remain in the same condition and order in which Pepys had them. And there they remain today. But except for Cotton, no collector did more for English history than George Thomason (1600?–1666), a London bookseller who assembled some 23,000 pamphlets and broadsides in the critical years of 1640–1661 (*64*). They remained in his family until George III bought them in 1762 for £300 for the British Museum.

The first auction in England was conducted in 1676 by William Cooper, based on continental auctions in Holland and Germany (*65*). The first recorded English auc-

tion was that of Dr. Lazarus Seaman, which fetched some £700 for the 5,000-odd volumes. Since that time the English auctions, much like the French, Dutch, and German, have produced catalogs which are often major points of bibliographical reference. The inestimable value of the sale or auction catalog has not always been fully recognized, although the librarians of the Grolier Club in New York—which probably has the finest collection in the United States, if not in the world—have always seen this genre as basic reference tools as well as records of collecting. In 1971 Mansell began to publish the important series of reprints, "Sale Catalogues of Eminent Persons" under the editorship of the late A. N. L. Munby, and there has been in recent years a substantial increase in the reprinting of important sale catalogs by other publishers.

Numerically one of the largest collections ever assembled was that of Thomas Rawlinson (1681–1725), satirized as "Tom Folio" by Addison, called the "Leviathan of book collectors" by Dibdin. His some 200,000 volumes and 1,020 manuscripts, many of great value, were dispersed in a series of 16 auctions between 1721 and 1734. A more discriminating collector was John Bridges (1666–1724), whose 4,000-volume library was strong in English history and the best editions of classical authors, most of them handsomely bound (*66*). The collection was auctioned in 1726 for almost twice as much as the bulky Rawlinson library brought. The greatest collector of the Augustan period was Charles Spencer, third earl of Sunderland (1674–1722), statesman and patron of science as well as a booklover (*67*). (See Figure 36.) He assembled a remarkable library of some 20,000 printed books and

FIGURE 36. *Charles Spencer, third earl of Sunderland.*

some manuscripts. He sought incunabula (especially on parchment), Bibles, classical authors, and continental literature of the 15th and 16th centuries. In 1749 the collection was moved to Blenheim Palace, where it remained until 1881. It was auctioned in 1881–1883 for £56,581. It is of some interest to note that book-collecting physicians, men of a trade always dedicated to the printed work, began to flourish particularly in 18th-century England and have continued to do so until the present. In 1754–1755 the 30,000 volumes of Dr. Richard Mead (1673–1754) fetched £5,509; and in 1775 the 7,000 volumes of classical authors of Dr. Anthony Askew (1722–1774) came under the hammer.

The most important of all collecting physicians was Dr. Hans Sloane (1660–1753), who specified in his will that his collection of 50,000 printed books and 4,000 manuscripts as well as his botanical specimens should be offered to the British nation for £20,000 (*68*). The sum was raised by a lottery, and in 1754 the collection was moved to Montagu House and combined with the Old Royal Library and the Cotton and Harley collections. The Harleyan collection had been formed by Robert Harley, first earl of Oxford (1661–1724), and inherited by his son Edward (1689–1741), second earl (*69*). The books were sold by Edward's widow to a dealer, but the manuscripts were acquired for the nation for £10,000 and went to the British Museum. The subsequent enrichment of the British Museum has been due in no small measure to the industry of British private collectors; and the books and manuscripts associated with the names of Birch, Cracherode, Egerton, Arundel, Hargrave, Burney, George III, Croker, Banks, Grenville, Stowe, Huth, and Gladstone—to mention but a few—offer abundant evidence of the importance of private collecting for institutional development. (See Figure 37.)

Although Dr. Johnson was the son of a Lichfield bookseller, he used his books and lent them out rather than massing them for show. The *Catalogue of the Valuable Library of Books, of the late Learned Samuel Johnson, Esq., Ll.D., Deceased* represented a collection that fetched only £247 9s at Christie's in Pall Mall on February 16, 1785 (although it would bring in several thousand times that sum if reassembled for sale today!). The greatest collector of the age was George III, unlike his oafish father and his indifferent son; and the great collection he assembled was saved for the British Museum (where it is now a crown jewel) from the greed of George IV, who wanted to sell it to the czar for £180,000. Among all the private libraries of 18th-century England that of Horace Walpole, fourth earl of Oxford (1717–1797), was among the most distinguished. At Strawberry Hill near Twickenham he assembled a remarkable collection of 15,000 volumes, and it was kept intact until it was auctioned for £3,900 (*70*).

Perhaps the noblest library of the 18th century was that of John Ker, third duke of Roxburghe (1740–1804), based on an inheritance from his father and grandfather and greatly expanded by him (*71*). It was rich in important incunabula, French chivalric romances, older English and Italian literature, Shakespeare, and the English drama, many in handsome bindings with an armorial stamp. The auction of June 17, 1812, was a sensation, with one of the classic auction room battles between the Marquis of Blandford and Lord Spencer for the Valdarfer Boccaccio (£2,260), with the Duke of Devonshire as another major competitor. On the same

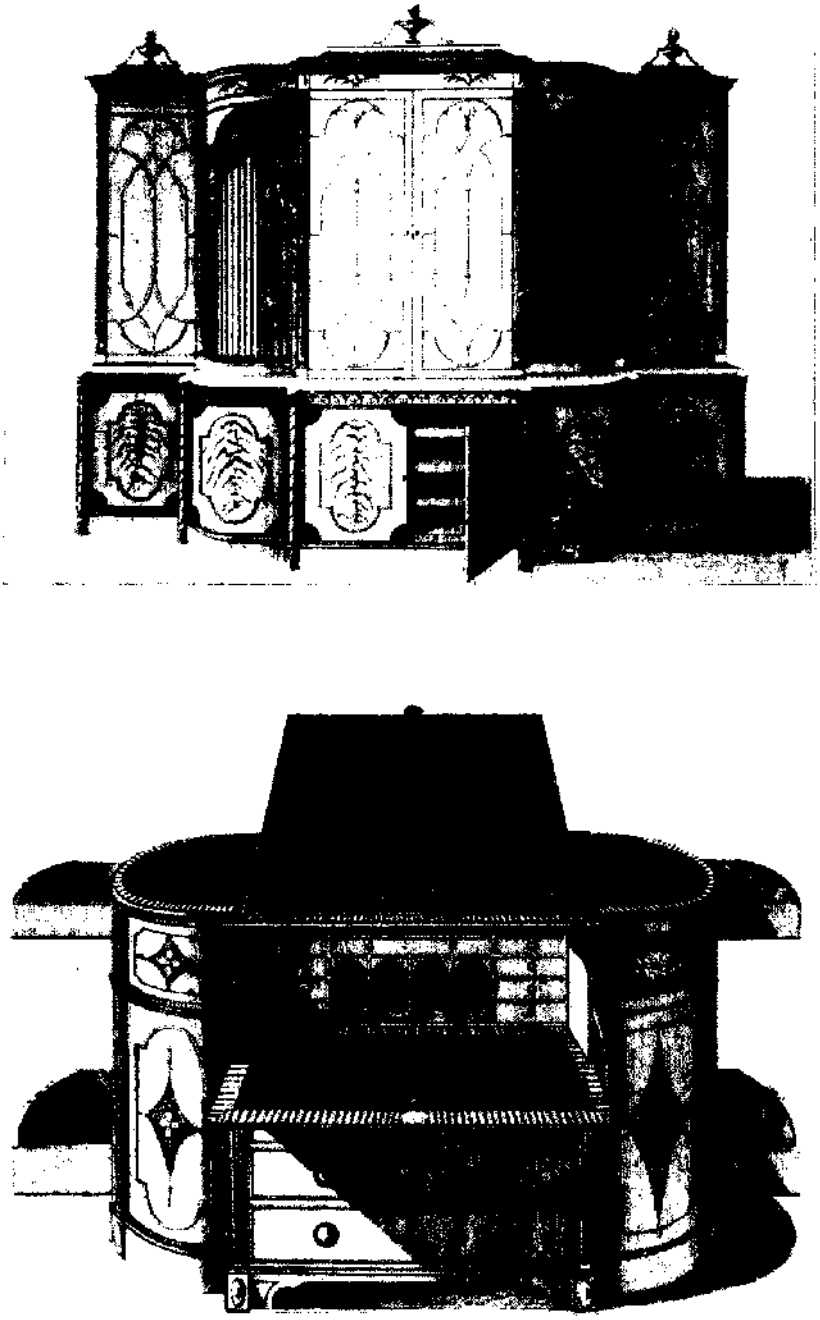

FIGURE 37. *Furniture designed by Thomas Sheraton for a late 18th-century private library (from* The Cabinet-Maker, *London, 1793–94).*

evening the participants gathered in St. Albans' Tavern to form the Roxburghe Club, the most distinguished of all bibliophilic societies.

Nineteenth-century English collecting reached a height that corresponded to the prosperity of the Empire. George Spencer, fifth duke of Marlborough, marquis of Blandford (1766–1844), already had a defective copy of the Valdarfer Boccaccio

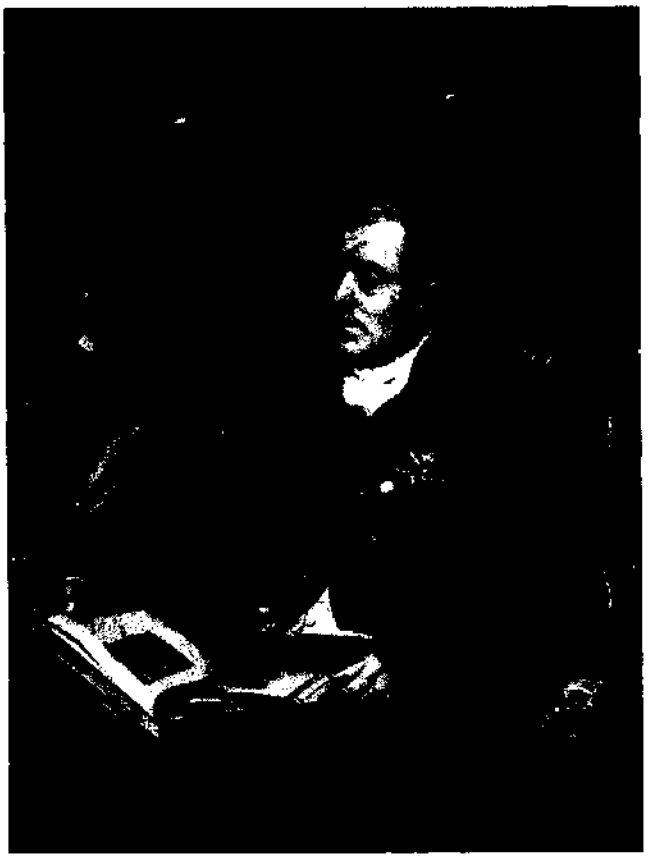

FIGURE 38. *George John, second earl of Spencer.*

before he paid the highest price ever fetched by a single book to that date (72). Along with his prize at the Roxburghe auction, the other famous piece in his collection was the Bedford Missal, a magnificent book presented to Henry VI by the duke of Bedford in 1430. In 1819 Blandford allowed his library to be auctioned, with 4,701 lots fetching £14,482. George John, second earl of Spencer (1758–1834; see Figure 38), retired from state business in 1807 to spend his time in his library at Althorp (73). One of his early purchases was the collection of the Austrian diplomat Emerich Alexis Count Reviczky (or de Revisnye; 1737–1793) in 1790, consisting of editions of classical authors in prime condition and scarce German imprints. From the Lincoln Chapter he bought Caxtons (ultimately accumulating 56 in all). He made other purchases en bloc, viz., from the libraries of Michael Honywood, (d. ca. 1681), Thomas Johnes of Hafod (ca. 1748–ca. 1816), Stanesby Alchorne (d. ca. 1800), and Cassano Serra. *Inter multa alia* he owned 108 books on parchment, some of the finest Bibles of all time, a good Elzevir collection (he was far from immune to the Elzeviromania that was a dominant element in 19th-century collecting), and one of the best of all Aldus collections. His librarian, T. F. Dibdin (see Figures 39 and 40), described the Petrarch and Dante editions and other scarce and valuable items in his *Book Rarities* (1811). The collection remained at Althorp until Mrs. Enriqueta A. Rylands bought it for £250,000 in 1892 and made it the en-

FIGURE 39. *Silhouette of T. F. Dibdin.*

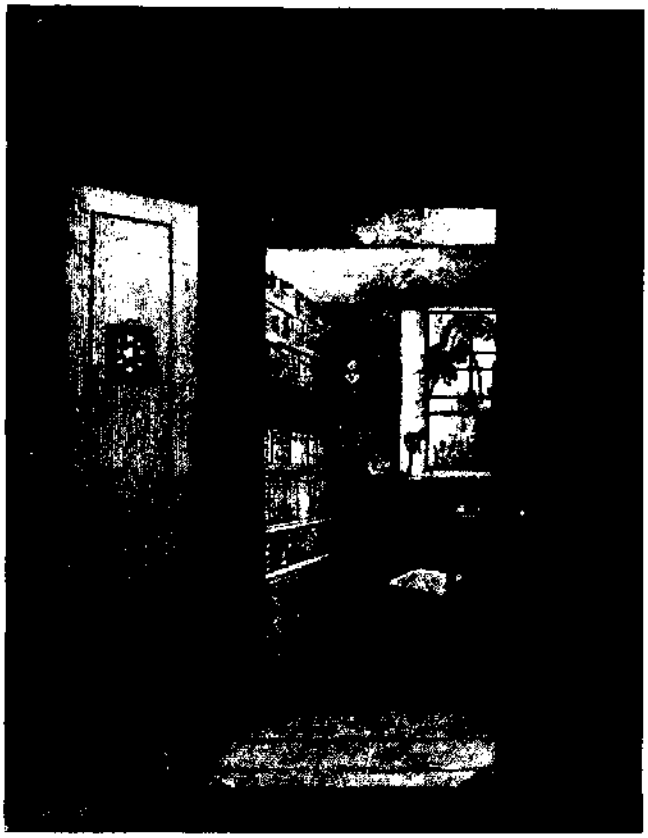

FIGURE 40. *T. F. Dibdin's study.*

duringly solid basis for the John Rylands Library in Manchester (founded 1899). In 1900 she added to the library some 6,000 illuminated manuscripts, papyri, and French and English autographs bought for £200,000 from the great collection of Alexander William, 25th earl of Crawford (1812–1880) at Haigh Hall in Lancashire (*74*). The third member of the great triumvirate at the Roxburghe auction was William Spencer Cavendish, sixth duke of Devonshire (1790–1858) (*75*). Heir to a fine library established by William, second duke of Devonshire (1672–1729), he bought heavily at the Roxburghe auction. He also acquired the collection of first editions and incunabula of Thomas Dampier, bishop of Rochester and Ely (1748–1812), and the English drama collection of the famous actor John Philip Kemble (1757–1823) (*76*). An auction of 1817 brought about £16,000, and in 1914 the Caxtons and the Kemble play collection were bought for Henry E. Huntington for £140,000.

A singular character as a writer, personality, and collector was the wealthy "caliph," William Beckford (1759–1844) (*77*). He restored Fonthill Abbey in Wiltshire and housed there a great collection of works of art and 20,000 choice books, emphasizing artistic merit rather than significance of the imprint, which he had to sell in 1822 for £330,000 to John Farquhar. In turn, the latter sent them to auction the next year. The remaining material, still a princely collection, was set up at a new residence in Lansdowne Terrace, Bath. It was inherited by his son-in-law Alexander Hamilton, tenth duke of Hamilton (1767–1852) (*78*). The eleventh duke, William (1811–1863), enriched it substantially, and before it went to auction in the 1880s most of the best manuscripts were sold for £70,000 to the Königliche Preussische Bibliothek (now divided between the Deutsche Staatsbibliothek and Preussischer Kulturbesitz) and the Kunstgewerbemuseum in Berlin. A few more went to the British Museum, 91 to auction in 1889, and the purple parchment Evangeliary presented by Henry VIII to Pope Leo X (who granted him the title of *Defensor fidei*) to Theodore Irwin of Oswego and from him to J. P. Morgan.

The libraries of several other major English writers are in the Mansell collection of "Sales Catalogues of Eminent Persons," Volumes 1, 2, 3, 5, 7, and 9, including that of Sir Walter Scott (1771–1832) in the first volume. Scott's fine collection of Scottish history and witchcraft was lost with his other property when his publisher, Bannatyne in Edinburgh, went bankrupt. Scott also deserves a special role in the history of bibliophily as a founder of the Bannatyne Club in 1822, the Scottish counterpart of the Roxburghe Club.

Scott referred to Richard Heber (1773–1833)—M.P. and founder of the Athenaeum Club (1824), a society of persons of literary, scientific, and artistic interests, including some outstanding collectors—as "Heber the Magnificent" (*79*). In the first three decades of the century he would buy at all auctions and also entire libraries, not hesitating to acquire multiple copies. Upon his death he had eight houses full of books, some 150,000 in all—in Westminster, Pimlico, Hodnet, Oxford, Paris, Ghent, Brussels, and Antwerp—with emphasis on literature and history, particularly early Italian and Spanish, later Latin, and older English works. His bibliomania was almost matched by that of Antoine Marie Henri Boulard (1754–1825), who had only five houses full of books in Paris—books he is said never to have seen.

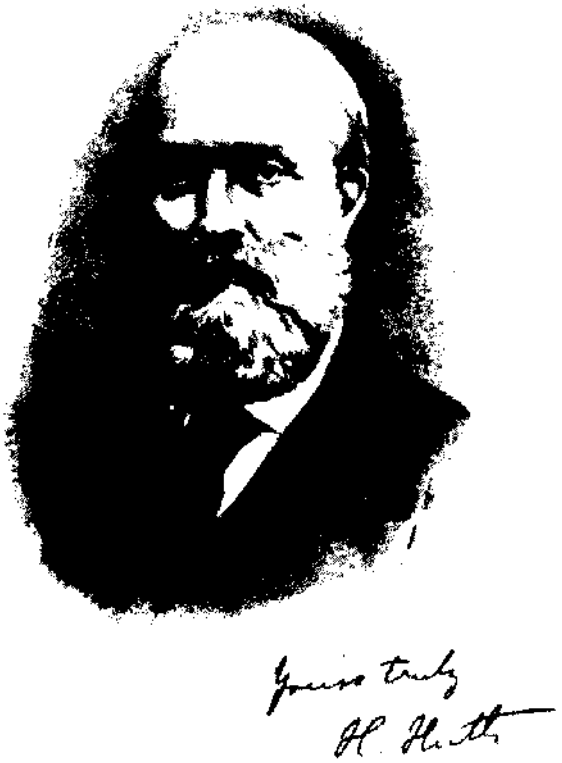

FIGURE 41. *Henry Huth.*

The Heber sales helped to enrich many significant private libraries of the 19th century, for example, those of William Henry Miller (1789–1848), with his comprehensive Bibliotheca Poetica Anglicana at Britwell Court, Bucks (*80*); Henry Perkins (1778–1855) of Springfield, Surrey, whose vellum B-42 is now in the Huntington, the paper copy in the Morgan; George Daniel (1789–1864), whose first folio of Shakespeare, reputedly the finest in existence, is now in the Folger; Henry Huth (1815–1878); and, of course, Sir Thomas Philipps (1792–1872).

Henry Huth (see Figure 41), son of a German father and a Spanish mother, and a leading banker (*81*), began to collect in 1855, acquiring much from the auctions of Perkins and Sir Mark Masterman Sykes (1771–1823), the latter strong in incunabula, printed books on vellum, and Elizabethan literature. He owned the Mainz Bible of 1462 on paper as well as on vellum, the Icelandic Hólar Bible of 1584, the Coverdale Bible of 1535, Columbus and Vespucci letters, and the best older Americana and English poetry and drama, many bound by Francis Bedford. His son Alfred Henry Huth (1850–1910) expanded the collection substantially. At his death the British Museum had the choice of 50 of the best items in the library, according to its wishes, and the rest went to the important Sotheby auctions of 1911–1912, mainly to the United States (e.g., the Shakespeare quartos and folios bought

by Alexander S. Cochran of New York for £30,000 and presented to the Elizabethan Club at Yale).

Perhaps the first great name that strikes the modern student of the history of private libraries is that of Sir Thomas Philipps (*82*), for Sotheby's is still industriously auctioning the remnants of his enormous and fabulously rich library. He began to collect in the 1820s, with Cotton and Harley as his models. In 1824 he acquired about three-fourths of the great manuscript collection assembled by Gerard Meerman (1722–1771), offered to the Dutch Royal Library by his son Johan (d. 1815) but refused (*83*). Subsequently his acquisitions of books and manuscripts increased almost geometrically. Some of the imprints of his Middle Hill Press in Broadway, including various catalogs, are rarities themselves today. Sir Thomas's eccentricities (no Roman Catholic could enter his library) and family problems are beyond the scope of these notes, but they had their effect on his collecting. The auctions which began in 1886, and are still going on, have yielded millions.

Bertram, fourth earl of Ashburnham (1797–1878), was the master of one of the greatest manuscript collections of all time. It was divided into the Stowe Collection, 996 pieces bought at the Buckingham auction of 1849; 1,923 pieces in the Libri collection stolen from French libraries and purchased from the notorious biblioklept in 1847 for £8,000; and the 702 pieces with at least 50 of questionable provenance (Bibliothèque Royale) bought from Joseph Barrois in 1848 for £6,000. Among the books were the B-42 on parchment and paper, Caxtons, and Shakespeare folios. The Stowe manuscripts were acquired after Ashburnham's death by the government for £30,000 and divided between the British Museum and the Irish Academy. In 1897 and 1898 the remainder was auctioned. The Lindau Gospels and the Caxtons are in the Morgan Library.

One of the many significant aspects of British collecting is that the private libraries of the 16th through the early 19th centuries were important for the development of the British Museum, the Rylands, and the two great university libraries; while those of the later 19th and early 20th centuries (or, at least, those dispersed in this period) were of significance in the history of great American collections such as the Morgan, the Folger, and the Huntington. Private libraries still abound in England, albeit none today on the scale of, say, the Philipps or the Spencer collections. The *Book Collector* is a particularly useful journal for the student of British private libraries of our time.

THE GERMANIES

The German is as much of a collector as the Englishman is a shopkeeper, but the latter trade made England the world's richest country for two centuries and laid the foundations of fortunes that enabled their masters to assemble libraries which could be acquired only by kings and princes in central Europe. A tabulation of dealers' catalogs and prospectuses passing over this writer's desk in the past 5 years revealed almost 40% of the highly specialized collections offered for sale coming from German-speaking countries, the Low Countries, and Scandinavia; some 30% from the United States (with its substantial German and Scandinavian ethnic

FIGURE 42. *K.-K. Hofbibliothek, Vienna, about 1850.*

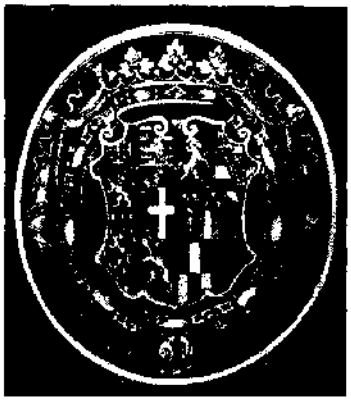

FIGURE 43. *Supralibros of Prince Eugene of Savoy.*

strains); about 10% from Great Britain; and most of the others from France and Italy. The pinpoint collection which can be acquired by industry and acumen with small outlay seems to flourish best in northern Europe and North America.

One of the earliest important humanistic libraries was that of Konrad Peutinger (1465–1547) (*84*). His collection was strong in German antiquities, and he also edited Latin inscriptions. One of his heirs gave the library to the Society of Jesus in Augsburg. The most important single item he owned was the "Tabula Peutingeriana," a 7-m × 34-cm 12th-century map of Roman military highways discovered by Conrad Celtis in Worms and supposed to have been edited by Peutinger. Prince Eugene of Savoy (1663–1736), whose achievements in assembling a great library in his Castle Belevedere in Vienna rivaled his military record, owned it later, and it went with his some 15,000 books and 237 manuscripts to the K.-K. Hofbibliothek (Österreichische Nationalbibliothek). (See Figures 42 and 43.)

The K.-K. Hofbibliothek shares with the Bibliothèque Nationale (Royale, Impériale) of Paris the distinction of being the first great national library in point of time (*85*). From the time of Emperor Friedrich III (1440–1493), whose manuscripts were admired by Aeneas Sylvius Piccolomini (later Pius II), through five centuries, this library has been the beneficiary of the fine bibliophilic traditions of Vienna and the Hapsburgs and of their librarians in particular. The personal physician of Ferdinand I and also his librarian, Wolfgang Lazius (1504–1555), had a collection that went into the Hofbibliothek in 1608. The collections of Johann Alexander Brassicanus (1500–1539), the bishop of Vienna, Johannes Faber or Heigerlin (1478–1541), Johannes Dernschwamm von Hradiczin, A. von Busbecke (240 manuscripts brought back from Istanbul), and Johannes Sambucus or Sambuky (1531–1583) were 16th-century acquisitions of the Hofbibliothek which were to be followed by many others of comparable significance in subsequent centuries.

Elector August of Saxony (1526–1586) was called the German Grolier on account of his splendid library in Castle Annaberg near Torgau, containing some 4,000 volumes (*86*). Jakob Krause (1526?–1585), the greatest master of Renaissance binding in Germany, produced many of the most beautiful bindings in the

FIGURE 44. *Zacharias Conrad von Uffenbach.*

electoral library. After the death of August it was moved to Dresden and became the basis for the Sächsische Landesbibliothek; but a large proportion, including most of the best Krause bindings, were destroyed or irreparably damaged when the USAF undertook strategic bombing of Dresden while the Red Army was drinking beer in the suburbs of the city.

Other libraries had their origins in the bibliophilic inclinations of princes and nobles, but private collecting on a major scale was gravely inhibited by the disturbances accompanying Reformation, Counter-Reformation, and the Thirty Years' War. A noteworthy exception may be found in the Fugger family of Augsburg (*87*). Raimund von Fugger (1489–1535), father of Johann Jakob (1516–1575) and Ulrich (1526–1584), owned some 15,000 volumes which were acquired for the K.-K. Hofbibliothek in 1663 for 15,000 gulden. Johann Jakob gathered a fine library into which he incorporated much of Hartmann Schedel's collection (supra). In 1571 Albrecht V of Bavaria acquired the books and made them the basis for the Hof- und Staatsbibliothek which had been founded in Munich in 1558 (*88*). Ulrich, also a zealous bibliophile, acquired, among much else, the library of Achilles Gasparus. In 1584 his collection went to the Kurfürstliche Pfälzische Bibliothek in Heidelberg, which Tilly seized in 1622 and presented to Gregory XV. In 1816 a group of 822 manuscripts was returned. Markus von Fugger (1529–1597), son of Anton von

FIGURE 45. *Count Heinrich von Bünau.*

Fugger (1493–1560), was another collector, whose collection went mainly to the Bavarian State Library, although part was kept together and auctioned in 1933 by Karl und Faber of Munich.

No comparable private libraries may be identified until the time of Zacharias Conrad von Uffenbach (1683–1734; see Figure 44), scion of a prosperous Frankfurt patrician family (*89*). He owned some 12,000 titles, carefully selected on the basis of desiderata lists, and about 35,000 letters from the 16th and 17th centuries. The latter were acquired in 1730 by Johann Christian Wolf of Hamburg and presented by him to the Hamburg Stadtbibliothek. Uffenbach's *Merkwürdige Reise durch Niedersachsen, Holland und England* (1753–1754, 3 vols.) is an enduringly valuable source for the history of private and public libraries.

Although the Hoym library belongs to the history of French bibliophily, two other Saxon noblemen built distinguished collections. Count Heinrich von Bünau (see Figure 45), historian as well as a statesman, owned 42,139 books and 149 manuscripts which were cataloged by his librarian J. M. Francke (*90*). He insisted on superior copies and was often guilty of the bibliographical sin of combining gatherings from different copies. Count Heinrich von Brühl (1700–1763; see Figures 46 and 47) strove to imitate his compatriot, but his collection, largely assembled by his secretary, Karl Heinrich von Heinecken (1706–1791; himself a scholar and

FIGURE 46. *Count Heinrich von Brühl.*

collector) fell short of the Bunavian in quality (*91*). It was acquired by Prince Xavier of Saxony and incorporated into the Royal Library in Dresden.

Frederick the Great (1712–1786) was an eager collector from early youth (*92*). His father, who disapproved of his son's belletristic interests, discovered at least two libraries which the young prince had assembled and ordered them to be sold. While on the throne Frederick built six different libraries, in which the bindings had a letter on the cover to designate their location, viz., Potsdam (P), Sanssouci (V), Neues Palais in Potsdam (S), the Berlin Castle (B), the Charlottenberg Castle (no designation, not used after 1747), and in the Breslau Castle (B and Br). The libraries were heavily laden with ancient classics and French literature. He preferred octavos and sometimes rejected folios and turned them over to the Königliche Preussische Bibliothek.

The libraries of German scholars have always been important, and one of the first significant ones was that of Johann Christoph Gottsched (1700–1766), of which the most valuable segment were the 4,750 letters which went to the University of Leipzig library. His bluestocking wife owned many fine bindings (*93*). In the 19th century many solid, practical collections of German scholars were to be acquired by the nascent American university libraries as a solid basis for collections. A noteworthy example is the Leopold von Ranke collection at Syracuse University. It is also pertinent to note that a basic source for the study of German bibliography and collecting is the Archer Taylor library now at the University of Georgia.

Among the main opponents of G. E. Lessing's liberalism was Johann Melchior

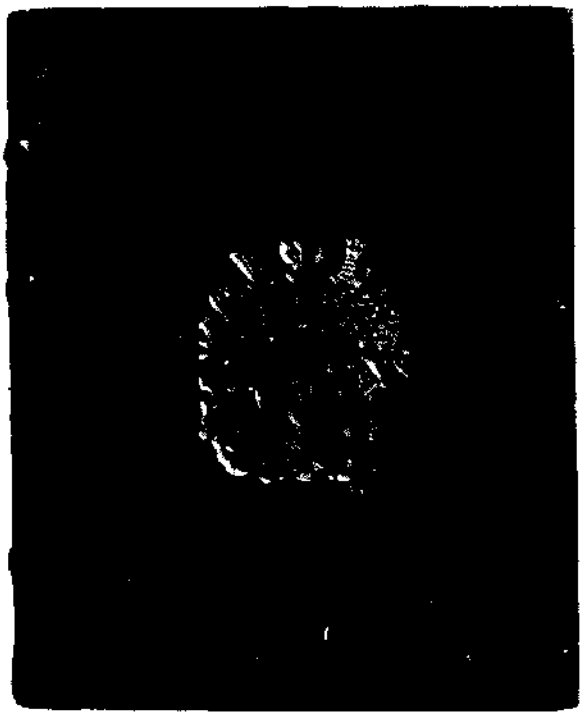

FIGURE 47. *Binding executed for Count Heinrich von Brühl.*

Goeze (1717–1786), a Hamburg minister who had an important collection of Bibles and published a *Versuch einer Historie der gedruckten niedersächsischen Bibeln* in 1775 and a *Verzeichnis seiner Sammlung seltener und merkwürdiger Bibeln* in 1777. Another important Bible collection was that of Sigmund Jakob Baumgarten (1706–1757), professor of theology in Halle (*94*). Duke Karl Eugen of Württemberg (1728–1794) sought out other Bible collections for his new Landesbibliothek (founded 1765 in Ludwigsburg, moved to Stuttgart in 1777), and he found them in the possession of the great bibliographer Georg Wolfgang Panzer (1729–1804) and the Copenhagen pastor Josias Lorck (*95*). Several other important private collections also went into the Württembergische Landesbibliothek in the 18th century, notably Colonel Nicolai's military books, the library of the abbé de Rulle (incunbula, Dante, and Petrarch), and Friedrich W. Fromann's collection on heraldry.

Christian Wilhelm Büttner (1716–1801), professor in Göttingen and later in Jena, was admired by Goethe and owned an important collection which went to the University of Jena Library (*96*). And at this point it would be a sin of omission not to mention the collection of Goethe's aristocratic maternal grandfather, Johann Wolfgang Textor (1693–1771), whose library was accessible to his eager young grandson, who wrote: "Seine Bibliothek enthielt ausser juristischen Werken nur die ersten Reisebeschreibungen, Seefahrten und Länderentdeckungen." Goethe himself was no bibliophile in the strict sense, but books flowed to him from all parts of the world. Part of his collection was auctioned in Weimar in 1799. In 1797 Goethe himself took over the supervision of the Grand Ducal Library in Weimar. The best library

FIGURE 48. *Eduard Grisebach.*

owned by the German classical authors was that of Christoph Martin Wieland (1733–1813), auctioned in 1815 (*97*). The library of Johann Gottfried Herder (1744–1803) was also dispersed at auction. Schiller's personal collection ended ultimately in two different places, Hamburg and Weimar. Carl Robert Lessing (1827–1911) established a collection of works by, about, and belonging to Gotthold Ephraim Lessing (1729–1781), now in the Lessing Museum in Berlin.

Goethe collections have flourished as vigorously as those of Shakespeare. Among the first were those of Johann Friedrich Heinrich (Fritz) Schlosser (1780–1852), nephew of Goethe's friend and brother-in-law Georg Schlosser, and of Goethe's own great nephew Alfred Nicolovius, whose catalog (1826) is the first Goethe bibliography. The collection of the publisher Salomon Hirzel went to the University of Leipzig Library, and that of William A. Speck is at Yale.

Goethe and Schiller generally form a major segment of most German collections in the field of literature. Edward Dorer-Egloff (1807–1864), Swiss *Landammann* and bibliophile, was the master of a significant collection in which the two great classical authors, as well as J. M. Lenz, were well represented (*98*). T. O. Weigel auctioned it in Leipzig in 1868. On the other hand, the interests of the romanticists ranged far afield. Thus the library of Clemens Brentano (1778–1842) included not only general German literature but also Germanic antiquities, chapbooks, and even

exorcism and Cabbala (*99*). Another collector of the Romantic period whose library abounded in German literature—popular, learned, and semilearned—of the 16th and 17th centuries was Karl Hartwig Gregor, freiherr von Meusebach (1781–1847) (*100*). His library was rich in chapbooks, folksong collections, facetiae, games, costumes, food and drink, and a great Fischart collection. The autographs went to the Königliche Preussische Bibliothek in 1849 for 40,700 taler, and duplicates were auctioned in 1855–1856. August Wilhelm von Schlegel (1767–1845) and Ludwig Tieck (1773–1853) ranked with Brentano as Romantic authors who had distinguished libraries. The former had a fine collection of poetry of all ages and all languages, of which 1,600 were auctioned in Bonn in 1845, while his rich collection of manuscripts and letters went to the Royal Library in Dresden (*101*). The latter owned 36,000 volumes which he had to sell to pay his brother's debts, with the Spanish drama collection being acquired for the Königlische Preussische Bibliothek by Friedrich Wilhelm IV (*102*). Graf Yorck gave Tieck the funds to acquire a new collection which later passed into the Wartenburg family library in Klein-Öls.

Joseph Freiherr von Lassberg (1770–1855) owned some 11,000 books and 273 manuscripts (among them the Nibelungen Manuscript C, acquired during the Congress of Vienna for 250 ducats and published first in his famous *Liedersaal*). His collection was bought after his death for the Fürstenbergische Bibliothek in Donaueschingen. Arthur Schopenhauer (1788–1860) built a highly selective collection, obviously heavily used from the numerous marginalia. It was auctioned by Baer in 1866, but it was reassembled and passed to the Schopenhauer-Archiv in the Stadtbibliothek in Frankfurt, while the Schopenhauer manuscripts are in the Deutsche Staatsbibliothek (*103*). Another collector of the period in the rich old city of Frankfurt am Main was Johann Georg Burkhard Franz Kloss (1787–1854), physician and historian of freemasonry, who gathered a significant collection, including, among others, the library of Bishop Johannes von Dalberg of Worms (d. 1503). It was sold by Sotheby in 1835 (4,682 lots for £2,260), and subsequently he assembled a masonic collection which was sent to the Grand Lodge in the Hague. Friedrich Karl von Savigny (1779–1861), the great authority on Roman law at the University of Berlin, left his great collection on civil and canon law to the Königliche Preussische Bibliothek (*104*).

Among the first of the distinguished modern bibliophiles in German-speaking countries was Eduard Grisebach (1845–1906; see Figures 48–51), poet and Ger-

FIGURE 49. *Eduard Grisebach's bookplate.*

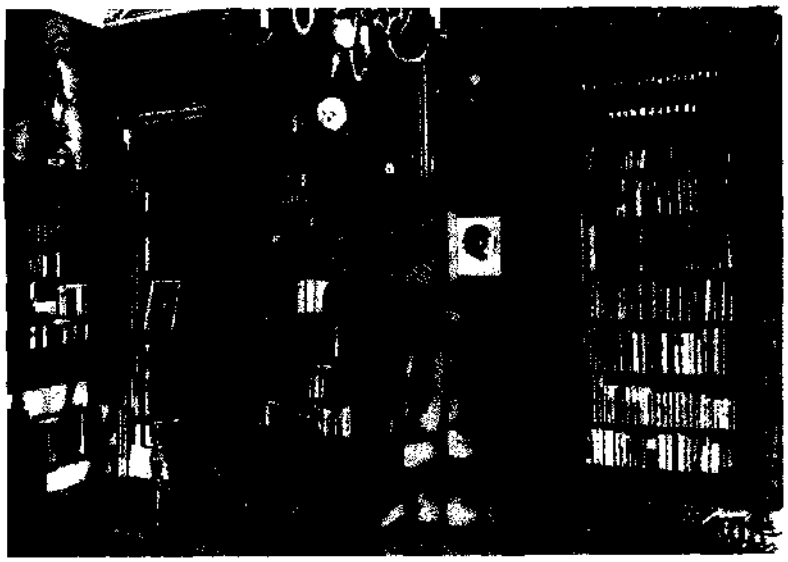

FIGURE 50. *Eduard Grisebach's study.*

manist as well as collector, who assembled a distinguished collection of the best editions of world literature (*105*), which ultimately went to W. von Brüning. Martin Breslauer handled the sale of his autograph collection in 1906. The high priest of modern bibliophily in Germany, a latter-day Nodier or Dibdin who arrived when his country had attained the material prosperity of France and England, was Fedor von Zobeltitz (1857–1934) (*106*). He established the *Zeitschrift für Bücherfreunde* in 1897 and edited it for a dozen years; and in 1898 he founded the Gesellschaft der Bibliophilen and was its president for the remainder of his life. His own collection of belletristic literature of the last three centuries was a rich source for his "Neudrucke literarischer Seltenheiten." His mantle fell on the shoulders of Gustav Adolf Erich Bogeng as the most prolific author on matters bibliophilic in the Germanies.

The bibliophilic inclinations of the Hapsburgs and their concern for the develop-

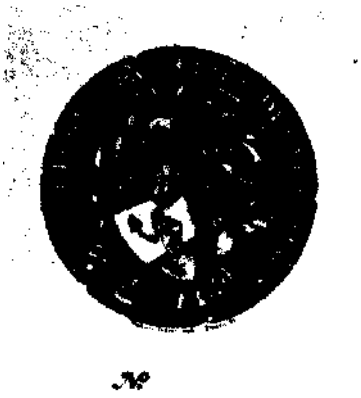

FIGURE 51. *Eduard Grisebach's bookplate.*

ment of their Hofbibliothek have already been noted. In part due to the proximity of the old Danube empire to Islamic jurisdictions, the oriental interests of Vienna (and consequently of the collections) have been significant. Joseph Freiherr von Hammer-Purgstall (1774–1856) had a collection of some 600 oriental manuscripts which went to the Hofbibliothek, while the University of Leipzig Library acquired his printed books in 1858 (*107*). Another oriental collection of comparable value was that of Heinrich Friedrich von Diez (1781–1817), friend of Goethe and a leading orientalist of his time, who assembled a library of 17,000 printed books and 835 manuscripts which he willed to the Königliche Preussische Bibliothek (*108*).

OTHER EUROPEAN COUNTRIES

The first great bibliophile of Spain was Don Fernando Cólon (1488–1539), son of the admiral (*109*). In his travels through Europe in 1510–1537 he assembled a library of some 12,000 volumes which he presented to the Dominican monastery of San Pablo in Seville, but it was neglected and exposed to biblioklepts. Don Joachim Gómez de la Cortina, marqués de Morante (1808–1868), had a collection of more than 120,000 volumes (including duplicates) covering all fields and bound by Duru, Capet, and Bauzonnet of Paris, and by Schaefer and Gil of Madrid. The six auctions of 1872–1879 yielded much less than the original cost of the books (*110*). Supralibros with "J. Gómez de la Cortina et amicorum" still appear frequently on the antiquarian market. Today book collecting thrives particularly in Catalonia around the core of the Sociedad de Bibliófilos de Barcelona.

Perhaps the most famous private library of Belguim was that of Charles J. E. van Hultheim (1764–1832), whose collection of 83,000 volumes and 1,016 manuscripts was acquired for 250,000 francs in 1837 by the Belgian government as the basis for the new Bibliothèque Royale in Brussels (*111*). The extent of private collecting in Belgium, if not always on the same level as that of Hultheim, may be judged to some degree by the number of bibliophilic societies that have existed in the small country: the Société des Bibliophiles Belges (Mons, 1834), the Maatschappij der Vlaamsche Biblióphilen (Ghent, 1839), the Société des Bibliophiles Liégois (Liége, 1878), the Mattschappij der Antwerpsche Bibliophilen (Antwerp, 1878), and the most important, the Société des Bibliophiles et Iconophiles de Belgique (Brussels, 1909).

Among the first great collectors in Holland may be mentioned Constantin Huygens, heer von Zelem en Zuylichen (1596–1687), poet and adviser of the House of Orange, whose fine collection of Latin and Greek classics was auctioned in the Hague in 1688 (*112*). Benedict Spinoza (1632–1677) was not a collector, but we have the record of his small private library made by the notary Willem van den Hove (*113*). Hieronymus de Bosch (1740–1811) had a collection which was characteristic of those of the learned Dutch jurists and philologists of the period (*114*). The famous Enschedé printing house family, founded by Isak (1681–1761), not only had great collections of type fonts and matrices but also books, notably a collection of incunabula auctioned in 1867, and a typographical collection (*115*).

At the head of the roster of Danish bibliophiles stands the name of the great

astronomer Tycho Brahe (1546–1601) (*116*). In addition to the observatory at Uranienborg on the Island of Ven, Brahe had a printing shop, a paper mill, a bindery, and a library, in which some of the bindings show his profile. Denmark had a number of collectors (and auctions) in the 17th and 18th centuries, but none had the same impact on modern scholarship as that of Arni Magnússon (1663–1750) (*117*). He began to collect manuscripts as a student and amanuensis of Thomas Bartholin, and during the period 1702–1712, when he was commissioned to study economic conditions in Iceland, he rescued or copied some of the most important Icelandic literary and historical manuscripts. Some were damaged or destroyed in the Copenhagen fire of 1728, but many survived. Today they are crown jewels of the University of Copenhagen Library and the Landsbókasafn in Reykjavík, to which some were returned after the litigation ("Handritámal") of the 1960s. Karen Brahe (1657–1736) deserves mention as the mistress of a noble collection of Danish literature, begun on the basis of books inherited from her relative Anna Gjøe, and still preserved in the Landsarkiv in Odense as the only intact and still segregated Danish private library of the period (and, indeed, probably the only one other than that of Samuel Pepys) (*118*). Count Otto Thott (1703–1785) lost one library in the Copenhagen fire of 1728, but subsequently, after inheriting a great deal of land, built a universal library of some 200,000 titles, including about 4,000 manuscripts (many illuminated) and 6,000 books printed before 1530 (*119*). It was sold in a series of auctions in 1786–1792 fetching barely 25,000 Rdl. The Royal Library received as a donation the manuscripts and older printed books and bought some 50,000 books at the auctions.

Another 18th-century Danish collector was Bolle Willum Luxdorph (1716–1788), who owned some 15,000 printed books and 493 manuscripts (*120*). Danish as well as foreign literature and history, early printed books, and a special group of 500 pieces on freedom of the press in Denmark, 1771–1775, were among the many valuable parts of the collection. The collection was auctioned in 1789, and the books are still easily identifiable from the supralibros, an elephant head. Caspar Frederik Wegener (1802–1893) formed a collection of some 40,000 volumes, strong in history and classical studies and including many good incunabula, and it was purchased for the Statsbibliotek (now University Library) in Aarhus in 1898 (*121*).

In Norway, Thorvald Boeck (1835–1901) collected a library of 31,647 volumes strong in Norwegian and also Danish literature, which was Norway's largest private library of the last century (*122*). A few years before his death he sold the collection to the Kgl. Norske Videnskabers Selskab in Trondheim. Carl Deichman (1705–1780) founded the Deichmanske Bibliotek (now the Oslo Public Library) with his 6,000-volume collection in 1785. Halvor Andersen (1745–1810) willed his 15,000 books to the University of Oslo.

The Swedish campaigns in the Germanies during the Thirty Years' War yielded rich bibliographical booty. Gustav Adolf turned over much of it to the University of Uppsala Library. His learned, book-loving, and apostate daughter Kristina (1626–1689) retained much of the bibliographical spoils from Bohemia and Moravia and added to the collection (*123*). Among her treasures was the Codex Argenteus, the

Gothic Bible taken by the Swedes in Prague in 1648. Upon her abdication she took most of the library with her to Rome, and it finally went to the Vatican Library as the Bibliotheca Reginae. However, her librarian Isaac Vossius had taken the Codex Argenteus with him to Holland in 1654, and there it was bought by Magnus Gabriel de la Gardie (1622–1686), provided with a costly silver binding, and presented to the University of Uppsala in 1669 (*124*). De la Gardie began collecting at an early age, and his library was constantly augmented by purchase, gifts, and booty from Bohemia, Moravia, and Denmark (*125*). In addition to the Codex Argenteus, he had given Uppsala many books in his lifetime, and after his death Karl XI placed the larger part of the remaining collection in the same depository.

The quantitatively largest Swedish collection of the 19th century was that of the Stockholm jeweler Christian Hammer (1818–1905) (*126*). His 150,000 volumes of Scandinavian as well as other books in many fields were dispersed in nine auctions in Stockholm between 1906 and 1919. Far more selective were the libraries of the poet Carl Snoilsky (1841–1903) (*127*), rich in early Swedish imprints and donated to the Göteburg Stadsbibliotek in 1903; and of Christopher Eichborn (1837–1889) (*128*), a highly selective collection of books, prints, and manuscripts recorded in six sale catalogs in 1890–1891. Per Hierta (1864–1924) had one of the finest of modern Swedish private libraries, rich in early Scandinavian literature and including some 500 incunabula, sold by Björck and Börjesson at auction in 1932 (*129*). Gustaf Otto Nils Silfverschiöld (1864–1892) established a great library rich in early Scandinavica, still in private ownership (*130*). The collections of Gustaf Bernström (now in the Göteborg University Library), Erik Waller (medical, now in Uppsala), and of Thore Virgin (currently being dispersed) are representative of the bibliophilic spirit that pervades modern Sweden. A focal point for collectors is the Sällskapet Bokvännerna and its journal *Bokvännen* (1945–), edited for the first 30 volumes by Thure Nyman, a discriminating collector. *Bokvännen* is a treasure house of all aspects of the book in Sweden, especially private collections.

In Hungary the tragedy of Mohács created a hiatus of two centuries in national cultural development, including book collecting. Count Samuel Teleki (1739–1822) developed a collection of 30,000 carefully selected works at his castle in Maros-Vásárhely in Transylvania, and in 1826 the family donated it to the Hungarian Academy of Sciences in Budapest. Another significant collection was that of Count Franz Széchényi (1754–1820), whose remarkable collection of Hungarica went to the National Museum in Budapest (*131*). Still another important library that went to the National Museum was that of Count Alexander Apponyi (1843–1925) (*132*), one of the finest collections not only of domestic Hungarica but also of material printed outside of Magyar territory. The library of Count Louis Apponyi (1843–1925) was auctioned at Sotheby's in 1925 for £3,363.

The most famous of all Polish private libraries was founded by Count Joseph Andreas Załuski (1702–1774; see Figure 52), bishop of Kiev, on the basis of a collection inherited from an uncle (*133*). With his brother Andreas Stanislaus Załuski (1695–1758), the collection grew to 230,000 printed books and 11,000 manuscripts. The library was opened to the public in Warsaw in 1749. In 1795 Catharine II

FIGURE 52. *Count Joseph Andreas Załuski.*

ordered Suvorov to remove it (by then some 300,000 volumes) to Saint Petersburg, and by the time the books were on the shelf about one-fifth had been lost. In 1921 the Treaty of Riga stipulated that the Polonica and other material associated with Poland be returned to Warsaw.

In Russia a collection developed by the diplomat Count Nikolai Rumiantsev (1754–1826) was ultimately to become the basis for the State Lenin Library. In 1828 the Rumiantsev Museum was set up in Saint Petersburg on the basis of the books and other collections, and in 1861 it was moved to Moscow, where it was a basic resource for Russian scholars until it was made the cornerstone of one of the world's great libraries. In czarist Russia both the intelligentsia and the aristocrats had bibliophiles in their ranks. Tolstoi was a prime representative of both. Just as in the case of the French Revolution, most of the private collections were incorporated into public ones after 1917. But bibliophily survived the confusion and destruction of revolution in the U.S.S.R. as well as in France. There are important private libraries in the U.S.S.R. today, of which that of Dr. A. I. Markushevich and his late wife, strong in Russica as well as the history of science and learning, is a representative example (*134*).

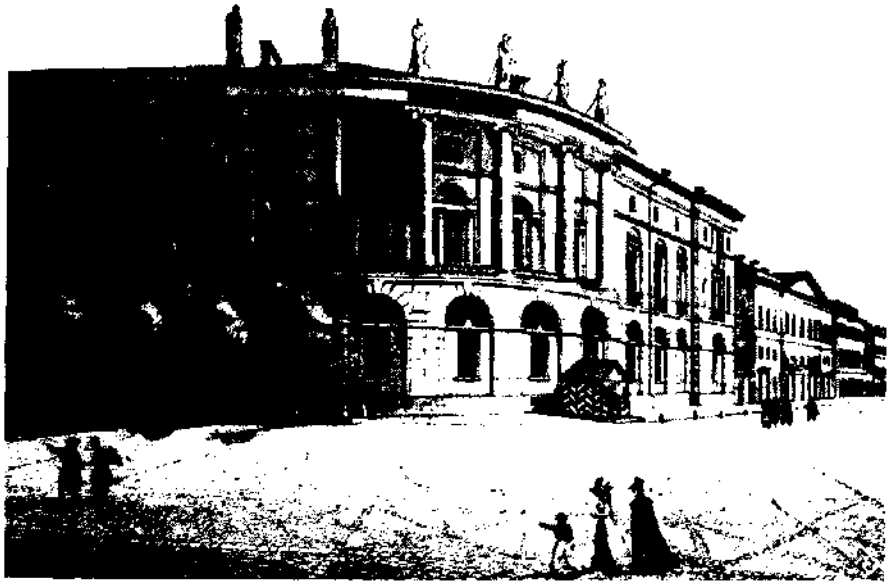

FIGURE 53. *Imperial Public Library (now Saltykov-Shchedrin Library) in St. Petersburg, about 1850.*

FIGURE 54. *Incunabula section of the Imperial Public Library (now Saltykov-Shchedrin Library) in St. Petersburg.*

THE UNITED STATES

There have been private libraries of considerable significance in the United States since the early 18th century, but they began to appear in large numbers only after the War Between the States when material wealth in the United States attained a position comparable to that of England, France, and Germany. A further verification of our rule of thumb that the appearance of major collectors coincides closely with the economic conjunctures of a nation is the fact that the old Confederate States have produced only a handful of private libraries, none comparable in gross value to greater collections and all based on local or regional material available to a collector of modest resources.

The first collector of any considerable importance in the colonies was Thomas Prince (1678–1758) (*135*). Prince began collecting as early as 1694, and he conceived the idea of a New England Library which he deposited in the Old South Church, of which he was associate pastor. After years of neglect, the collection ultimately found a home in the Boston Public Library. William Byrd II of Westover (1674–1744) assembled a gentleman's library for his Virginia plantation home, of which the most interesting part consisted of history and travel, some 4,000 volumes in all (*136*). Around 1778 it was sold by the heirs to one Isaac Zane, but a few copies can be identified in the American Philosophical Society (30), William and Mary College Library, and a few others. James Logan (1674–1751) was the most important of all colonial book collectors (*137*). His library of some 2,000 volumes, including many of the most desirable books of the past three centuries, was willed to "the public" of Philadelphia, and it is largely intact today in the Library Company of Philadelphia.

Thomas Jefferson (1743–1826) stands at the head of bibliophiles of the early Republic (*138*). The accounts of his sale of 6,749 volumes to the nation for $23,950 to reestablish the Library of Congress burned by the British in 1812 and his careful plans for the establishment of the University of Virginia Library are well known from the histories of those institutions. Jefferson was not only a collector but also an omnivorous reader, and his papers are full of references to his books. Ranking with Jefferson in terms of services in building the literary resources of the early Republic is Isaiah Thomas (1749–1831) (*139*). His monumental collection of early American imprints, books, and newspapers is the cornerstone of the American Antiquarian Society (q.v.).

With George Ticknor (1791–1871) we have the first scholarly collector in the modern sense (*140*). He was also a bibliophile in the strictest sense and was familiar with such great collectors as the Duc d'Aumale, Ludwig Tieck, and Lord Spencer. His impressive collection of Spanish literature went to the Boston Public Library (q.v.), which he helped to found. The greatest of all separate libraries of early Americana, the John Carter Brown Library associated with Brown University in Providence, Rhode Island, had its origins in the collection of John Carter Brown (1797–1874) (*141*). His older son John Nicholas Brown inherited the collection, and in 1900 it was donated with a building and an endowment to the Trustees of Brown University. Not only has the Brown family maintained its practical interest

in the collection, but three extraordinarily competent librarians, George Parker Winship, Lawrence Counselman Wroth, and Thomas R. Adams, have made this great collection a point of departure for all Americanists. The Annmary Brown Memorial at Brown, with a choice collection of incunabula, was established in 1904 by General Rush Hawkins in memory of his wife. Margaret B. Stillwell was the librarian for many years.

James Lenox (1800–1880) bought Americana from the same sources as Brown, notably Obadiah Rich and Henry Stevens, American booksellers established in London (*142*). In 1870 Lenox dedicated his great collection in a "semi-public" status to the people of New York, and in 1895 it was consolidated with the Astor and Tilden trusts to form the New York Public Library. A third great collector of Americana was George Brinley (1817–1875) of Hartford (*143*). His first major purchase was Samuel Gardner Drake's Indian collection in 1845, and from then on he built his Americana systematically and astutely. The four sales of 1879 and a fifth of 1893 (duplicates and manuscripts) fetched a record total of $127,138.12, and today many institutional libraries are the richer for Brinley's acumen as a collector. Two other major collectors of Americana were Lyman Copeland Draper (1815–1891), whose mission was to build the Wisconsin Historical Society (q.v.), and Hubert Howe Bancroft (1832–1918), who developed the first monumental Western and Pacific collection in the course of writing his shelf-filling histories (*144*). The Bancroft collection, consisting of some 65,000 books and 100,000 manuscripts, was purchased for $150,000 for the Berkeley branch of the University of California in 1907, and it has been developed considerably since then.

Americana has fascinated collectors in the United States from Prince to the present day. Only a few of the best-known collections of the past century may be mentioned. The American Indian was a major collecting area for Samuel Gardner Drake (1798–1875), New England publisher and bookseller as well as collector, who sold collections of Americana not only to Brinley (supra), but also to the British Museum and to Henry Stevens. Thomas W. Field (1820–1881), schoolmaster and antiquarian, sent his fine collection of general Americana and Indian material to auction in 1875, with 2,663 items bringing $13,500. The catalog is a valuable contribution to Indian bibliography, with emphasis on Algonquin and Iroquois. Edward E. Ayer (1841–1927) became financially comfortable in the lumber business, and his frequent trips on the Pacific littoral and interior intensified his interests in the American Indian. In 1911 he gave his Indian collection to the Newberry Library, but it included vast amounts of other Americana and is today one of the major depositories of Americana in general (*145*).

John Boyd Thacher of Albany had a sound collection of Americana and wrote on the period of exploration and discovery, but perhaps the most significant result of his career was the donation by his widow of his 900 incunabula, French Revolutionary material, and royal documents to the Library of Congress in 1910 and 1915. The first probably lends more qualitative distinction to the national library's 15th-century books than the Vollbehr Collection acquired in the late 1930s by purchase. Peter Force (1790–1868), Washington printer and politician, formed a collection of source materials on the early history of the United States which was acquired for

the Library of Congress in 1867 for $100,000 and was, along with the Jefferson collection, the most important en bloc acquisition of Americana by that library in the last century (*146*). Gordon Leicester Ford (1823–1891), Brooklyn businessman, formed a solid collection of Americana of which the major portion was donated in 1899 to the New York Public Library by his sons, Paul Leicester (1865–1902), novelist and historian, and Worthington Chauncey (1858–1941), historian and librarian (*147*). In one sense the collecting activities of Tracy W. McGregor of Detroit are the most important for the annals of American institutional collecting. Shortly before his death he gave the University of Virginia some 12,500 volumes, including many items of scarce Americana and a special Mather collection (*148*). But his inspired contribution to American libraries was developed by the McGregor Foundation, which provided matching funds to smaller libraries which would develop special collections. Some, such as Western Kentucky University in Bowling Green, used these funds to build useful, systematically developed collections (in this one case, Kentuckiana) which they would never otherwise have owned. The guiding spirit in this program was the late Randolph Greenfield Adams, long-time director of the William L. Clements Library at the University of Michigan and a sort of apostle of the rare book in the United States.

In the latter 19th century came a period which Cannon designates as the golden age, not only for the golden dollars which enabled new millionaires to purchase expensive books and manuscripts but also for their discrimination and tastes. A large proportion were associated in the Grolier Club, founded in 1884 by the leading bibliophiles of Manhattan. Beverly Chew (1850–1924) sold one collection of Americana in 1900, and the books and prints he continued to collect went to auction in 1924 after his death. William Loring Andrews (1837–1920), a native New Yorker, had a library of early imprints, fine bindings, and illustrated books, of which the best were sold to the New York dealer James F. Drake in 1919. Andrews had the pleasure of being host to the men who formed the Grolier Club and so named it in his 38th-street home on February 5, 1884. Brayton Ives (1840–1914)—brevet brigadier in the Northern army, broker, and railroad executive—owned Americana, early typography, and Elizabethan literature, of which the second auction in 1915 fetched $124,235.25, with an average price of $107.75 per volume, the highest up to that time. Frederick Robert Halsey (1847–1918) had a sound collection of 20,000 volumes bought in 1915 by Huntington, largely English and American literature and distinguished for the Poe items. Walter Thomas Wallace (1866–1922) had a collection of 16th- and 17th-century English literature which brought a disappointing $153,766.50 at auction in 1920. Marshall C. Lefferts (1848–1928) had older English literature and Americana sold en bloc in 1901 to the New York dealer George H. Richmond for some $150,000, but he continued collecting, notably a Pope library acquired for Harvard in 1910. Charles W. Frederickson (1823–1897), a Nova Scotian who became a cotton broker in the United States, assembled collections of Shakespeare and other English authors, notably Shelley, sold between 1886 and 1887.

By far the greatest collector of this age was Robert Hoe III (1839–1909), heir to a fortune built on the manufacture of printing presses, moving spirit in the Grolier

Club, and main backer of the Club Bindery; he built a magnificent collection of Americana, illuminated manuscripts, incunabula, and historical and contemporary bindings. The catalog is an abidingly valuable reference work (*149*). The sale in 1911 was an event of international importance, with many of the finest items going to Morgan and Huntington, who acquired the vellum B-42 for the record price of $50,000. The total yield was nearly $2,000,000, more than that of the Heber Sunderland, Beckford, and Ashburnham auctions together.

If Hoe had not had the notion that his library should be dispersed to give others the thrill of the chase and the pride of ownership, he might have been the founder of a library that would have rivaled those established from the collections of the three giants of American collecting: John Pierpont Morgan (1837–1913), Henry Edwards Huntington (1850–1927), and Henry Clay Folger (1857–1930). It should be noted that large segments of their collections came from the libraries of Hoe and other "golden age" collectors, and, but for these latter, many noble books and manuscripts might never have reached these shores.

Morgan's name stands at the head of the annals of American banking and book collecting (*150*). He acquired whole collections and single items of the greatest value. The Morgan incunabula, barely half of what the Library of Congress, Yale, and the Huntington own, are unsurpassed in America from a qualitative standpoint. The medieval and renaissance manuscripts, English literature, prints and drawings, autographs, manuscripts, and much else beggar description. Morgan's librarian was Belle da Costa Green, and to her acumen much of the library's distinction is owed. Her successors, Frederick B. Adams and Charles Ryskamp, have carried on the tradition.

Huntington, a railroad magnate, began to collect in late middle age (*151*). Some of his major purchases have already been noted. In 1911 he acquired the E. Dwight Church Americana for $1,000,000. It was cataloged by George Watson Cole, for years Huntington's librarian and the first architect of the great library, later to be followed by bibliographers of comparable quality, ably supported by the Huntington's generous policy of granting fellowships to leading scholars who also serve as consultants. The Huntington incunabula are qualitatively among the best in America. English and American literature and history are present in depth. His acquisitions were so vast that continuing sales of duplicates have yielded substantial sums to the library. Today San Marino (near Los Angeles) is a focal point for American humanistic research. The Huntington is also rich in art treasures. Archer M. Huntington (1870–1955) collected Spanish literature in depth, and today the Hispanic Society in New York (1904), of which he was founder and president, is probably the most practical, if not the best, place for study of Iberian culture on either side of the Atlantic.

Folger, an oil executive, developed an early love for Shakespeare and began collecting as a young man, acquiring a fourth folio barely a decade after leaving Amherst College (*152*). Folger bought extensively on both sides of the Atlantic; and after his death the library continued the policy, with such notable acquisitions as the library of Sir Leicester Harmsworth, important for its wealth in STC books. This point is significant, for the Folger (located on land which the founder acquired next

to the Library of Congress in 1928) is far more than a Shakespeare collection. Not a half dozen other libraries can rival it in its wealth in English literature before 1700 as well as in pertinent continental literature. Librarians such as Louis Booker Wright and staff members such as James McManaway have added to the luster of the Folger.

One other founder of a great library should be noted, William Lawrence Clements (1861–1934) (*153*). A native of Bay City, Michigan, and a graduate of the University in Ann Arbor, he began collecting Americana in 1903, and bought heavily at the Hoe sale and others abroad. In 1923 he presented the collection to his alma mater. The first librarian, Randolph G. Adams, was an even more avid collector than the benefactor, and acquisitions of papers such as those of Sir Henry Clinton, Sir John Vaughan, Lord George Germain, and General Thomas Gage have made the library a prime resource for the study of the American Revolution and also of American history in general up to the Civil War.

Harry Elkins Widener (1885–1912), who died in the Titanic disaster while returning from the Huth auction, might have been the founder of a library comparable to those of the Huntingtons. The already rich collection of the young bibliophile was given to Harvard by his mother along with the building which is the core of the world's greatest university library complex. Alfred Clark Chapin (1848–1936) assembled a fine library of English literature given to his alma mater, Williams College, and it has grown in significance over the years under Lucy E. Osborne, Thomas R. Adams, and H. Richard Archer. Albert Ashton Berg (1872–1950) donated a splendid collection of English and American literature to the New York Public Library in 1939.

To provide a full account of the American private libraries which have flourished in the last century and a half is beyond the scope of this article and must wait for the updating and revision of Cannon. Some great collections were dispersed and have drifted into institutional and private hands, of which the Jerome D. Kern collection, auctioned at a rich sale in 1929, is an example. The library of William Andrews Clark, Jr., passed to the custody of the University of California at Los Angeles and experienced fabulous growth under the direction of Lawrence Clark Powell in the 1950s and '60s when institutions were so opulent. The John H. Wrenn library at the University of Texas has been supplemented by other collections bought en bloc in the past quarter of a century by that most bibliophilic of American state universities. The J. K. Lilly collection at Indiana is a monument to one of the greatest collectors of mid-America. But the Robert B. Adam Library of 18th-century English literature is still in private ownership (Mrs. Donald Hyde), as are many others, probably ultimately to go to institutions on account of tax laws.

Smaller and less spectacular collections which are the sinews of research in limited areas are too numerous to mention except as examples. The de Renne collection at the University of Georgia, the McClung Collection at the Knoxville Public Library, and the Samuel M. Wilson Collection at the University of Kentucky, all emphasizing the history of their respective regions, are among the dozens of such libraries. Most important, they are monuments to the diligence, devotion, and scholarship of collectors who built significant private libraries without the resources of a Hoe, a Huntington, a Morgan, or a Folger. And there are more and more such

collections. A curious aspect of American minor and regional collecting is that, unlike the situation in Germany, relatively few are scholars' libraries. The Archer Taylor collection at Georgia is an egregious exception. Occasionally librarians have built small collections of importance (e.g., the E. W. King collection of juveniles at Miami University, Oxford, Ohio), and their private libraries seem to be more numerous than those of the scholars they serve. But the fact is that today, regardless of the profession or wealth of the collector, private libraries flourish in the United States as in few other countries or ages, and the bibliological wealth of the nation is in proportion to its material prosperity.

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LAWRENCE S. THOMPSON

PRIVATE LIBRARIES ASSOCIATION

The Private Libraries Association (PLA) was founded as a society of private book collectors in 1956. Based in London, it has a membership drawn from all parts of the world, though the majority of its members are in Britain or the United States.

In its origins the association was rather different from most bibliographic groups, in that the prime mover in the association, Philip Ward, believed that some of the services and practices of public librarianship could advantageously be taken over for the private book buyer. Some of the original plans—for setting up a formal interloan scheme, for example—proved impracticable, but the association's *Simplified Cataloguing Rules* (1959) resulted from this early emphasis on librarianship techniques. Similarly, an exchange scheme whereby members offer surplus material from their collections for sale or free exchange to other members, and in which they can advertise desiderata, reflects the influence of the British National Book Centre; this service continues and is highly valued by members. One of its virtues is that it enables members to contact others with like collecting interests, a merit also of the *Members Handbook*, in which such interests are recorded. Booksellers, to whom associate membership is available, can use this to develop their mailing lists.

Although the association has regular meetings in London, and members will from time to time have an "at home" at which they will show their collection to others, the wide geographical scatter of membership prevents the majority of members from attending. The attraction of membership, in this case, is to be found entirely in the benefits obtainable by mail.

As well as the *Exchange List*, from PLA's earliest days members have received a quarterly magazine. Initially named *PLA Quarterly* (1957), its name was soon changed to the more appropriate *Private Library*, with the realization that to most people PLA meant People's Liberation Army or Port of London Authority. To a considerable extent, its first editor's personal collecting interests guided the form which it has always taken, and it is one of the best sources of articles and reviews on fine printing (and on private presses, in particular) being published.

Another publication, the bibliography *Private Press Books*, which has been appearing annually since 1959, stems from the same personal interest. Realizing that

(because of the peculiarities of copyright deposit laws) many private press books were never recorded in national or trade bibliographies, PLA attempted to fill the gap. So far as British and United States presses are concerned, *Private Press Books* has proved very successful, though its coverage of private press activity in other cultures is weaker.

These two regular publications have attracted into PLA membership many collectors or owners of private presses. A number of other special publications and services cater to this group. A photolitho reprint of the 1846 edition of Holtzapffel's *Printing Apparatus for the Use of Amateurs,* and *Cock-a-hoop* (1976) (the fourth and final volume completing the bibliography of the Golden Cockerel Press—which had previously been issued by the Press) are examples. Similarly, within PLA there is a "Society of Private Printers" who produce small things for mutual exchange.

As with many bibliographic and bibliophile societies, the membership subscription to PLA earns an annual monograph as well as the quarterly journal. These have included several books of considerable importance. Leslie Shephard's study of *John Pitts, Ballad Printer* (1969) and Anthony Reid's *Checklist of the Book Illustrations of John Buckland-Wright* (1968) are both important studies of neglected themes in English bibliography. Another way in which PLA has been of real use has been through its offset litho reprints: of Frederick W. Faxon's *Literary Annuals and Gift-books, a Bibliography* (1912, reprinted 1973), of John Carter's classic *Taste and Technique in Book Collecting* (1948, reprinted 1969), in both of which the provision of new material makes the reprints of considerably more value than the original editions. Another work, Richard Brown and Stanley Brett's pictorial survey of *London Bookshops* (Volume 1, 1970; Volume 2 in preparation), provides an important record of a rapidly changing scene.

In recent years, PLA has undertaken work in association with the Bookplate Society, and has published important work in this field. Mark Severin and Anthony Reid's *Engraved Bookplates* (1972) was the first in this series, to be followed by *The Bookplate Designs of Rex Whistler* (1972) and Brian North Lee's *Early Printed Book Labels* (1976).

The task for such a group as PLA is not easy. To steer a course between the bibliographical societies on one hand and the more popular National Book League on the other, to make available reference books of use to collectors and librarians which these other societies and commercial publishers regard as being outside their terms of reference—these have been its thrust in the first 20 years of its life.

RODERICK CAVE

PRIVATE PRESSES

The term "private press" has been used by historians of printing from the mid-17th century onward to describe a variety of printing or publishing establishments outside the normal run of printers active in the period or in the society in ques-

tion (*1*). In a totalitarian society, for example, any press not directly under state control might be regarded as a private press, but this press, its raison d'être, and its publications will all be very different from those that are often (in the English-speaking world) regarded as the only private presses: those of the kind which regard the making of books as an art form.

One can trace the development of presses which are outside the normal pattern of printing and book production right back to the invention of printing from movable types in 15th-century Europe—or even beyond: the manuscripts produced in the scriptorium of the Florentine scribe Vespasiano da Bisticci, for example, can in more senses than one be regarded as the ancestors of the modern "fine books" in the production of which the private press movement has played so large a part.

Origins

After the invention of printing at Mainz, printers spread rapidly to the main mercantile and academic centers of Western European life. In the large centers, where the local demand was sufficient, printers could maintain themselves by their trade without outside assistance. But in smaller towns with a lesser local market, or in less settled parts of the world, there was insufficient work to keep a printer employed, or to attract him there in the first place. In such circumstances many presses that one must regard as private grew up. In Chartres, for instance, a canon of the cathedral, named Pierre Plumé, in 1482 invited the Paris printer Jean du Pré to come to Chartres to produce a Missal for the cathedral's use, and he installed du Pré and his equipment in the canon house while it was being printed. A Chartres Breviary was produced in the same way in the following year (*2*).

The Quasi-Official Press

A distinct category of private press is to be found in those establishments financed and controlled by rulers and other wealthy patrons to produce work at their behest. Almost the first ruler to recognize the propaganda value of the printed book was the Holy Roman Emperor Maximilian I. By appointing Johann Schönsperger the elder as court printer, and by ordering the production of the Emperor's Prayerbook (1512–1513) and the *Theuerdank* (1517)—which glorified the exploits of the House of Habsburg in general and of Maximilian in particular—the emperor was controlling a press which was undoubtedly private. But it was also the forerunner for many prestige items produced by government printing houses, such as the Imprimerie Royale's *Médailles sur les principaux événements du règne du Louis le grand* (1702).

Rather similar in character were the presses which were established in less settled parts of the world. The introduction of printing into Iceland, for instance, followed the Chartres pattern closely when in 1530 the last Catholic bishop of Hoolum organized the establishment of a press which produced a *Breviarium Nidarosiense* in the following year. That the press was not regarded as an undesirable eccentricity is shown by the fact that the bishop's Lutheran successor continued to give employ-

ment to his printer, Jon Matthiesen. Without such patronage, it is most unlikely that any printer would have set up in Iceland at this early date. In many respects the mission presses in Asia, Africa, and the South Seas—often as amateur in their operation as they were uncommercial in their aims—were the successors of this early variety of private press.

The Scholarly Press

A type of amateur press which has recurred time and time again is that which is established with the prime purpose of printing works of scholarship. This was, of course, sometimes undertaken by presses of the quasi-official or patron's kind—the production of the great *Complutensian Polyglot Bible* at Alcalà in Spain is the best instance of this type of work, and it cost Cardinal Ximenes some 50,000 gold ducats (a sum roughly equivalent to $3–4 million dollars in today's terms).

Some of these scholarly presses were clearly filling the role that would later be taken by the typewriter and the mimeograph. Such was the production of a private edition of Archbishop Parker's *De antiquitate Britannicae ecclesiae*, which the Elizabethan printer John Day printed for him in Lambeth Palace so that the archbishop might always have a copy by him to amend the text as need arose. Cardinal du Perron is similarly credited with a press at his chateau de Bagnolet in France, which was used to print preliminary drafts of the cardinal's works. After these had been circulated (for comments and criticism) to a select group, the text would then be revised for general publication.

Most scholarly presses were not set up as aids to composition in this way, but rather to supply needs which the ordinary commercial printers could not handle. In the publication of astronomical work, for instance, where absolute accuracy is essential, it was not uncommon for the astronomer to have his work printed in his own house under his direct personal supervision: Regiomontanus, Hevelius, and (in particular) Tycho Brahe adopted this method for their books.

Tycho Brahe's press is particularly interesting. In 1576 he had been granted the island of Hveen by the king of Denmark, and had built an impressive observatory there. Finding that Copenhagen printers could not meet his exacting requirements, and that he was too remote from the better craftsmen in Germany to have his work produced there, he imported presses, type and other equipment, *and a printer,* and set up a printing office as an adjunct to his observatory. Subsequently, when paper supplies proved inadequate, he added a paper mill to his operations. With this equipment, some of the most significant work in the history of science was produced.

Another area of scholarship in which the normal commercial printer was often inadequate was in language studies. Many of the special typefaces needed for printing in exotic languages had their origin in private commissions. The Anglo-Saxon type used for Elizabeth Elstob's *Anglo-Saxon Grammar* in 1715, and the type cut by Charles Wilkins for his *Grammar of the Sanskrita Language* (1808) are examples of such private typefounding, although in both cases the books were printed commercially. Another "linguistic" press was that operated in London by Prince Louis-

Lucien Bonaparte in the 1850s. This printed texts from St. Matthew in a variety of Basque dialects, a specialized area of work in which the old advantages of having a printer under the scholar's direct control are obvious. But by that time much of the need for a private scholarly printing house had disappeared: with the growth of academic publishing and of printing houses specializing in particular languages, it was perfectly possible for a scholar to have work printed, in Cambodian, Cree, Catalan, or what you will, without setting up a press of his own. Yet the private scholarly press is not dead, as will be seen below.

The Educational Press

The advantages of a small printing establishment as an aid to education were widely recognized in ruling houses in Europe by the 18th century. Such did not call for a permanent establishment, of course: a visit by the young Louis XIV to the newly established Imprimerie Royale in 1648, during which he "helped" with the production of an edition of the *Mémoires* of Phillippe de Commines, or the occasion on which in 1731 the London printer Samuel Palmer set up a press in St. James's Palace so that the royal children could try setting up type—these are instances of the many occasions on which children of the ruling classes were exposed to the Black Art. In a few cases, however, special permanent printing rooms were set up: both Louis XV and Louis XVI as children had small presses on which they (with assistance) printed a few small books, and no doubt more easily learned the texts they were setting up.

The Aristocratic Plaything

In the 18th century printing also developed as a hobby among the wealthier and more leisured classes. Such had been advocated in England by the newspaper *The Craftsman* in reporting Palmer's work in St. James's Palace in 1731: "We could wish that our *Nobility* and *Gentry* would follow this Royal Example, and set up a *Printing Press* in their Houses; which . . . would be a much more polite as well as a more instructive Amusement for Themselves and their Heirs, than the modern fashionable Diversions of *Billiard Tables* and *Foxhunting*." Few of the English aristocracy took *The Craftsman*'s advice, though it was certainly known to Horace Walpole, owner of the Strawberry Hill Press (q.v.). During its 32 years of life from 1757, the Strawberry Hill Press produced several books of real importance as well as a good deal of ephemera (complimentary verses in honor of visitors, guides to the contents of the house, and the like). Walpole's comment that the Strawberry Hill books "have all the beautiful negligence of a gentleman" typifies the spirit of these presses.

On the continent many such playthings existed. The duchesse de Bourbon-Condé had a press in the Palais de Bourbon in 1730; at Versailles the duc de Bourgogne, Madame de Pompadour, and others were all printing in the 1760s and 1770s; while

many of the aristocracy—the marquis de Lussay, the duc de Choseil, Président Saron, and others—had presses in their own chateaux from which they issued volumes of memoirs, family histories, and the like. Most of this work was of little general interest, but two exceptions must be noted. The press of Caperonnier de Gauffecourt in 1763 printed the first manual on bookbinding ever to be published separately, while in the 1780s Léorier de Lisle printed two books on papers made from nettles, mallow, and other fibers new to the papermaker's craft.

Far more substantial and serious in intent than most of these was the press "au donjon du château" which Frederick the Great of Prussia operated from 1748 until such things were brought to a halt by the outbreak of the Seven Years' War. As well as producing Frederick's own *OEuvres du Philosophe de Sans Souci* (1750), it printed Frederick's history of the House of Brandenburg, for which Voltaire acted as Reader, and—unusual for such hobby-presses—a manual on military tactics for distribution to the Prussian General Staff.

The French Revolution and the Napoleonic wars tended to dislocate, if not to stop, the activities of all private presses of this kind on the continent. In Britain, however, they gained a new lease on life from the fashion for book collecting which went through a boom period in the early 19th century. Several collectors started presses with a more scholarly purpose than the playthings of the preceding century: to put into print manuscripts never before printed and to reprint very scarce works. Such presses as the Hafod Press of Colonel Thomas Johnes, or Sir Egerton Brydges's Lee Priory Press, or Sir Thomas Phillipps's Middle Hill Press served as forerunners to the publishing societies such as the Roxburghe Club and Hakluyt Society, whose work was to be important later in the century.

The Middle-Class Hobby

Although the educational advantages of printing, and the pleasure to be derived from it as a spare-time occupation were already clear in the 18th century, only persons with considerable means could afford the very heavy outlay involved in setting up a full-scale printing office. Until iron presses were developed at the beginning of the 19th century, there was no really practicable way of miniaturizing printing equipment. Nearly all the private presses mentioned above were operated with the assistance of full-time paid personnel: few indeed of the French aristocrats undertook the heavy work of operating their presses themselves. But in England, where the introduction of iron presses had been pioneered by Lord Stanhope in 1800, miniature printing outfits were being marketed from the 1830s onward for "the amusement and education of youth." In the United States, where the first press to cater specifically for the amateur market was introduced in 1857, the movement took a radically different form. The first advertisement of William A. Kelsey (whose firm at Meriden, Connecticut, still produces presses for the amateur market) emphasized its commercial advantages: "Business Men save expense and increase business by doing their own printing and advertising. For boys, delightful *moneymaking* amusement. . . ."

Between Victorian high-mindedness and Yankee entrepreneurism there was a very wide gulf, but between them was created a real craze for printing as a hobby. From Rudyard Kipling to Thomas Edison, from Robert Louis Stevenson to "Little Lord Fauntleroy" himself, one finds instances of people playing with printing. Most of these amateurs produced little of interest to other than their own immediate circle of friends (an exception being the Daniel Press, q.v.). By the end of the 19th century the craze for printing had largely been superseded by other hobbies such as photography, and only those "back bedroom" amateurs who were following Kelsey's advertising and irritating the printing trade with their production of letterheads and other jobbing work at cut rates continued work.

The Author as Publisher

This group fits uneasily into the categories of private presses already listed above. The man who buys a printing press in order to print his own work may do this (rather than employing commercial printers) because it is more rewarding financially: in Britain, a lawyer, Charles Viner, and a physician, Dr. John Hunter, both ran presses which were very profitable in the 18th century. More commonly, authors set up as their own publishers because they cannot sell their work to commercial publishers and cannot afford the rates charged by vanity presses. The supreme instance is of the Rev. William Davy, a Devon clergyman who between 1795 and 1807 printed his *A System of Divinity* in 26 thick octavo volumes. In its production, the only assistance he had was from his housemaid, whom he taught to set type.

In most cases, to get an author's texts into print was all that was required of such printing, no matter how badly it might be executed. But there were and are private presses operated by authors who choose this method for deliberate aesthetic reasons: where an author has felt that only by his personal design and decoration of the book which was to be the vehicle for his texts could the full intention of his work be realized. The exemplar for such work is to be found in the "illuminated" books printed by the artist/poet William Blake. Blake towers so far above most others who have attempted work of this kind that it is all too easy to forget that he *was* operating a private press—and an extremely influential one. Among the enormous number of those inspired by his work and who have attempted work in the same tradition are a few that deserve mention, such as the Iona Press in the 1880s, or the work of Ralph Chubb from the 1930s to the 1950s, or today, Morris Cox's important Gogmagog Press in London.

Clandestine Presses

Private printing establishments have, of course, flourished in secret ever since man discovered the power of the printed word, whenever there has been political, religious, or moral oppression. In Elizabethan England, for example, one finds in-

stances of clandestine presses at both ends of the religious spectrum: in the work printed by the Catholic martyr Edmund Campion on the one hand, and in the Puritan "Martin Marprelate" tracts on the other. Or—to take another instance from a country with a long tradition of freedom of the press—the seizure of the private press operated by the English politician John Wilkes in London in 1763 (a seizure ostensibly on moral, but in fact on political grounds) is a classic case in British constitutional history.

Sometimes called "underground presses," such clandestine operations have occasionally been literally that, like that of the Abbé François Xavier de Feller at the end of the 18th century, which produced anti-Austrian propaganda from the bottom of a coal mine near Liège while the police of the Austrian Netherlands vainly sought it. But normally "underground" refers only to the presses' clandestine status (and this has, in any case, been devalued as a descriptive phrase by its misapplication to presses espousing minority causes and an alternative society, which are not in danger of suppression at all). These clandestine presses flourished in Ireland during "the Troubles" and in prerevolutionary Russia (and since: the *samizdat* editions which figure in contemporary Russia are the direct descendents of earlier endeavors against censorship); and they were by no means the least important aspects of the resistance to Nazi occupation in Europe in World War II. In both France and the Netherlands—and only to a lesser extent in Poland, Denmark, and other occupied countries—there were extensive illicit printing enterprises carried on by amateurs in the 1940s (*3*). Some of the work produced was of very high literary and typographic quality, but with the 20th-century development of easy photocopying and office duplicating methods, such illicit work is nowadays more often carried out by such simpler methods rather than by letterpress printing.

There are other private presses which are clandestine in their work for less high-minded reasons than those which inspire the operators of the presses named above. In the stricter moral climate of the past the printing of erotica such as *Fanny Hill* was attended by such penalties that it tended to be produced by clandestine printers, as today hard-core pornography is still so produced. And for those who interpret the Kelsey Company's advertising slogan "Print—make money" too literally and turn to counterfeiting, the role of the clandestine printing plant is vital.

Printing as a Fine Art

The 20th-century private press movement, and its association with the production of "fine books" is to be traced back to the establishment of William Morris's Kelmscott Press (q.v.), which was in turn inspired by a lecture given by Emery Walker (q.v.) to the Arts and Crafts Exhibition Society in 1888.

The work of such presses is discussed elsewhere in this encyclopedia (*see* Ashendene Press, Vol. 1, pp. 662–665; T. J. Cobden-Sanderson, Vol. 5, pp. 224–231; Daniel Press, Vol. 6, pp. 425–428; Doves Press, Eragny Press, Vol. 8, pp. 161–164; and Kelmscott Press, Vol. 13, pp. 407–415). Their function, so far as they understood it, was to reestablish sound principles of book *design*, which during the

19th-century mechanization of the printing trade had not kept pace with the technical advances of the period. These presses attempted it usually by returning to first principles: to the standards in design and execution to be found in the finest 15th-century Italian printing as a rule, although in some instances other models were adopted, for example, the Daniel Press's revival of 17th-century types.

With hindsight it is possible to discern many mistaken routes taken in their quest for the "ideal book": the gothicising element in Kelmscott work, the frigid classicism of Cobden-Sanderson. By tying their work to the ideals of hand craftsmanship and "truth to materials" which were so important to those in the Arts and Crafts Movement, they did not form good examples for commercial book production. Those trade books which were produced early in the 20th century under direct private press influence were not seldom ugly and ineffectual vehicles for an author's words. Nevertheless, the fact that work of Kelmscott, Doves, and other private presses was successful in redirecting attention toward book design—in making it a subject about which the ordinary educated man could be expected to be aware—was a major step forward.

During the years between the two world wars, the lesson of the private presses was successfully applied to trade book production. The work of professional typographers like Bruce Rogers, W. A. Dwiggins, and Stanley Morison (allied to the revivals of good type designs of the past by manufacturers of composing machines) was of particular importance in this respect. No less important were the publishing imprints, the Nonesuch Press and the Limited Editions Club, which showed that it was possible to produce books of excellent design and fully up to the standards of workmanship of the old private presses, while using the mechanized equipment of modern commercial printing houses. There was also the growth of small commercial printing houses which worked in the tradition and to the standards of the private presses. Such printers were to be found in many locations (a famous example being Will Carter's Rampant Lions Press in Cambridge, England); but these were to become a particular feature in California, where the work of such printers as the Grabhorn Press, the Plantin Press, and Ward Ritchie is justly of high reputation.

At the same time, many private presses much closer to the Kelmscott tradition continued to produce fine work, particularly in Germany, the United States, and in Britain. One may, for example, cite the Shakespeare Head Press, or the Golden Cockerel Press (q.v.), which was particularly important for the part it played in the revival of wood-engraved book illustration. In France the influence of the Arts and Crafts Movement had never been strong, and the French *livres d'artiste* were produced with different ideals in view from the private press credo, though similar in some respects to good private press work.

The Contemporary Private Press Scene

Although several of the important private presses continued operations in the 1940s (particularly, of course, in the United States), World War II and the years of

austerity which followed it in Europe almost destroyed the market for expensive books of the traditional "fine printing" kind. The era of the deluxe book seemed to be at an end, and obituary notices for the private press were commonplace in the early 1950s. However, just as the past quarter-century has seen the steady decline of commercial letterpress printing before the advances in offset lithography, so the same period has witnessed a recrudescence of private presses (most of which are devoted to letterpress work), so that today there are more amateur printers active than ever before.

The spirit which imbues the contemporary private printer is very different from that of the parlor printers of the 19th century. Today's amateurs are bibliographically well informed, being brought up on the typographic literature of D. B. Updike, Stanley Morison, and others, and in consequence they are able to practice their spare-time avocation with a taste and skill seldom possessed by their 19th-century predecessors (*4*).

There are many private presses whose proprietors devote themselves mainly to amateur journalism, producing (sometimes as a collective venture) many hundreds of little magazines. Occasionally these will print material of literary importance, but more usually their work is produced with a deliberately lighthearted ephemeral content, which renders it of limited interest outside their own immediate circle.

In contrast one can, among today's private presses, distinguish many which work directly in the traditions of earlier varieties of the private press, and which publish matter of much more weight and general interest. Their work, of which a substantial proportion is listed in the Private Libraries Association's annual bibliography *Private Press Books* (1959–), falls into several different (though not mutually exclusive) groups:

1. *The typographic presses,* which exist primarily to produce experiments in design, layout, and so forth. John Ryder's Miniature Press, or the Cuckoo Hill Press of David Chambers, or the Tuinwijkpers of Sem Hartz are good instances of such private presses. To an increasing extent some of these are allied to a new hobby, that of the amateur typefounder. Such private printers as Paul Hayden Duensing at Kalamazoo, Michigan, have not only produced new castings of typefaces which have disappeared from the repertoires of commercial founders, but have also originated some very effective new designs, some of which have been pirated for the commercial market in exactly the way that the Kelmscott Press's types were commercially imitated.
2. *The scholarly presses,* which print important texts of limited appeal, for which the normal commercial or academic publisher may not be well suited. In England, Geoffrey Wakeman's Plough Press—with its portfolio on *Nineteenth Century Illustration Processes* (1971), which was illustrated with leaves from 19th-century books which had used the processes described—is one example of the genre. In the United States there are: Henry Morris's distinguished series of books on papermaking from his Bird and Bull Press; or from the Press of John Cumming in Mount Pleasant, Michigan, several substantial volumes of Michigan history; or from Charles Ingerman's Quixott Press in Doylestown, Pennsylvania, some studies on local Quaker history—these are representative of the valuable work published by contemporary amateurs.
3. *Fine art presses:* these are normally working directly in the tradition of William

> Morris and the private press movement in attempting to build books of typographic excellence as vehicles for worthy texts (though some, like the Allen Press in Kentfield, California, span the gap between the private presses and the French *livres d'artiste*). These range from Alan Tarling's modest "Poet and Printer" in Essex, England (which is content with unassuming texts for sale at a low price), through the severely classical and exquisitely produced work of the Nuns of Stanbrook Abbey Press (Worcester, England) and that of Kim Merker at the Stone Wall Press in Iowa City, through the less classical but equally splendid Janus Press books produced by Claire Van Vliet in Vermont, to the extraordinary work of Walter Hamady at the Perishable Press in Wisconsin. Perishable Press books, often printed on paper made at the press, have at times broken every typographic rule there is, and are at times unsusceptible to adequate bibliographical description—yet they remain some of the liveliest and most exciting volumes of contemporary poetry.

Some presses transcend these categories, of course. In England, one of the most interesting private presses is that of Trevor Hickman, the Brewhouse Press in Leicestershire. Some of its books have been serious contributions to scholarly knowledge, whether typographic (*Typographia Naturalis*, a history of nature-printing) or local history (*The Oakham Canal*); others are exercises in fine illustration (*The Pickworth Fragment*); yet other productions will be lighthearted ephemera, or typographic experiments. This press is by no means unique in its range and styles of work; though producing more and often better work in the various fields in which it operates, it typifies much that is best in the private press of today.

The presses range as widely in equipment and scale of operations as in the types of work they issue. Some of them are virtually working museums, keeping in use presses built a century and more ago, and preserving techniques of craftsmanship which would otherwise be lost. Some, though still devoted to the use of the best materials, prefer to employ more modern presses in order to be able to produce long runs of high quality with less labor. Yet others will be very small indeed; a small flatbed press which can be stored under a bed, plus enough type to print a page at a time, will be the sum total of their equipment.

Bibliographical Presses

An interesting and significant development from the private presses has been the appearance of *bibliographical presses* (5). Schools of art which teach courses in graphic design have, of course, for long had printing equipment on which student work was produced. Porter Garnett's famous Laboratory Press in Pittsburgh (1923–1935), and the Lion and Unicorn Press of the Royal College of Art in London are among the best known of these, and they have produced a considerable volume of important work prized by discerning collectors. The bibliographical presses, on the other hand, are working laboratories set up to assist the bibliographical student to an understanding of book production methods, through personal experience in setting, presswork, and so forth. Presses of this kind are to be found sometimes in

university libraries (as at Bodley, McGill, or Sydney), sometimes in English departments, and often in schools of librarianship. In the nature of things their productions tend to be slighter and more ephemeral but they have also produced a generation of literary scholars and librarians whose understanding of the niceties of printing is much greater than a generation or two ago.

"Little" Presses

The "little" presses may be regarded perhaps as an offshoot of, perhaps as a rival to the private press movement. These undertakings—the publishing industry of an alternative society—are not in general very much interested in typographical excellence: they exist in order to put into print works which their owners feel passionately *should* be published, and which for one reason or another are unsuitable for the commercial publisher. Particularly active in the production of literary magazines, experimental poetry, and work of a kindred nature, they span the gap between the amateur and the full-scale publishing operation. At one end of the scale (because of their concern with the text rather than its presentation) they may produce their pamphlets by office duplicating processes; at the other they may be semi-commercial publishing imprints having all their printing done for them by others. Advances in small offset litho printing have meant that many of these little presses will employ such techniques for their work rather than the letterpress printing favored by most other private printers. With a successful public response to their literary programs they may become almost indistinguishable from the ordinary commercial publisher, with the important proviso that they remain more interested in producing what they think good work than in maximizing profits (which is true of the better commercial publishers also, of course). The Unicorn Press in California and the Gaberbocchus Press of London are good examples of the species.

The Future of the Private Press

It is a commonplace that changes in the structure of the publishing industry, and in printing technology, have produced a situation in which the book which is of limited appeal or is a slow seller is much less likely to achieve publication than was formerly the case. In consequence, a book of merit, one which will appeal only to a minority group, will not in the future be published unless subsidized by a learned society or other body, or if the amateur publisher takes an active role. To be sure, some unprofitable publishing areas will be catered for through the programs of scientific journals, publishing societies, and the like. But in the fields of imaginative literature and local history (in its widest sense) there is a distinct gap which can be filled only by the concerned group or individual enterprise.

The little presses can cater for some of society's needs in this way. Similarly, the traditional private press will continue to produce work for those who feel that the

book can and should be more than just a vehicle for the texts they contain (or that on occasion the vehicle should be a Rolls-Royce rather than a Detroit production-line job). At present there is too wide a gap between these two kinds of private press: though it may be unrealistic today to expect that private press ideals of craftsmanship can be carried over into normal commercial book production, many of these ideals could advantageously be applied by the little presses. In the same way, the little presses' concern for the texts they print would render more permanently valuable the work of those private printers who demonstrate great taste and skill in printing rather negligible texts.

The Private Press and the Library

There is no doubt that the increase in the number of amateurs producing books and literary magazines presents many problems for the librarian. A good deal of the work they print may technically not be published (in the legal sense) at all, and so escape record in those national bibliographies which are based upon legal deposit. Being produced outside normal booktrade channels, their work may not be listed in the standard trade bibliographies, and will seldom be carried in the stocks of booksellers and library suppliers. In consequence, the librarian concerned with selection of stock will have difficulties in finding out about these publications. In addition to this barrier (which requires perseverance on the librarian's part to overcome) there is also at times a consumer resistance, on the librarian's part, to the purchase of material which may occasionally be very awkward to process, store, and make available to readers (how *does* one shelve a book which opens concertinawise? or one triangular in shape?). The puritan ethos which imbued many earlier librarians also made them reluctant to buy some of the rather luxurious (and expensive) private press work of the past. For these various reasons, one often finds that private presses' work is less widely distributed in public libraries than one might expect.

Some libraries deliberately cultivate good relations with those amateur printers/publishers active in the area they serve, and build up an archive of the press's work (ephemera as well as books), which—although difficult to handle—has important long-term cultural significance. In addition, some research libraries have built up substantial collections of private press material: the Eric Gill collections at UCLA, the Will Ransom collection in the Newberry Library, Chicago, and the Bodleian Library's collections are of particular importance in this way. But in general, professional librarianship's attitude to private press work has been one of lip service and little more: with the purchase of a few representative Kelmscott, Golden Cockerel, or Grabhorn books to grace the library's display cases, the librarian has assumed that he has performed his function adequately. But, given the increasing importance of much published by these amateur printers and publishers, unless librarians succeed in improving their coverage of private press work, posterity will judge their professional competence harshly.

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1. The earliest writer to distinguish private presses was Bernard Mallinckrodt, in his *De ortu ac progressu artis typographicae dissertatio historica* (Cologne, 1639). The earliest extensive treatment of private presses was given by Adam Heinrich Lackman in *Annalium typographicorum* (Hamburg, 1740), of which a modern English version remains a desideratum in private press literature.
2. The references for this and the later examples given in this article are to be found in Roderick Cave, *The Private Press* (Faber, London, 1971), pp. 347–363.
3. cf. Dirk de Jong, *Het vrije boek in onvrije tijd* (Leiden, 1953); and "Vercors," in *Voices of Silence* (London, 1968).
4. With the aid of such excellent manuals as John Ryder, *Printing for Pleasure* (Phoenix House, London, 1955), and Lewis Allen, *Printing with the Handpress* (Van Nostrand, New York, 1969).
5. Philip Gaskell, "The Bibliographical Press Movement," *J. Printing Historical Soc.*, **1**, 1–13 (1965).

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RODERICK CAVE

THE PRIX GONCOURT

Edmond de Goncourt and the Establishment of the Académie Goncourt

By the following clause in his will, Edmond Huot de Goncourt (1822–1896) established the academy and the prize which bear his name and which, according to his wish, perpetuate his memory and that of his brother Jules de Goncourt (1830–1870).

> I name as my executor my friend Alphonse Daudet, charging him to establish, in the year of my death, and in perpetuity, a literary society the foundation of which has been, throughout our lives as men of letters, the thought of my brother and me and which has as its purpose the following:
>
> 1. An annual prize of 5,000 francs to be awarded to the author of a work of fiction.
> 2. An annuity of 6,000 francs to each of the members of the society.

The Parisian literary milieu had known about this proposed project for a long time. Many men of letters who frequented Goncourt's famous "garret" had hoped to be included on the list that Edmond de Goncourt composed and recomposed.

According to its founder's wish, the prize was to be given to "the best novel, or best collection of short stories, or best volume of impressions, or best work of the imagination in prose and only in prose to be published during the year. . . . My greatest hope . . . is that the prize will be given for freshness, for originality of talent, for new and venturesome leanings in thought and form."

After Edmond de Goncourt's death on July 16, 1896, his natural heirs sued to have his will annulled. This was a famous trial; during its course the interests of the future members of the Académie Goncourt were defended by an already famous young lawyer, Raymond Poincaré. He had held ministerial posts three different times and became, several years later, the president of the Republic.

The heirs' suit dismissed, the money settled, recognition of its public benefit settled by decree of the minister for the interior, Emile Combes, the Académie Goncourt was able to begin its activities officially on January 19, 1903.

Earlier, without waiting for the end of the formalities, the Goncourt members had met, on April 7, 1900, to complete their membership. The list established by Edmond de Goncourt (which he had often modified) included only eight members, of whom one, Alphonse Daudet, Edmond de Goncourt's executor, had died in 1897.

When it was recognized as a legal entity, the Académie Goncourt was composed of J. K. Huysmans, president; J. H. Rosny, Sr.; Octave Mirbeau; Justin Rosny, Jr.; Paul Margueritte; Gustave Geffroy; Léon Daudet; Elémir Bourges; Lucien Descaves; and Léon Hennique.

The founder had been careful to protect the "Société des Goncourt" against all official influence by stipulating that no member of it could participate at the same time in the Académie française. The historian and literary critic Emile Faguet defined the roles of the two academies as follows:

> Aside from the Académie française . . . there is a place for a forward-looking, bold, if not daring, society, on the watch for newness, knowing how to recognize what is genuine or has the chance of becoming so, enlightening and guiding the young, being provocative, representing quest and innovation, as the other is, of course, the guardian of tradition (*Annales politiques et littéraires*, January 18, 1903).

Most of the founding members of the Académie Goncourt were from the naturalist school, but Elémir Bourges, lyrical and absolutely independent, was an exception. As time went on, the academy retained this characteristic, but did admit some writers from every literary school. Aside from novelists, it has included poets (Emile Bergerat, Raoul Ponchon, Léo Larguier, Louis Aragon), dramatists (Georges Courteline, Sacha Guitry, Armand Salacrou), even a historian (Pierre Champion), and it has admitted female writers (Judith Gautier, Colette, Françoise Mallet-Joris).

Conforming to the wishes of Edmond de Goncourt, the monthly meetings take place in a restaurant, first the Grand Hôtel, then the Champeaux, then the Café de Paris, and finally, since 1907, the Drouant restaurant. The wars of 1914–1918 and 1939–1945 sometimes prevented regular meetings, and the Académie Goncourt suffered the consequences of political events, especially after World War II. However, the prize has endured the tribulations of modern history.

The Prix Goncourt

The Prix Goncourt was awarded for the first time on December 21, 1903. By a vote of six to four it was given to an unknown, a great traveler, a Frenchman born in San Francisco, Eugène Torquet. He wrote under the pseudonym of John-Antoine Nau and was an occasional contributor to the *Revue blanche*. His novel *Force ennemie* told the story of a madman who, having escaped from an asylum, returned there, worn out by the spectacle of humanity. With the second prize-winning work, in 1904, *La maternelle* by Léon Frapié, there began to appear, albeit slowly, the phenomenon that would develop more fully over the years: success in the book stores. Such success remained modest relative to modern book sales; a Prix Goncourt, prior to 1914, meant sales of perhaps 500 extra copies. In 1928 the sales of a prize novel by Maurice Constantine-Weyer, *Un homme se penche sur son passé*, rose to 100,000 copies. Schwarz-Bart's *Le dernier des justes*, the Goncourt winner in 1959, reached 300,000 copies in one month, 750,000 in 16 years. André Malraux's *La condition humaine*, honored in 1933, has sold more than a million copies in 40 years.

The Goncourt jury has not always followed the letter of de Goncourt's will in all ways. Sometimes it has given the prize "for freshness," and has allowed a talented writer to carry on his work on the basis of its promise. Not all succeeded. Some died prematurely, as did Adrien Bertrand (the 1914 awardee), who was killed in combat, or Maxence Van der Meersch (the 1936 awardee); some abandoned literature, as did Paul Colin (the 1950 awardee). Sometimes the Académie Goncourt,

unable to agree about new talent, has preferred to give the prize to an accomplished author who shows "new and venturesome leanings in thought and form," as to Marcel Proust in 1919.

The awarding of the Prix Goncourt has stirred up various incidents, not only in the heart of the Académie Goncourt, where impassioned discussions have occurred, but also in the literary world and in the press. In 1912 the tumultuous vote which ended in the award to André Savignon's novel *Les filles de la pluie*, rather than *L'Ordination* by Julien Benda, led to the resignation of President Léon Hennique, who had to cast his vote to break the tie. In 1913 it took no fewer than 11 ballots to decide upon *Le peuple de la mer* by Mark Elder. The 1916 prize, awarded to Henri Barbusse for *Le feu*, pitted Léon Daudet and Elémir Bourges in violent opposition to their fellows. But the most spectacular quarrel was on the occasion of the 1932 prize, awarded to Guy Mazeline for *Les loups* over Louis-Ferdinand Céline's *Le voyage au bout de la nuit*, which had been supported by Lucien Descaves. The journalists Galtier-Boissière, director of *Crapouillot*, and Ivan Sicard accused the president of the academy of having sold his vote. The affair was settled during the course of a defamation suit brought by J. H. Rosny.

In 1947 Sacha Guitry and René Benjamin, in a difference of opinion with the Académie Goncourt, awarded a "Prix Goncourt outside of the Goncourt" to Kléber Haedens for *Salut au Kentucky*, a move which ended in a court action between the Académie Goncourt on one side and the publisher Robert Laffont and Sacha Guitry on the other.

The semiofficial award to Vintila Horia for *Dieu est né en exil*, in 1960, unleashed a press campaign to reverse the renunciation of the prize winner, following the jury's decision not to confirm its preliminary choice.

On "Goncourt day" of November 18, 1968, embarrassment caused by information passed to the press led to the resignation of Louis Aragon.

In 1973, for the first time, the debates and balloting of the Académie Goncourt were recorded and televised, until the prize was given to a Swiss writer, Jacques Chessex.

An important element in literary life because of the competition it creates among publishers to look for new talent and because of the interest it arouses among the public, and even on account of the conflicting opinions it has raised since its early years, the Prix Goncourt has, by its example, given birth to the creation of several other awards. In 1904, 22 women writers, in reaction to the literary misogyny of the first members of the Académie Goncourt, founded the "Fémina-Vie heureuse" prize, which became the Fémina prize. In 1926, 10 journalists who were waiting in the Drouant restaurant for the results of the vote decided to honor the book of one of the Goncourt candidates and thus created the Prix Théophraste-Renaudot, in homage to the founder of French journalism. In 1930, 20 journalists impatient during the wait for the proclamation of the Prix Fémina founded the Prix Interallié.

This multiplicity of prizes at least partly nullifies the accusations of certain critics

that the very principle of prizes, in designating only one work as the best each year (among the many produced), pushes into the background, arbitrarily, some works which are as good or better. As a matter of fact, it has often happened that the works eliminated at the time of the final choice have enjoyed a fame equal to that of the prize winner, for example, *A. O. Barnabooth* by Valéry Larbaud (1913), *Sous Verdun* by Maurice Genevoix (1914), *Les croix de bois* by Roland Dorgelès (1919), *Les amitiés particulières* by Roger Peyrefitte (1944), or *Vipère au poing* by Hervé Bazin (1948).

However, the members of the Académie Goncourt were not insensible to the criticisms of the prize, to the point that, in 1924, one of them proposed to divide the annual prize among five young writers. His proposal was not adopted, but, in recent years, the academy has felt the need to encourage forms of literary activity other than the novel. That is why it has established, in addition to the Prix Goncourt, an annual "Bourse de la nouvelle" (a monetary award for short stories) and a "Bourse de récit historique" (a monetary award for historical accounts). These were first awarded in 1974.

The Winners of the Prix Goncourt

The winners of the Prix Goncourt are listed below, chronologically, with the title of the work for which they received the award. Publishers are given in parentheses.

1903 John-Antoine Nau, *Force ennemie* (Editions de La Plume)
1904 Léon Frapié, *La maternelle* (Albin Michel)
1905 Claude Farrère, *Les civilisés* (Ollendorf)
1906 Jérôme and Jean Tharaud, *Dingley, l'illustre écrivain* (Plon)
1907 Emille Moselly, *Terres lorraines* (Plon) (awarded for the whole of his work)
1908 Francis de Miomandre, *Ecrit sur le d'eau* (Editions du Feu)
1909 Marius and Ary Leblond, *En France* (Fasquelle)
1910 Louis Pergaud, *De Goupil à Margot* (Mercure de France)
1911 Alphonse de Chateaubriant, *Monsieur des Lourdines* (Grasset)
1912 André Savignon, *Les filles de la pluie* (Grasset)
1913 Marc Elder, *Le peuple de la mer* (Calmann-Lévy)
1914 (presented in 1916) Adrien Bertrand, *L'Appel du sol* (Calmann-Lévy)
1915 René Benjamin, *Gaspard* (Fayard)
1916 Henri Barbusse, *Le feu* (Flammarion)
1917 Henry Malherbe, *La flamme au poing* (Albin Michel)
1918 Georges Duhamel, *Civilisation* (Mercure de France)
1919 Marcel Proust, *A l'ombre des jeunes filles en fleurs* (N.R.F.)
1920 Ernest Perochon, *Nêne* (Plon)
1921 René Maran, *Batouala* (Albin Michel)
1922 Henri Béraud, *Le vitriol de lune* and *Le martyre de l'obèse* (Albin Michel)
1923 Lucien Fabre, *Rabevel ou le Mal des ardents* (N.R.F.)

1924 Thierry Sandre, *Le chèvrefeuille; Le purgatoire;* and *Le chapitre XIII d'Athénée* (N.R.F.)
1925 Maurice Genevoix, *Raboliot* (B. Grasset)
1926 Henri Deberly, *Le supplice de Phèdre* (N.R.F.)
1927 Maurice Bedel, *Jérôme, 60° latitude nord* (N.R.F.)
1928 Maurice Constantin-Weyer, *Un homme se penche sur son passé* (Rieder)
1929 Marcel Arland, *L'Ordre* (N.R.F.)
1930 Henri Fauconnier, *Malaisie* (Stock)
1931 Jean Fayard, *Mal d'amour* (Fayard)
1932 Guy Mazeline, *Les loups* (N.R.F.)
1933 André Malraux, *La condition humaine* (N.R.F.)
1934 Roger Vercel, *Capitaine Conan* (Albin Michel)
1935 Joseph Peyré, *Sang et lumières* (Grasset)
1936 Maxence Van der Meersch, *L'Empriente du Dieu* (Albin Michel)
1937 Charles Plisnier, *Faux passeport* (Editions Corréâ)
1938 Henri Troyat, *L'Araigne* (Plon)
1939 Philippe Hériat, *Les enfants gâtés* (Gallimard)
1940 (presented June 24, 1946, having been kept for an imprisoned author) Francis Ambrière, *Les grandes vacances* (Editions de la Nouvelle France)
1941 Henri Pourrat, *Vent de mars* (N.R.F.) (awarded for the whole of his work)
1942 Marc Bernard, *Pareils à des enfants* (N.R.F.)
1943 Marius Grout, *Passage de l'homme* (N.R.F.)
1944 Elsa Triolet, *Le premier accroc coûte deux cents francs* (Denoël)
1945 Jean-Louis Bory, *Mon village à l'heure allemande* (Flammarion)
1946 Jean-Jacques Gautier, *Histoire d'un fait divers* (Julliard)
1947 Jean-Louis Curtis, *Les forêts de la nuit* (Julliard)
1948 Maurice Druon, *Les grandes familles* (Julliard)
1949 Robert Merle, *Week-end à Zuydcoote* (Gallimard)
1950 Paul Colin, *Les jeux sauvages* (Gallimard)
1951 Julien Gracq, *Le rivage des Syrtes* (J. Corti)
1952 Béatrix Beck, *Léon Morin, prêtre* (Gallimard)
1953 Pierre Gascar, *Les bêtes* and *Le temps des morts* (Gallimard)
1954 Simone de Beauvoir, *Les mandarins* (Gallimard)
1955 Roger Ikor, *Les eaux mêlées* (Albin Michel)
1956 Romain Gary, *Les racines du ciel* (Gallimard)
1957 Roger Vailland, *La loi* (Gallimard)
1958 Francis Walder, *Saint-Germain ou la négociation* (Gallimard)
1959 André Schwarz-Bart, *Le dernier des justes* (Le Seuil)
1960 Viutila Horia, *Dieu est né en exil* (Fayard) (named but not awarded)
1961 Jean Cau, *La pitié de Dieu* (Gallimard)
1962 Anna Langfus, *Les bagages de sable* (Gallimard)
1963 Armand Lanoux, *Quand le mer se retire* (Julliard)
1964 Georges Conchon, *L'Etat sauvage* (Albin Michel)
1965 Jacques Borel, *L'Adoration* (Gallimard)
1966 Edmond Charles-Roux, *Oublier Palerme* (Grasset)
1967 André Pieyre de Mandiargues, *La Marge* (Gallimard)
1968 Bernard Clavel, *Les fruits de l'hiver* (Laffont)
1969 Félicien Marceau, *Creezy* (Gallimard)
1970 Michel Tournier, *Le Roi des Aulnes* (Gallimard)
1971 Jacques Laurent, *Les bêtises* (Grasset)
1972 Jean Carrière, *L'Epervier de Maheux* (Pauvert)

1973 Jacques Chessex, *L'Ogre* (Grasset)
1974 Pascal Lainé, *La dentellière* (Gallimard)
1975 Emile Ajar, *La vie devant soi* (Mercure de France)

Members of the Académie Goncourt

Following is a list of the members of the Académie Goncourt since its establishment.

1900–1942	Léon Daudet
1900–1907	J. K. Huysmans (president from 1900 to 1907)
1900–1917	Octave Mirbeau
1900–1940	J. H. Rosny, Sr. (president from 1926 to 1940)
1900–1945	Justin Rosny, Jr. (president from 1940 to 1945)
1900–1935	Léon Hennique (president from 1907 to 1912)
1900–1918	Paul Margueritte
1900–1926	Gustave Geffroy (president from 1912 to 1926)
1900–1925	Elémir Bourges
1900–1949	Lucien Descaves (president from 1945 to 1949)
1907–1910	Jules Renard
1910–1917	Judith Gautier
1917–1947	Jean Ajalbert
1918–1924	Henri Céard
1919–1923	Emile Bergerat
1924–1937	Raoul Ponchon
1924–1939	Pol Neveux
1926–1937	Gaston Chérau
1929–1973	Roland Dorgelès (president from 1954 to 1973)
1936–1950	Léo Larguier
1937–1958	Francis Carco
1938–1948	René Benjamin
1939–1948	Sacha Guitry
1941–1942	Pierre Champion
1942–1944	Jean de La Varende
1943–1971	André Billy
1945–1954	Colette (president from 1949 to 1954)
1947–1973	Alexandre Arnoux
1948–1967	Gérard Bauer
1949–	Armand Salacrou
1949–1971	Philippe Hériat
1950–1970	Pierre Mac-Orlan
1951–1976	Raymond Queneau
1954–1970	Jean Giono
1958–	Hervé Bazin (president since 1973)
1967–1968	Louis Aragon
1969–	Armand Lanoux
1970–	Françoise Mallet-Joris
1971–	Bernard Clavel
1971–	Robert Sabatier
1972–	Michel Tournier
1973–	Jean Cayrol
1973–	Emmanuel Roblès

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PROBABILISTIC OR WEIGHTED INDEXING

The Historical Context

The term "probabilistic indexing" first appeared in the literature in August 1958 in an internal paper prepared by M. E. Maron for the Data Systems Office of the Thompson Ramo Wooldridge Corporation (*1*). Approximately 1 year later Maron and his colleagues authored another internal paper which described a set of experiments designed to evaluate the retrieval effectiveness of probabilistic indexing (*2*). The results of these experiments were published in the *Journal of the Association*

of Computing Machinery in July 1960 (*3*). This article brought the concept of probabilistic indexing to the attention of documentalists and stimulated additional research on improving the effectiveness of automated information retrieval systems.

In addition to describing the basic notions and techniques of probabilistic indexing, the article also defined the concept of relevance and described a procedure for computing a *relevance number*, which is a measure of the probability that a document would be considered relevant to a request. Current research in probabilistic indexing has been broadened to include the development of formal rules, or probabilistic models, for identifying those words in an article that explicitly relate to the subject of the document and which are therefore suitable for use as index terms, and for distinguishing these from the noncontent-bearing words. Probabilistic indexing not only provides insight into the intellectual process of indexing, but it is an essential component of most automatic retrieval systems.

Conventional and Probabilistic Indexing

During the late 1950s, it had already been demonstrated that computers could process words as well as numbers, that computers could be used to provide a rough translation of one language into another, and that they could be used to retrieve documents by matching the index tags assigned to a document with similar tags assigned to a request. However, although the computer could be used for these purposes, the results achieved were not always adequate. Information science researchers sought to develop new techniques that would improve the effectiveness of computer-based retrieval systems. Probabilistic indexing was suggested as such a technique.

In conventional indexing, the indexer must decide whether or not a given term should be assigned to a particular document, for example, whether the term is indicative of the subject content of the document. The choice is a binary one, the term either is or is not assigned. However, the correspondence between a set of index terms and the information content of a document can never be perfect. An index term can only describe a small portion of the document's content and not the entire document content. Index terms may be used to describe an aspect of the document and not necessarily the main topic. Furthermore, a concept may be described by different words, and the same word may refer to different concepts. The lack of correspondence between concept and term is called *semantic noise*. A thesaurus can reduce, but it cannot eliminate, this noise. Because there is some uncertainty between the index terms and subjects noted by them, there is only a *probability* that a person requesting information on a subject designated by the proper index term will accept the retrieved documents as being relevant to the request.

Probabilistic indexing recognizes the existence of semantic noise and attempts to improve retrieval effectiveness by assigning index terms on a probabilistic basis. If an index term only partially characterizes the contents of a document, the term can still be assigned but given a low weight, such as 0.2 or 0.3; whereas in conventional indexing one would have to make a decision either to assign the term, imply-

ing that it is fully descriptive of the document contents, or not to assign it. Either decision will result in some retrieval errors, for example, retrieving a document which is not considered relevant, or not retrieving a relevant document.

It is reasoned that probabilistic indexing should improve retrieval effectiveness by allowing the indexer to assign index terms that are partially or possibly descriptive of subject content as indicated by the weights assigned to those terms. This may actually simplify the indexing task and will certainly make it more logical.

In its most limited sense, *probabilistic indexing is a technique for assigning weights to index terms used to tag or describe documents or requests.* The weights are manually determined by an indexer who estimates the probability, w_{ij}, that if an individual desires information of the type contained in the document D_i, he will use the assigned index term I_j when requesting that information. Obviously, the same weighting scheme is used for analyzing a request, although the rationale for assigning weights is slightly different. The information specialist assigns weighted index terms to the request by estimating the probability that if those terms were used in searching the literature, the requester would find the retrieved documents relevant to his needs. A guide for use in assigning weights when indexing documents is reproduced in Table 1.

As an example, $w_{ij} = 0.8$ means that after scanning the document, the indexer estimates that the j-th index term is a specific indicator covering most of the major subject matter contained in the i-th document. Conversely, if the index term is relevant but is too narrow to cover the entire major subject of the document, a weight of $w_{ij} = 0.5$ could be assigned. It is important to note that the weights are assigned manually on an a priori rational basis.

Probabilistic indexing differs from conventional indexing in that the indexer has

TABLE 1

A Guide for Assigning Probabilistic Weights[a]

Weight	Description	When used
8/8:1.000	Major subject	The term is highly specific and covers an entire major subject of the document.
7/8:0.875	Major subject	The term is specific and covers most of a major subject of the document.
6/8:0.750	More generic subject	The term is too broad and covers a major subject.
5/8:0.675	Other important terms	Terms that would be used in a binary indexing, but not major subjects.
4/8:0.500	Less generic subject	The term relates to, but is too narrow to cover, a major subject.
3/8:0.375	Minor subject	Includes such terms as relate to results of experiments, intermediate methods, possible uses, etc.
2/8:0.250	Other subjects	Other relevant tags.
1/8:0.125	Barely relevant	Subjects classifier would not want to use but feels that some users might consider relevant.

[a] From Ref. 2, p. 63.

the opportunity of weighting the appropriateness of the index term rather than making an all-or-none decision. Any values from 0.1 to 1.0 can be assigned. The eight divisions in Table 1 simply provide guideposts as aids in selecting weights.

Relevance Weighting: Derivation of the Relevance Number

The goal of probabilistic indexing is to improve the effectiveness of computer-based information storage and retrieval systems by increasing the recall and precision ratios,* by reducing the semantic noise in the system, and by making it possible to rank documents according to their relevance to a given request for information. To achieve this goal, it is first necessary to develop a quantitative measure for relevance so that one can decide that for request R, document D_1 is more relevant than is document D_2. The problem of measuring document relevance is similar to the problem of measuring the amount of information in a message. Shannon, in his work on information theory, was able to measure the amount of information in a message in probabilistic terms (*4*). Relevance can also be explicated probabilistically by means of Bayes's theorem. The formula derived by the inverse inference schema using the elementary calculus of probability is (Ref. *3*, p. 221):

$$P(A \cdot I_j D_i) = \frac{P(A,D_i) \cdot P(A \cdot D_i,I_j)}{P(A,I_j)}$$

where $P(A \cdot I_jD_i)$ is the probability that if a library user requests information by specifying index term I_j, he will be satisfied with document D_i; that is, document D_i would be considered relevant to the request.

The following classes of events are considered in the formula:

A is an event, in this case the requesting of information from the library

D_i is the probability of obtaining the i-th document and finding it relevant

I_j is the probability of requesting information on a specified subject by using the j-th index term, i.e., I_j

The events can be combined as follows:

$P(A,I_j)$ is the probability that when requesting information from the library system, the requester will use index term I_j. This term is a constant determined by the frequency with which term I_j is used in the library.

$P(A,D_i)$ is the a priori probability that when requesting information from the library system, document D_i will be retrieved. The value of this term is determined by the number of uses of document D_i divided by the total number of document uses. It is an a priori probability based upon use statistics in the library system.

$P(A \cdot D_i,I_j)$ is the probability that if a library user wants information of the kind

* At the time when the concept of probabilistic indexing was first formulated, the recall and precision ratios for measuring retrieval effectiveness had not yet been developed.

contained in document D_i, the request will be formulated in terms of I_j. The value of this term may be estimated by the weight with which the i-th document is indexed with the j-th term.

$P(A \cdot I_j D_i)$ is the probability that if a user requests information by specifying index term I_j, document D_i will be considered relevant. This term is the *relevance number.* It is equal to the a priori probability that when requesting information, document D_i will be retrieved, times the probability that the user will request information by specifying index term I_j, divided by a constant related to the number of times that the particular index term has been used in the library system.

All of the above values can be estimated and the relevance number computed.

Experimental Validation

Having derived a method for computing the relevance number, it is necessary to experimentally verify its validity and to determine whether or not the technique of probabilistic indexing improves retrieval effectiveness. Maron and his colleagues conducted a series of experiments in which their first hypothesis stated that: Given a request, the computed relevance numbers are, in fact, a measure of the probable relevance of the documents (Ref. *3*, pp. 231–241). Operationally, this basic hypothesis can be stated as a series of three hypotheses.

H_1 : if a document is relevant to a request, then a high number $w_i(R)$ will be derived for it.

H_2 : if a document has a high number $w_i(R)$, then it is relevant to the corresponding request.

H_3 : the method of probabilistic indexing will derive a high number $w_i(R)$ for an arbitrary document if and only if the document is relevant to the request.

In order to test these hypotheses, an experimental library was created consisting of 110 articles dealing with the physical sciences selected from *Science News Letter.* These articles were first indexed in a conventional manner. The uncontrolled key words were grouped into 47 index term categories. Then the articles were reindexed using probabilistic weights assigned to these 47 index terms. Forty fairly broad search questions were formulated with reference to a randomly selected set of documents. These requests were also assigned weighted index tags.

For each request, the experimental library was searched and all documents satisfying the logic of the request were retrieved. Relevance numbers were computed; these were normalized by multiplying each by the reciprocal of the highest value so that all relevance numbers would vary from 0.0 to 1.0. In addition, four individuals read the retrieved documents and for each document decided whether they considered it to be (1) Very relevant, (2) Relevant, (3) Somewhat relevant, (4) Only slightly relevant, or (5) Irrelevant.

The results of the experiment are summarized in Table 2. The data clearly show that computed relevance numbers are highest for documents in category 1 (very rel-

TABLE 2

Comparison of the Computed Mean Relevance Number with Manual Document Ratings*

Document rating	Mean relevance number	Variance
1. Very relevant	0.81	0.043
2. Relevant	0.72	0.053
3. Somewhat relevant	0.54	0.043
4. Only slightly relevant	0.40	0.110
5. Irrelevant	0.18	0.013

*From Ref. 2, p. 81.

evant), decrease as one goes down the relevance scale, and are lowest for category 5 (irrelevant). These results confirm the experimental hypotheses and provide statistical evidence that probabilistic indexing and document ranking by relevance number do improve retrieval effectiveness (Ref. 2, p. 81).

Probabilistic Indexing in Automated Systems

The original experiments on the use of probabilistic indexing and the computation of relevance numbers were manual operations; that is, the documents were indexed manually and probabilistic weights were assigned manually. In spite of the claim that it is no more difficult to index documents probabilistically than it is to do so conventionally, no large-scale operational system uses probabilistic indexing. However, the technique has been used in experimental, automated retrieval systems, particularly the SMART system (5), with excellent results.

The essence of probabilistic indexing is the use of weighted index terms to characterize a document and/or a request. Additionally, probabilistic indexing implies that the probable relevance of a document to a given request can be computed and that the output of the search can be presented to the user in a ranked order of probable relevance rather than in a random order. All three criteria, that is, use of weighted index terms, document relevance assessment, and ordered output, have been incorporated in the SMART system and have resulted in enhanced retrieval effectiveness. Procedurally, the following steps are employed (Ref. 6, p. 20).

1. Individual words contained in document abstracts and queries are isolated; function words listed in a negative dictionary are removed from the content word list; suffix endings are cut off so as to combine words with the same stem. These operations are preliminary.
2. Weights are assigned to the content words based on the frequency of occurrence of the word stems in the document abstracts or query formulations. *This is the automatic version of probabilistic indexing.* Note that the criteria for assigning weights has been changed from how well the term covers the subject of the document to how frequently it occurs in the document abstract.
3. The resulting weighted word-stem vectors representing documents and queries

are compared, and a correlation coefficient is computed for each query-document pair reflecting the similarity between corresponding vectors. *In effect, relevance numbers are computed.*

4. Document citations are presented to the user in decreasing order of the correlation coefficients. *The retrieved documents are ordered by probable relevance to the request.*

The use of automatically generated probabilistic indexing and document ranking resulted in the improved recall and precision performance of the SMART system. These results are summarized in Table 3. In actual practice, further improvement in retrieval performance was achieved by adding an automatically generated thesaurus and user feedback. With these new features added, SMART actually outperforms MEDLARS.

Probabilistic indexing, in all of its major aspects, has demonstrated value in automated document storage and retrieval systems.

Probabilistic Models of Automatic Indexing

Probabilistic indexing is being further developed, and in a somewhat different direction, by Bookstein and Swanson (*7*) and by Harter (*8*). In its original meaning, "probabilistic indexing" implies a technique of manually assigning weighted index terms based upon estimates of how completely the assigned terms describe the content of a document. In more recent usage the terms "probabilistic indexing" and "probabilistic models of indexing" are used to describe a statistical, that is, probabilistic, procedure for identifying classes of words in documents that convey subject meaning in varying degrees, and to distinguish these classes from words that are not

TABLE 3

SMART–MEDLARS Comparison Showing Importance of Weighted Indexing and Document Ranking*

Analysis method	Recall	Precision
MEDLARS (index terms assigned by trained indexers)	0.3117	0.6110
SMART (use of unweighted word stems)	0.1814 (−42%)	0.4141 (−32%)
SMART (weighted indexing and documents displayed in order of probable relevance)	0.2622 (−16%)	0.4901 (−19%)

* This table was adopted from Salton (Ref. *6*, p. 21). It was first published in Salton, G., "A New Comparison Between Conventional Indexing (Medlars) and Text Processing (SMART)," *JASIS*, 23(2), 75–84 (March–April 1972).

useful in conveying subject meaning. The basic idea, developed in the papers by Bookstein and Swanson, and by Harter, is that noncontent, nonfunction words such as "obtain," "study," "report," etc., can be expected to be distributed randomly among a set of documents, while content or specialty words such as "lasers," "pathology," etc., tend to cluster in a relatively few documents and are not distributed on a random or chance basis. A probabilistic model is proposed in which the distribution of word tokens over documents is described according to a Poisson process.

The model was tested on a corpus of 650 abstracts, and it was found that "most non-content words have distributions much closer to what would result from a random process than is the case for words useful for indexing" (Ref. 7, p. 318). Thus it is shown that useful index terms can be distinguished from nonindex terms. The probabilistic model of indexing provides a statistical basis for automatically selecting suitable index terms from document abstracts and can be used in fully automatic retrieval systems.

Summary

The effectiveness of an information retrieval system is in large part dependent upon the procedures used in indexing the documents which are stored therein. When conducting a search, the terms in the query are matched against the document index terms, and when a match occurs the document is retrieved. In theory all retrieved documents should be relevant to the requester's needs. However, for a number of reasons this is not the case. Both documents and requests may be analyzed incorrectly, that is, a wrong index term may be assigned. Although this type of error does occur, it probably does not account for a large proportion of retrieval errors. Much more serious is the problem of semantic noise, which is due to a lack of exact correspondence between the concept being described and the authorized index term. The term may be either more general or more specific than the concept, or it may correctly describe only an aspect of the document content but not the main topic. Probabilistic indexing is a technique which has been designed to reduce semantic noise by weighting the assigned index terms according to how well and how completely they describe the subject content of the document. In addition, probabilistic indexing requires that the probable relevance of all retrieved documents to a given request be calculated and that each be assigned a relevance number. When presenting the output of a search to the requester, the documents are first ranked in descending order of probable relevance, that is, with the most relevant document heading the list.

The original experiments by Maron presented a model for manually assigning probabilistic indexing weights and computing document relevance numbers. The experimental results indicated that probabilistic indexing can improve retrieval effectiveness.

Salton has shown that in a computer-based retrieval system, indexing weights could be assigned automatically on the basis of word occurrences in the document

abstract, and that these frequency weights can be interpreted and used in an analogous manner to the manually assigned probabilistic indexing weights. He again demonstrated that the use of weighted index terms improves retrieval effectiveness.

Harter, and Bookstein and Swanson described probabilistic models which can be used to distinguish those words in documents that make good index terms from words that are less useful as index terms.

Together, these studies lead to the conclusion that probabilistic indexing improves retrieval effectiveness and can be done automatically as part of machine input processing. It is both simple and effective and should find increasing acceptance in automated information storage and retrieval systems.

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HAROLD BORKO

PROGRAM EVALUATION AND REVIEW TECHNIQUE (PERT) AND CRITICAL PATH METHOD (CPM)

Introduction

The elements of the management process have been variously described, analyzed, and broken up for study by Henri Fayol, Lewis C. Sorrell, Paul Howard, Donald Coney, Catheryn Seckler-Hudson, William G. Scott, William Newman, and hosts of others. The listing which has become probably the most widely known is that

contributed by Luther Gulick in his coined word, POSDCORB, as he presented it in his essay on "Theory of Organization." POSDCORB stands for the following processes (*1*):

Planning
Organizing
Staffing
Directing
Coordinating
Reporting
Budgeting

Classic literature in the comprehensive field of management, business administration, and industrial engineering would include such authors as Henri Fayol, Frederick Winslow Taylor, Mary Parker Follett, George Elton Mayo, James D. Mooney, Luther Gulick, Lyndall Urwick, and Dwight Waldo. A few of these pioneers and their major contributions have been tabulated by Stone (*2*). For history and early reviews of scientific management, Gilbreth and Drury may be consulted.

According to Drucker, organized study of "work" did not begin until the closing decades of the 19th century. Frederick W. Taylor was the first man in recorded history who deemed work deserving of systematic observation and study. Work is impersonal and objective. Work is a task. It is a "something." Work has a logic. It requires analysis, synthesis, and control. The first step toward understanding work is to analyze it. This, as Taylor realized a century ago, means identifying the basic operations, analyzing each of them, and arranging them in logical, balanced, and rational sequence.

But then work has to be synthesized again. It has to be put together into a process. We need principles of production which enable us to know how to put together individual operations into individual jobs, and individual jobs into production. Some of Taylor's fellow pioneers, especially Gantt, saw this clearly. The Gantt Chart—in which the steps necessary to obtain a final work result are worked out by projecting backward, step by step from end result to actions, with their timing and their sequence—though developed during World War I, is still the one tool we have to identify the process needed to accomplish a task, whether making a pair of shoes, landing a man on the moon, or producing an opera. Such recent innovations as Program Evaluation and Review Technique, Critical Path Method, and network analysis are elaborations and extensions of Gantt's work (*3*).

Operations Research

The activity called Operations Research (OR) developed during World War II. An important consequence of the application of OR to a wide variety of tactical problems is that a small set of problem types has been identified which accounts for most of these problems. Because of the frequent reoccurrence of these prob-

lems, techniques have been developed for modeling them and for deriving solutions from these models. These prototype problems are the following:

1. Allocation
2. Inventory
3. Replacement
4. Queuing
5. Sequencing and Coordination
6. Routing
7. Competitive
8. Search

In these prototype problem categories, PERT–CPM comes under sequencing and coordination.

Review of PERT–CPM

WHAT IS PERT–CPM?

Program Evaluation and Review Technique (PERT) and Critical Path Method (CPM) are time estimation and cost optimization techniques, respectively. They have been interfaced together to create a planning, designing, scheduling, and controlling technique for R&D and construction projects. It is based on a networking technique which establishes the time, cost, and precedence relationships among the activities and events of the network.

BACKGROUND AND HISTORY

Morgan R. Walker of the construction division of the E. I. du Pont de Nemours Company and J. E. Kelley, Jr., of Remington Rand's UNIVAC section are credited with developing the Critical Path Method (CPM), in 1957. In that year this new method was employed by du Pont in the construction of a $10 million chemical plant. Reportedly, du Pont credits this new method with savings of $1 million on maintenance projects at Louisville (*4*).

Concurrently, in 1957, a research team was established by the U.S. Navy Special Project Office to develop a program evaluation technique for the Fleet Ballistic Missile Weapons System development effort. The research team was composed of representatives from the Special Projects Office; the management consulting firm of Booz, Allen, and Hamilton; and the Lockheed Missiles and Space Company. Through the efforts of this team, the Program Evaluation and Review Technique (PERT) was developed and implemented as a research and development project management tool for the Navy's Polaris program (*5*).

In managing the Polaris missile project, the Navy became concerned with techniques for evaluating its progress. A schedule had been established for its development, and a system was set up for reporting the status, progress, and problem areas in terms of accomplishment or slippage (actual or predicted) of important

program milestones. Major components were also evaluated and their status indicated by one of the following terms: "in good shape," "minor weakness," "major weakness," or "critical." These evaluations provided no measure of the impact on the overall program made by accomplishing a milestone or changing the forecast for its accomplishment. Tight schedules had been established for the program, so it was necessary to know the significance of a slip in a scheduled date, its impact on future scheduled dates, and prospect for future slippages, so that corrective action could be taken. As the slips in schedules and the prospects for future slips were studied, "it appeared that the capacity to predict future progress was more limited than desired" (*6*).

As mentioned before, the operations research team was formed of representatives from the Naval Special Projects Office; Booz, Allen, and Hamilton, Inc.; and Lockheed Missile Systems division. This team was to study the application of statistical and mathematical methods to planning, evaluation, and control of the Polaris program. The following objectives were established:

1. To develop a methodology for providing the integrated evaluation of progress to date and the progress outlook, changes in the validity of the established plans for accomplishing the program objectives, and effects of changes proposed for established plans.
2. To establish procedures for applying the methodology, as designed and tested, to the overall FBM (Fleet Ballistic Missile) program.

The team felt that the two major requirements for a program evaluation methodology were (*a*) detailed, well-considered time estimates for future activities, and (*b*) precise knowledge of the required or planned sequence in which the activities were to be performed. Since the time required to perform development activities is often uncertain, a procedure for quantitatively expressing this uncertainty was desired; this led to the statistical estimation technique, which is a primary feature of PERT. The sequence requirement was fulfilled by use of network plans.

PERT, therefore, was originally developed as a technique for evaluating established plans and schedules, but its utility is not limited to this. PERT can also be used as a planning and scheduling technique. The PERT technique for estimating elapsed times provides a way of handling some of the uncertainties in estimating the time required to perform many types of activities (*7*).

Project Planning and Control

Network plans are developed by first studying the project to determine the approach, methods, and technology to be used and then breaking it down into elements for planning and scheduling purposes (*8*). The elements of a project can be classified as follows:

1. Project objectives: These are the goals to be accomplished during the course of the project. In most cases, the project objectives are specified before the plan is prepared; the plan merely prescribes the course to be followed in achieving the objectives.

2. Activities, tasks, jobs, or work phases: These elements identify and describe the work to be performed in accomplishing the project objectives. They normally utilize time and other resources.
3. Events or milestones: These are points of significant accomplishment—the start or completion of tasks and jobs, the attainment of objectives, the completion of management reviews and approvals, etc. They are convenient points at which to report status or to measure and evaluate progress.

After the elements of the project have been determined, they are arranged in the sequence preferred for their accomplishment. This is a synthesis process that must consider the technological aspects of the activities and tasks, their relationships to one another and to the objectives, and the environment in which they will be performed. A network is used to reflect these factors as it portrays the sequence in which the project elements will be accomplished.

Networks are composed of events which are represented by nodes interconnected by directed lines (lines with arrows) which represent activities. Constraints are also represented as directed lines. Elements of the network correspond to elements of the project as follows: points in the network represent project objectives, with the direction of the lines indicating a precedence or sequential relationship; and directed solid or dashed lines indicate constraints.

Activities are the jobs and tasks, including administrative tasks, that must be performed to accomplish the project objectives; activities require time and utilize resources. The length of the line representing an activity has no significance (in contrast to Gantt Charts, where it is the significant factor). The direction of the line, however, indicates the flow of time in performing the activity.

Events are usually represented by small circles or squares. Numbers are used to identify the events and the activity that connects two events. Events represent particular points or instances in time, so they do not consume resources; the resources to accomplish an event are used by the activities leading up to it.

Constraints in network plans represent precedence relationships resulting from natural or physical restrictions, administrative policies and procedures, or management prerogatives, and they serve to identify activities and events uniquely. Constraints, like activities, are represented in a network plan by directed lines. However, constraints indicate precedence only; they do not require resources and normally do not require time. Those constraints which require neither time nor resources are represented by broken directed lines, which are often referred to as "dummy" activities.

PREPARATION OF NETWORK PLANS

The network plan is constructed by drawing directed lines and circles in the sequence in which the activities and events are to be accomplished. There are two general methods which are used in actual construction of a network plan. This section describes the forward method, where construction begins with the start event, and the activities and events are added in sequential fashion to reach the end event. In the backward method, construction begins with the end event and

proceeds backward to the start event. The backward method of network construction is often preferred to the forward method because attention is directed to the project objectives. With the objectives firmly in mind, the activities and events required to accomplish those objectives are often more easily determined.

The network begins with an event called the origin, which usually represents the start of the project and from which lines are drawn to represent activities. These lines terminate with an arrow and a circle representing an event, which may be the completion of a project element or an activity. All activities that are to be performed next are then added to the network plan by drawing a directed line from the previous event. For example, suppose activities B and C are to be performed upon completion of activity A. These three activities and their precedence relationship would be represented in the network plan as indicated in Figure 1. Activities and events are then added until the project is complete. Constraints are added where required. The network plan terminates with the end event.

To progress from one event to the next requires that an activity be performed. Each activity begins and ends with an event. The event at the start of an activity is called a predecessor event, and that at the conclusion, a successor event. Time flows from a predecessor event to a successor event, as indicated by the arrow, and is normally from left to right throughout the network. As each activity is added to the network, its relationship to other activities is determined by answers to the following questions:

1. What activities must be completed before this activity can start?
   Activities that must be completed first are predecessor activities.
2. What activities can start after this activity is completed?
   Activities that can start after are successor activities.
3. What activities can be performed at the same time as this activity?
   Those activities are concurrent, or parallel, activities.

In preparing the network plan, administrative activities must be included, such as the preparation of contracts, the procurement of parts, and the preparation of test procedures, specifications, and drawings. Technical work often cannot begin until a contract has been awarded or long-lead-time articles have been procured. A test cannot be started until specifications and drawings have been prepared and approved.

Two activities with a predecessor–successor relationship are called *sequential* activities. Performing activities in sequence requires that the start of the successor

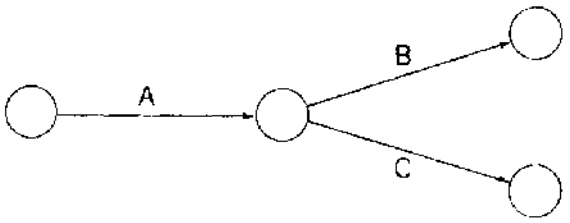

FIGURE 1. *Simple network plan.*

activity depends upon completion of the predecessor activity. Activities performed concurrently must be independent of one another. Independent activities may have a common predecessor event or a common successor event, but not both.

Suppose, for example, that activities B and C can be performed concurrently but that both are dependent upon the completion of activity A; activity D can be started after both B and C are completed. The relationships would then be represented as illustrated by Figure 2. The constraint, or dummy, activity is needed between activities B and D so as to identify activities B and C uniquely by their predecessor and successor events. Figure 3 gives some examples of proper and improper networking.

ANALYSIS OF NETWORK PLANS

The project network plan displays the activities, events, and constraints, together with their interrelationships. For the network to be useful in planning and controlling the project, time estimates must be made for the various activities which constitute the project.

A *network path* is a sequence of activities and events traced out by starting with the origin event and proceeding to its successor event, then to another successor event, etc., until the terminal event is reached. The *length* of a network path is the sum of the time estimates for all those activities on the path.

After activity time estimates have been made, an earliest and latest time for each event may be calculated. The *earliest time* for an event is the length of the longest path from the origin to the event. Thus, it indeed represents the earliest time at which the event can occur (relative to the timing of the origin event). The earliest time for the terminal event is the length of the longest network path. It therefore represents the shortest time required to complete the entire project.

The *latest time* for an event is the latest time at which the event can occur relative to the timing of the terminal event. If one imagines that the direction of each activity is reversed, the latest time for an event is determined by the length of the longest path from the terminal event to the event in question.

In calculating earliest event times, the general practice is to consider that the origin event occurs at time zero. The earliest time for each event is the sum off the earliest time for the predecessor event and the time for the predecessor activity..

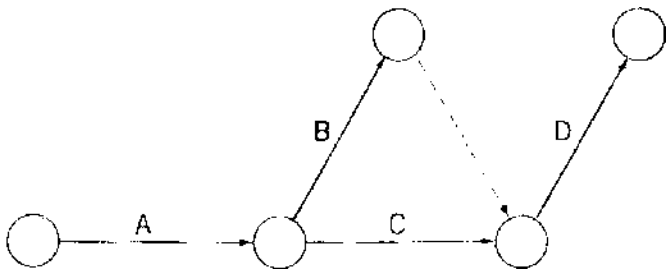

FIGURE 2. *Network plan: correct predecessor–successor relationship.*

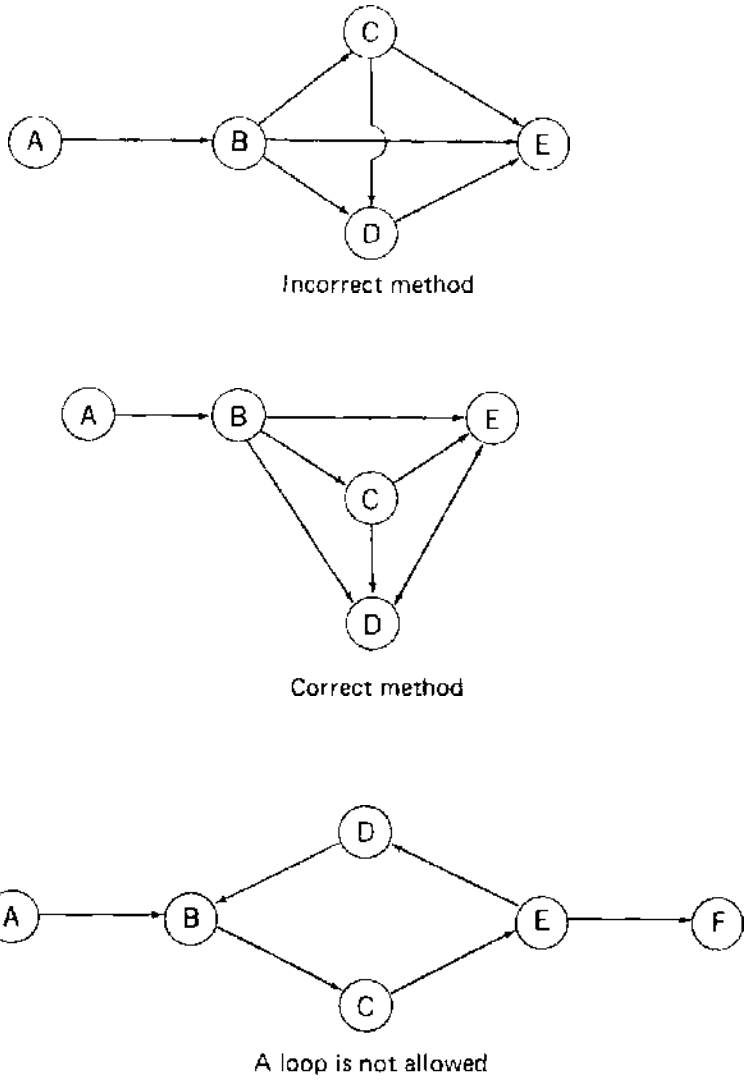

FIGURE 3. *Examples of proper and improper networking.*

If an event has more than one predecessor event, this calculation is made for each of them, and the largest sum is selected as the earliest time for the event. This is so because the earliest time is the length of the longest path from the origin to the event.

To calculate the latest time for an event, the latest time for the terminal event is usually initially set equal to the previously computed earliest time for the terminal event. Then, for each event, the time for its successor activity is subtracted from the latest time for its successor event. The result is the latest time for that event. If an event has more than one successor event, this calculation is made for each, and the smaller result is used as the latest time for the event. This is compatible with the view of the latest time for an event as the longest path from the terminal event backward to the event in question.

Using these basic activity, event, and path measures, a number of network measures may be developed to aid in network analysis.

Event slack is the difference between the latest time and the earliest time for an event. The slack for an event is the difference between the length of the longest network path and the length of the longest network path through the event. Hence, event slack is a property of a particular network path.

The most important use of event slack is in identifying the critical path. The *critical path* is the longest network path. Thus, its length determines the minimum time required for completion of the entire project. *Critical events* are those events on the critical path. To identify critical events, one need only determine those events with the smallest amounts of event slack. Their identification is usually sufficient to identify the critical path; however, they need not uniquely identify it.* The operational significance of the critical events is that they are the pacing elements of the project. If the project is to be expedited, the accomplishment of at least one of the critical events must be expedited. If there is a delay in the actual accomplishment of *any* critical event, the completion of the project will be delayed.

USING NETWORK PLANS IN PLANNING AND CONTROLLING A PROJECT

The construction of a network plan is a part of the planning function of project management. Network analysis makes use of the project plan to aid in scheduling a project.

Whether one is planning, scheduling, or controlling a project, the central idea involved in using network plans is the principle of *management by exception*. Stated simply, this means that it is the exceptions which require the attention of management. In the case of a project, the exceptions are the activities on the critical path, for it is they that pace the completion of the project.

If a project is to be expedited, some way must be found to hasten the accomplishment of critical events. Moreover, if the project is under way and the events on the critical path are not being accomplished according to plan, the project will be delayed if no way is found to hasten the completion of other critical events.

The application of the principle of management by exception in such projects usually takes the form of reallocating resources from noncritical activities to critical ones. This may be accomplished in either the planning or the control phase of the project; that is, it may be done so that an earlier project completion date can be set up, or it may be done because the project is falling behind schedule. Presumably, such reallocations will permit faster accomplishment of critical activities and, hence, faster completion of the project itself.

A number of techniques have been developed for accomplishing these ends. Among them CPM, PERT-Time, and PERT-Cost are the best known and most widely used. After the network is prepared, the PERT planners obtain three elapsed

* See Thomas L. Healy, *Project Administration Techniques* (National Cash Register Co., Dayton, Ohio, April 1, 1963), for details of those special situations in which this may be the case.

time estimates for each activity: the shortest, the longest, and the most probable. These three estimates are used to compute the expected time required to perform each activity and a measure of the probability of accomplishing the activity in that time. The expected time estimate for each activity is used in analyzing the network. Variabilities in activity times are accumulated along the network paths in the same manner as activity times are accumulated, and they provide a measure of variability for each event. The variability associated with an event can be used to make statistical inferences about the occurrence of the event at a particular time, such as: the likelihood that the project will be completed by its scheduled completion date is 34%.

The PERT approach requires obtaining the activity time estimates from the people who are responsible for performing or for supervising the performance of the activities. The person directly responsible for the activity should be asked to make the estimate because he is most knowledgeable concerning its inherent difficulties and the variability in its accomplishment. Scheduled times cannot be used because they are not adequately responsive to changing conditions, contain no information on variability, and are often made under conditions and in an environment that do not reflect the technical aspects of the activity. A single elapsed time estimate would not, by itself, provide a measure of the variability in the time; this requires a range of estimated elapsed times. Estimates of the extreme times, reflecting the optimistic and pessimistic times, can usually be given with some degree of reliability, however, and it is felt that the most likely time estimate lies somewhere within this range.

The three elapsed time estimates, referred to as the *optimistic*, the *most likely*, and the *pessimistic* times, are defined as:

> *Optimistic time* is the shortest time in which the activity can be accomplished. There should be practically no hope of completing the activity in less time than this, but if everything goes exceptionally well, it should be possible to accomplish it in approximately this time.
>
> *Most likely time* is the normal or most realistic time required to accomplish the activity. If the activity were to be repeated numerous times under the same conditions and without any "learning-curve" effects, it would be accomplished most frequently in this time. (The most likely time is not the expected time, but an estimate based on experienced judgment; the expected time is a mathematically computed value.)
>
> *Pessimistic time* is the longest time required to accomplish the activity assuming unusually bad luck (e.g., major redesign or major reshuffling of planned action). The pessimistic time estimate should include such possibilities as initial failure and a second start, but not major catastrophic events such as strikes, fires, tornadoes, etc.

The range between the optimistic and the pessimistic time estimates is used in PERT as a measure of the variability of uncertainty in accomplishing an activity. If there is no uncertainty, all the time estimates will be the same, and the range will be zero. If there is considerable uncertainty, the range will be large. The time estimates must necessarily be based on planned assumed resources. The most likely time estimates must be based on the same level of resources that is used for estimat-

ing the optimistic and pessimistic times. For example, the optimistic time estimate must not be based on an extra shift or additional personnel if the most likely time estimate is based on a normal shift and fewer personnel.

The most likely time estimate should be made first so that the estimate considers the available or planned level of resources and appraises the technical aspects of the activity realistically. The optimistic estimate can then be made, based on the same resources but with the assumption that everything goes exceedingly well. The pessimistic time estimate is made last, assuming that problems arise. The time estimates for each activity must be made independently and should not include a pad to cover possible delays.

An important property of the computed expected times is that they are added to calculate an earliest time, and this earliest event time is also an expected event time and has a probability of 50%. This probability would not hold if most likely time estimates were summed in a similar fashion.

Efficacy of PERT

PERT has attracted considerable attention, which, to date, has probably been more extensive than its range of applications. The following comments and criticisms provide a measure of understanding of the basic technique.

Many feel that because the three time estimates are subjective, the estimator's personal bias will be introduced.* A fundamental principle of PERT is that the three estimates are to be made by persons who are most familiar with the technical aspects of the activities and therefore are best qualified to make the time estimates reflecting uncertainties involved in technical activities. Asking for three time estimates tends to remove the psychological barrier often encountered when only a single estimate is given, since a time range does not imply a commitment such as a single estimate does; and allowing the estimator to make a pessimistic time estimate permits him to provide for unforeseen contingencies that would probably be included as a pad in a single estimate. The effects of personal biases are felt to be cancelled in the analysis of the network, since estimates of optimists are offset by estimates of pessimists.

Another controversial aspect of PERT pertains to use of computed expected times for scheduling. It can be shown that PERT assumptions provide optimistic expected times. Therefore, many feel that scheduled times should be later than computed expected times. But some argue that automatically setting schedules later than expected times may increase the likelihood of schedule slippages and that expected times should not be automatically used for establishing schedules. The

* W. R. King and T. A. Wilson have hypothesized that a historical analysis of time-estimating behavior can lead to the development of adjustment models. Such models could be used to adjust time estimates on the basis of historical estimating behavior. The adjusted estimates would presumably be superior to unadjusted ones. See "Subjective Time Estimates in Critical Path Planning: A Preliminary Analysis," *Management Science*, 13(5), (January 1967).

basis for this argument is that the computed expected times provide for slippage, and since roughly half the activities will be completed in less than their expected times and half will require more than their expected times, one will balance out the other. In actuality, however, R&D activities usually take as long as their schedules permit and are seldom completed ahead of schedule. Thus, schedule slippages occur in R&D activities which were not contemplated when schedules were prepared.

The validity of PERT expected time is another controversial matter. Where PERT is applied to the early stages of weapons-system development programs, the critical path is frequently one and one-third to two times as long as the originally planned program. No doubt the greater attention to detail that is necessary in applying PERT accounts for part of the additional time. A study of completed Air Force weapons-system development programs conducted independently of any PERT considerations, however, indicated that extensions of development time by one-third to one-half over the originally planned program were the rule rather than the exception (*9*).

Advantages of Networking

Predicated on practical experience in the use of critical path methods, the following advantages have been observed (*10*):

1. Provides a stimulus for long-range planning with considerable detail
2. Facilitates the documentation and communication of the planning and control elements of a complex project
3. Projects the critical path through the network, thus permitting management to concentrate on the 10–20% of the total activities which require the most judicious allocation of the resources (management by exception)
4. Determines the impact on the total system resulting from a change in the original allocation of time and/or money

PERT–CPM and Other Management Tools

There are quite a number of management tools that are available to a manager for project planning and scheduling. These are all useful techniques but they all have drawbacks and inadequacies, particularly when we come to the handling of projects, plans, and designs involving large numbers of interdependent activities, mutually dispersed in time and space, and having an element of uncertainty associated with most of them. PERT–CPM has been developed to handle this kind of problem.

As mentioned before, the predecessor of PERT–CPM is the Gantt Chart, named after one of the early pioneers of scientific management, H. L. Gantt. The Gantt Chart, also known as bar chart, is one of the most widely used planning techniques. It consists of a number of bars plotted against a calendar scale, each representing

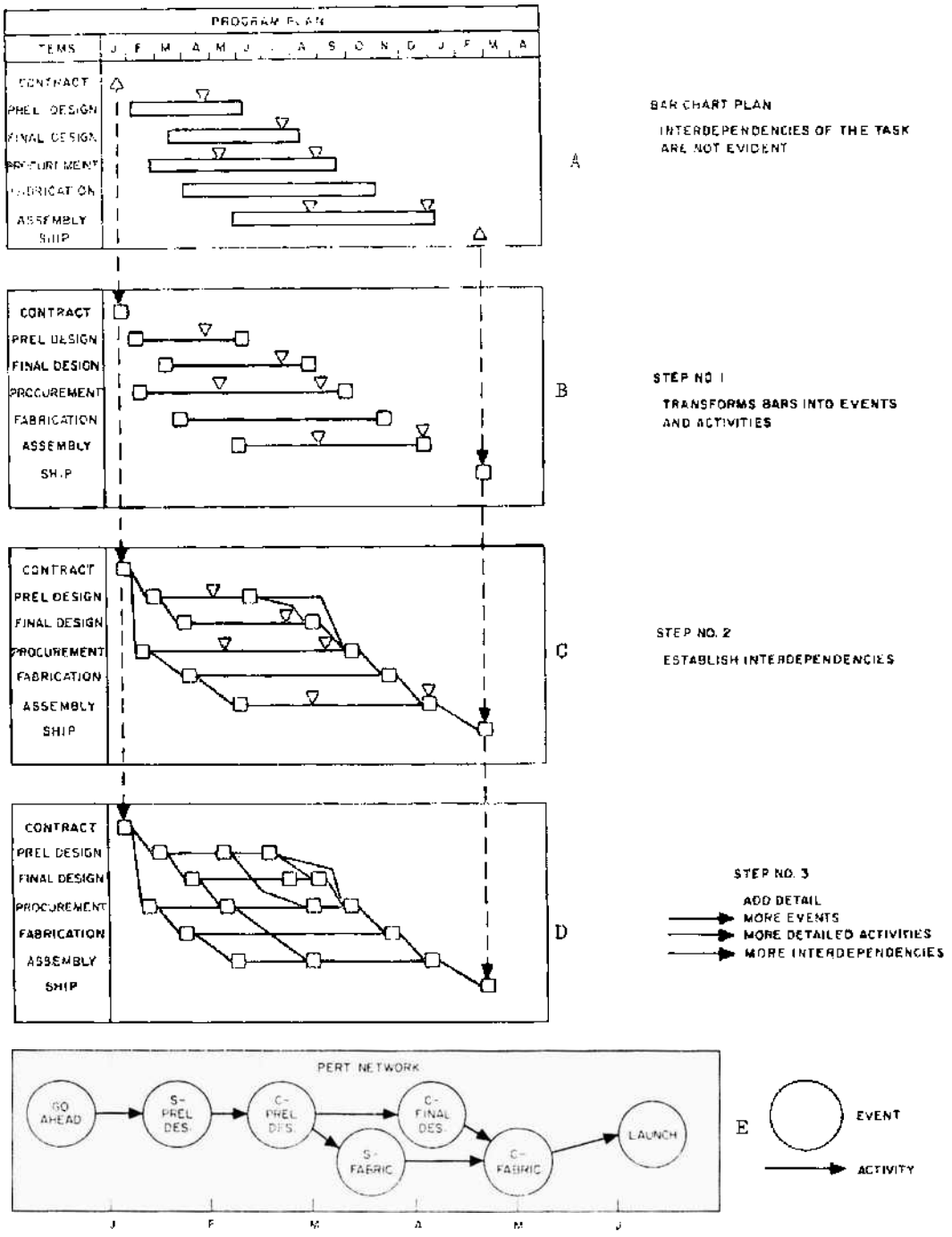

FIGURE 4. *Evolution of the bar chart to the network plan concept. Reprinted, by permission,, from B. N. Baker and R. L. Eris,* An Introduction to PERT–CPM *(Richard D. Irwin, Homewood, 1964), p. 54.*

the beginning, duration, and end of some part of the total project. Though widely used, it has some serious drawbacks. These include:

1. The lack of recognition of the interdependencies which exist between the efforts represented by the bars
2. The static scale, which makes it difficult to reflect easily the dynamic nature of changing plans
3. The inability to reflect uncertainty or tolerances in the estimation of time (*11*)

But most of these difficulties can be solved by using PERT–CPM. The network approach of PERT-CPM makes it possible to indicate the interdependencies that exist between activities represented by the bars. Bar charts indicate which activities are currently behind schedule, but the downstream impact of these slippages on other activities cannot be readily ascertained, nor can the criticality of some activities be identified. The critical path approach of PERT–CPM enables the manager to concentrate his attention on the critical activities and reallocate resources if necessary. The statistical technique used to compute the "expected time" of an activity lets PERT–CPM handle the problem of uncertainty and identify the critical path through the network. Evolution of the bar chart technique to the network plan technique is illustrated in Figure 4 (*6*).

Figure 4(a) shows a number of bars plotted against a calendar scale, each representing the beginning, duration, and end of some part of the total project. The small arrowheads point to some milestone events. From this figure one would not get any idea as to how the bars interrelate to each other, how an interrelationship is going to affect the project as a whole, and how optimally a slippage could be handled, should one occur. Figure 4(b) transforms the bars into activities (lines) and events (squares).

Figure 4(c) establishes interdependencies between the events at a relatively macro level; and Figure 4(d) takes it to a relatively micro level, adding more detail, incorporating more events and activities, and showing more interdependencies. Finally, Figure 4(e) shows a simple PERT network. The S's and C's inside the events mean "start" and "complete," respectively. With its time estimation and cost computation capabilities, coupled with the ability to identify the critical activities and path through the network, PERT–CPM has become a very powerful technique for R&D and for project planning, scheduling, and control; and above all, it lets one manage by exception. However, this need not preclude us from using other techniques in conjunction with PERT–CPM to complement one another, such as line-of-balance (LOB, see Figure 6).

A typical family of networks is illustrated in Figure 5, showing a successive blow-up technique of activities between milestones (*5*). Figure 5(a) shows a summary of major milestones of the project; these milestones are important target events of the project such as completion of a software package or assembly of a hardware system.

At the level 1, Figure 5(b), some activities between milestones (rather than just milestone-to-milestone link) have been indicated. At the level 2, Figure 5(c), the

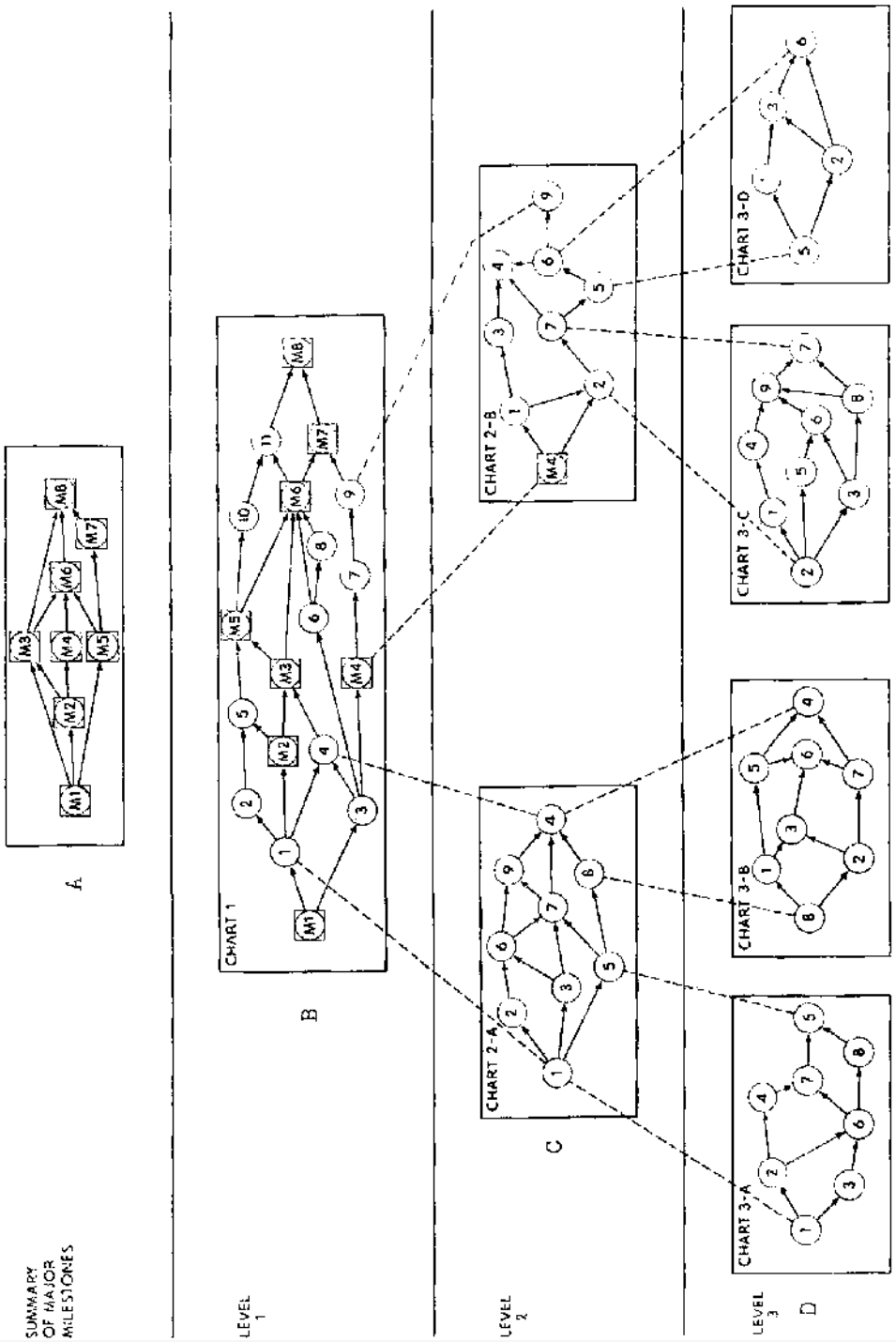

FIGURE 5. *Typical family of networks. Reprinted, by permission, from B. N. Baker, and R. L. Eris,* An Introduction to PERT–CPM (*Richard D. Irwin, Homewood, 1964), p. 46.*

activity 1–4 of level 1 has been expanded (chart 2-A); the same has been done for activity M4–7 and 7–9 of level 1 (chart 2-B).

At the level 3, Figure 5(d), the activities of level 2 have been expanded as follows: activities 1–5 and 8–4 of chart 2-A are expanded in charts 3-A and 3-B, respectively; and activities 2–7 and 5–6 of chart 2-B are expanded in charts 3-C and 3-D, respectively.

Some of the different planning and scheduling techniques, besides PERT–CPM, that exist today are illustrated in Figure 6 (*6*). Figure 6(a) is a bar and event chart plotted against a calendar scale, showing progress of the project (solid area).

A milestone chart shows the significant project events, or milestones, in chronological order to form a diagonal from left to right on the chart, Figure 6(b). This technique suffers from drawbacks similar to those of the bar chart. It lacks the ability to measure the impact of slips and changes on the total project or to adequately differentiate between critical and noncritical problem areas.

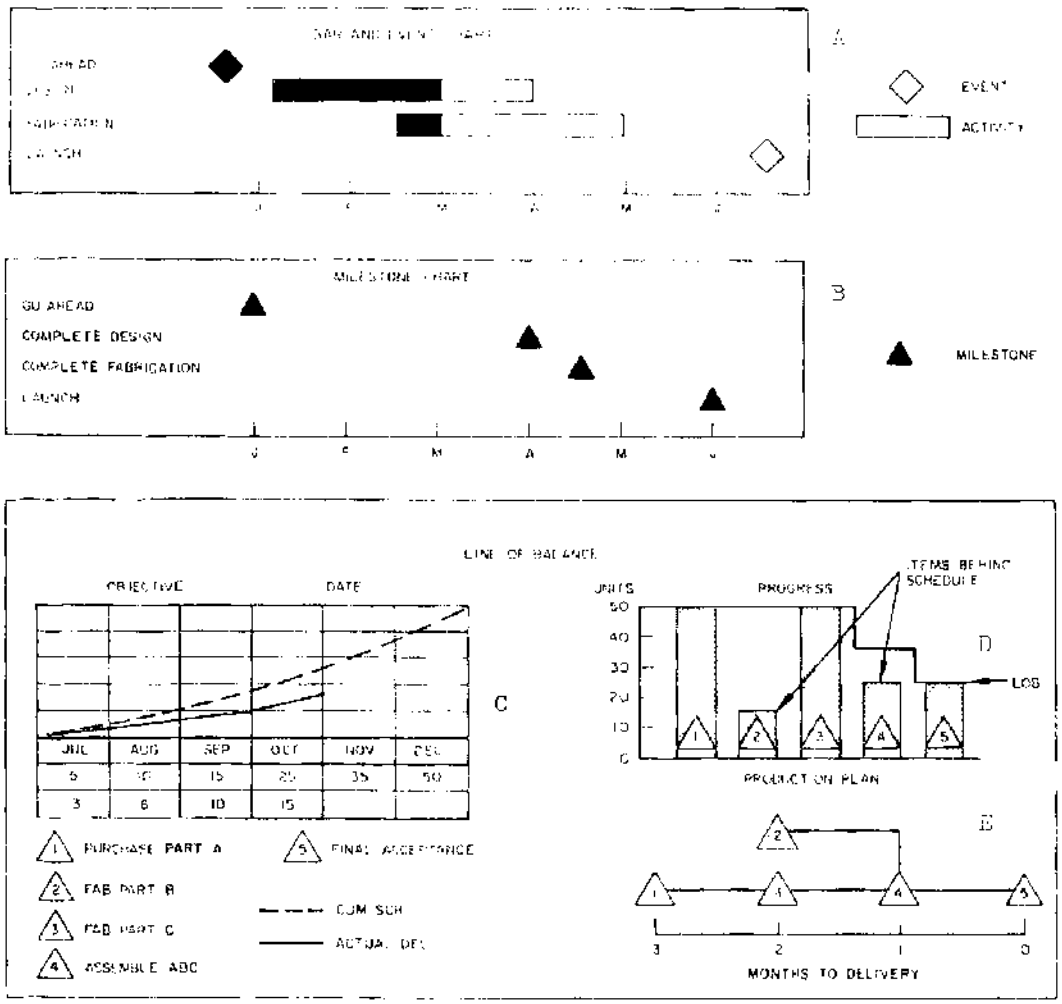

FIGURE 6. *Planning and scheduling techniques. Reprinted, by permission, from B. N. Baker and R. L. Eris,* An Introduction to PERT–CPM *(Richard D. Irwin, Homewood, 1964), p. 55.*

Line of balance (LOB) (*6*) is a production planning and control system which time-schedules key events necessary for completing an assembly [Figure 6(d)], with respect to the delivery dates for the completed system. This management tool uses graphic displays to monitor the progress of production contracts. Production plan progress is bar charted [Figure 6(d), showing items 2 and 4 behind schedule, and the LOB] and compared with the production objective, which is in graphic form [Figure 6(c), showing cumulative schedule (broken line) and objective numbers (2nd row from the bottom), actual delivery (solid line), and numbers representing actual delivery (bottom row)]; and a line of balance is generated to show revised requirements for meeting the scheduled production plans. Figure 6(e) shows months remaining for delivery and uses this as a scale to show the flow and interrelationship of the project events 1 through 5. The "management-by-exception" approach is used here to expose weaknesses in the production program so that correct action may be taken to eliminate the weak areas.

Initially the objectives of PERT and CPM were extremely divergent. CPM was developed within the construction industry where previous experience in similar work can be used to predict time duration and cost within a range. While many of the characteristics of PERT and CPM are the same, one of the essential differences is that PERT recognizes that the actual activity times are not deterministic but, instead, may have considerable chance variation. CPM, on the other hand, ignores the chance element associated with the activities and employs only normal and crash cost/duration for each activity.

As we have seen, PERT was originally designed to plan and control large systems implementation where little past experience has been accumulated. A typical example of PERT would be the research and development required to structure an information system to transfer NASA space technology to industry. No experience is available on information scientists, engineers, programmers, and computer hardware to implement such a system; therefore, it is probable that the times for activities in the network representing this system would have considerable variance. But in the construction of a new library, one could draw from the considerable experience of professional librarians and architects to obtain more reliable estimates of activity times (*10*).

Since CPM has the capability of activity cost optimization, and PERT has the capability of activity time estimation, it seems logical that these two methods will be interfaced (*12*). Thus, although these two methods were developed in different environments over the years, they can most profitably be used in conjunction for planning, design, scheduling, and control (*13*).

PERT Applications: An Example

COMPUTING THE ACTIVITY MEAN ELAPSED TIME t_e

The three time estimates for the network activities are represented by the symbols:

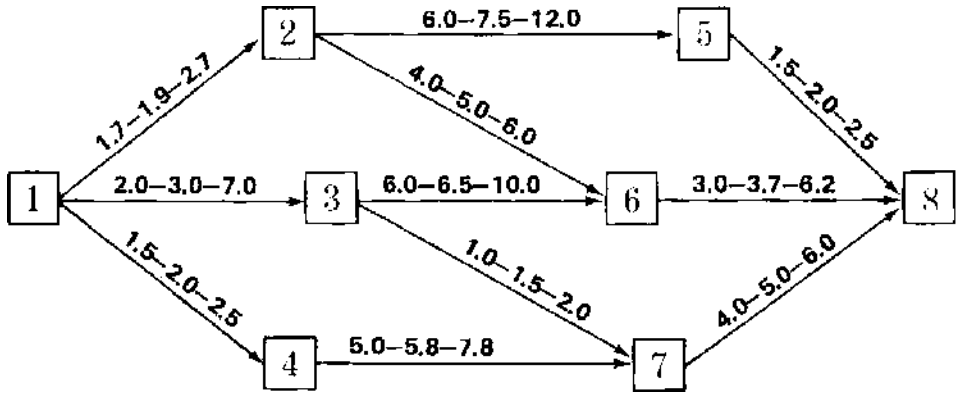

FIGURE 7. *Sample PERT network with three time estimates indicated for each activity.*

t_o = the optimistic time estimate
t_m = the most likely time estimate
t_p = the pessimistic time estimate

A mean elapsed time t_e is computed for each activity using the equation

$$t_e = \frac{t_o + 4t_m + t_p}{6}$$

A suitable time unit is used, such as hours, days, or weeks. Figure 7 shows a PERT network with the three time estimates for each activity placed along the activity arrows. The events are identified by numbers.

Using the above equation, the mean elapsed time t_e is computed for each activity in the network. The results are tabulated in Table 1. These activity mean elapsed time t_e values are now placed along their respective activities in the network, Figure 8.

TABLE 1
Mean Elapsed Time Values

Activity	Optimistic time	Most likely time	Pessimistic time	t_e
1–2	1.7	1.9	2.7	2.0
1–3	2.0	3.0	7.0	3.5
1–4	1.5	2.0	2.5	2.0
2–5	6.0	7.5	12.0	8.0
2–6	4.0	5.0	6.0	5.0
3–6	6.0	6.5	10.0	7.0
3–7	1.0	1.5	2.0	1.5
4–7	5.0	5.8	7.8	6.0
5–8	1.5	2.0	2.5	2.0
6–8	3.0	3.7	6.2	4.0
7–8	4.0	5.0	6.0	5.0

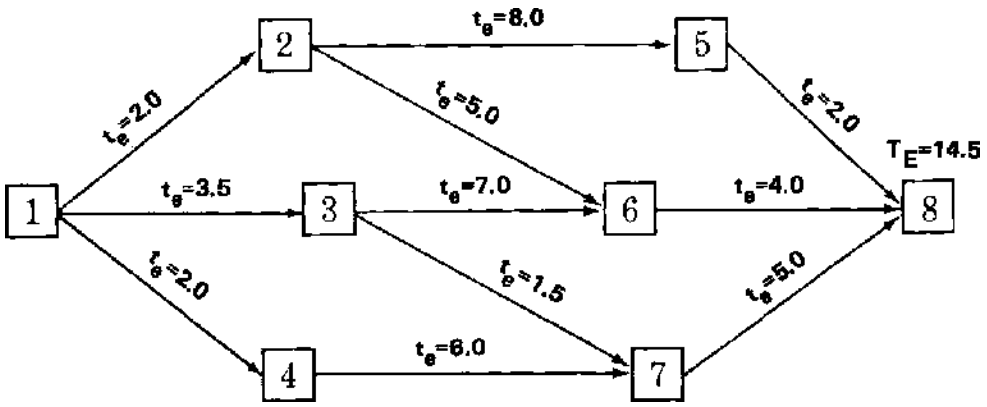

FIGURE 8. *Sample PERT network with mean activity elapsed times.*

DETERMINING THE EVENT TIME T_E

Since we have the t_e values for each activity, now it is possible to compute the time required to reach a given event in the network. We sum the mean elapsed time t_e for each activity along a path leading to an event to get the expected completion time T_E for the event. An event cannot take place until all the paths in the network leading to that event are completed; and most events will have more than one path leading to them, as, for example, events 6, 7, and 8 in our network. For this reason it is necessary to choose the greatest sum of the t_e's of the different paths leading to the event.

In our network, event 8 is the end event and hence the end of the project. So it is important to know how long it will take to complete this event. Since there are five paths leading to this event, it is necessary to identify the longest path (in duration) to establish the correct expected completion time for this end event. Table 2 shows the five paths and their respective activity mean elapsed times t_e's and event times T_E's.

Similarly, it is also important to establish the earliest completion time of every event in the network except the very first, or the lead, event, which is zero. For example, paths 1–2–6 and 1–3–6 both lead to event 6, but path 1–2–6 takes 7

TABLE 2
Mean Elapsed Times and Event Times

Path	Activity mean elapsed times	T_E
1–2 to 5–8	2 + 8 + 2	12
1–2 to 6–8	2 + 5 + 4	11
1–3 to 6–8	3.5 + 7 + 4	14.5
1–3 to 7–8	3.5 + 1.5 + 5	10
1–4 to 7–8	2 + 6 + 5	13

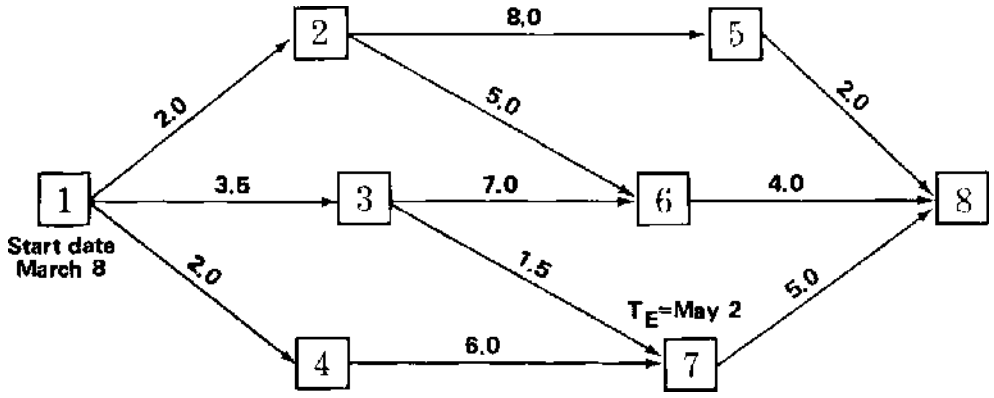

FIGURE 9. *Sample PERT network converting event expected completion time to a calendar date.*

time units and path 1–3–6 takes 10.5 time units. So the T_E for event 6 is 10.5, and not 7.

Thus the expected completion time of any activity in the network will be given by the sum of the event time T_E which starts the activity and the mean elapsed time t_e of the activity itself, that is, $T_E + t_e$.

Network time units can always be related to calendar dates and expressed as such. For example, if in our network the project starts on March 8 (event 1 = March 8) then the T_E for the event 7 will be May 2 (8 weeks or 56 days), Figure 9.

In Figure 10 the T_E for each event has been established by selecting the most time-consuming path of activities leading to each event.

COMPUTING THE EVENT T_L

A PERT network is an interactive network. A delay in the completion of an event may delay the completion of the project itself. On the other hand, some events may be able to accommodate some delay without delaying the completion

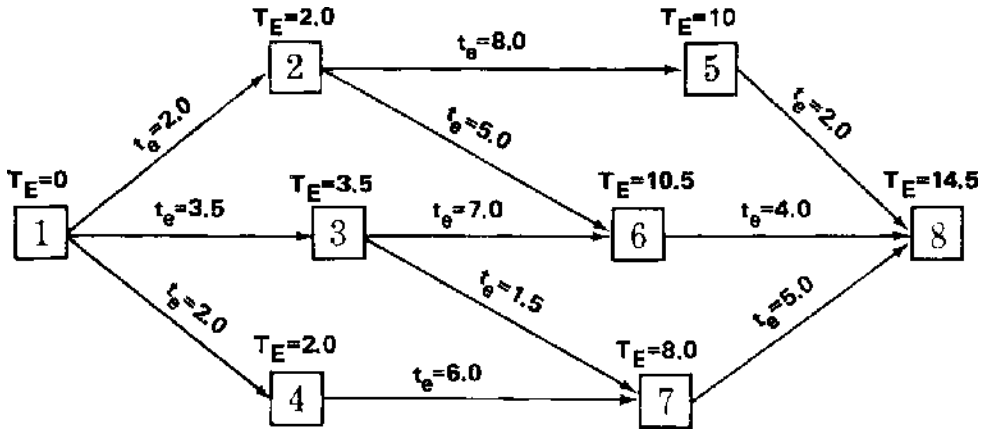

FIGURE 10. *Sample PERT network with event expected completion times.*

of the end event. This is why it is important to establish the latest allowable time T_L for each event in the network. In other words, T_L is the latest time when an event can occur without delaying the whole project.

A scheduled completion date T_S for the project is often written into the contract, or it may be preset by the management. In that case the T_L for the end event cannot be any later than the T_S. When the T_L for the end event is established, it is possible to compute the latest allowable time for each of the preceding events in the network. Following is the algorithm for determining the T_L:

1. Start with the end event. Subtract the t_e of each activity from the T_L of the following event. This way, proceeding backward from the end event, the T_L for each event will be established. For example, T_L for event 7 is T_L of event 8 minus the t_e of activity 7–8 (14.5 − 5.0 = 9.5).
2. If there is more than one activity leading back to an event, the smallest value is taken as the T_L for that event. In Figure 11 the T_L for event 3 is determined as follows:

   T_L for event 6 minus the t_e for activity 3–6, or 10.5 − 7.0 = 3.5

   T_L for event 7 minus the t_e for activity 3–7, or 9.5 − 1.5 = 8.0

   So the T_L for event 3 is 3.5, because this is the smaller value.

The Most Critical Path

Figure 12 shows the activities 1–3, 3–6, and 6–8 in heavy lines. These activities fall on the path 1–3 to 6–8 through the network, and the sum of their t_e's is the largest (see Table 2).

This implies that if any of these activities is delayed, the end event will also be delayed. This is why the most time-consuming path through the network is called the most critical path. But if for some reason the t_e for the activity 7–8

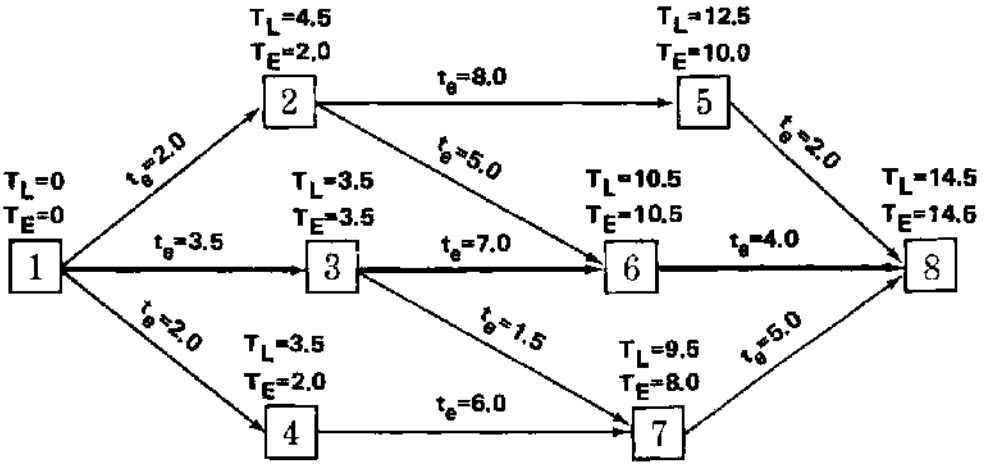

FIGURE 11. *Sample PERT network with expected completion times and latest allowable completion times.*

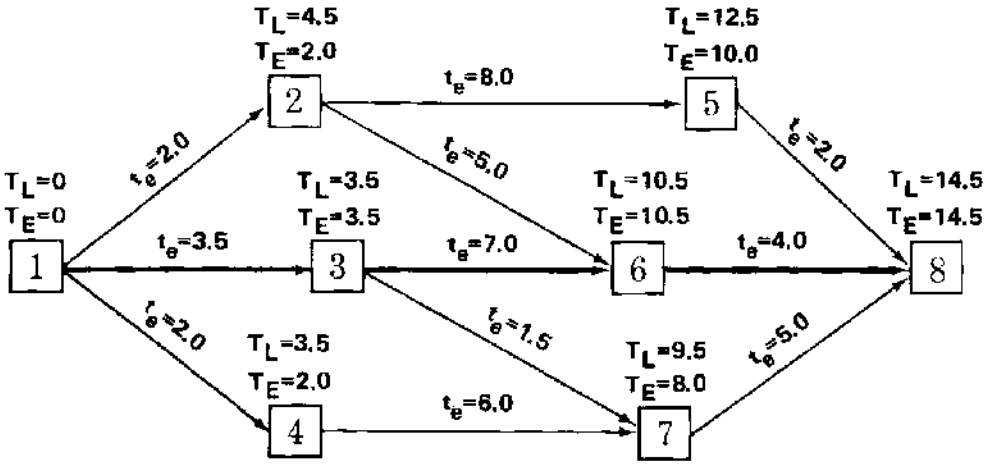

FIGURE 12. *Sample PERT network showing the critical path.*

changes to, say, 7 from 5, then the T_E for the end event will be 15 and the path 1–4 to 7–8 will now be the most critical path. This will also change the sum of the t_e's of the path 1–3 to 7–8 from 10 to 12.

DETERMINING THE EVENT SLACK S_E

All the paths in the network except the most critical path are called slack paths. Slack paths may have positive, zero, or negative slacks. They indicate ahead-of-schedule, on-schedule, and behind-schedule conditions, respectively. Although there may be more than one path having negative slacks, only the longest (duration) negative slack path is considered as the most critical path. Other paths having negative slacks are called subcritical paths. This event slack information is important for the management. Obviously the management would want to divert resources from the slack paths to the most critical and subcritical paths.

The slack of an event S_E is computed by subtracting the earliest expected completion time of an event T_E from the latest allowable completion time T_L of the same, or

$$S_E = T_L - T_E$$

Table 3 shows the event slacks of the network. Note the zero slacks of the events falling on the critical path. This is so because for this network the scheduled project completion time has been assumed to be the same as the T_E of the end event. Figure 13 shows the event slack S_E values.

ACTIVITY EXPECTED TIME AND ACTIVITY SLACK

For very complex PERT networks it may be useful to have two more values—activity expected time and activity slack. The expected activity completion time A_E is the sum of the expected completion time of its predecessor event T_E and the activity mean elapsed time t_e, or

TABLE 3
Event Slacks of the Network

Event	T_L	T_E	Event slack ($T_L - T_E = S_E$)
1	0	0	0
2	4.5	2.0	2.5
3	3.5	3.5	0
4	3.5	2.0	1.5
5	12.5	10.0	2.5
6	10.5	10.5	0
7	9.5	8.0	1.5
8	14.5	14.5	0

$$A_E = T_E + t_e$$

Obviously the latest allowable completion time for an activity is the same as the latest allowable completion time of the activity's successor event.

There are two types of activity slack times—total activity slack S_T, and activity free slack S_A. Total activity slack is the amount of time between the completion of an activity and the latest time that its successor event could be reached without delaying the project, that is

$$S_T = T_L - A_E$$

where T_L is the latest allowable completion time of the successor event, and A_E is the expected completion time of the activity.

Activity free slack measures the amount of time that an activity can slip with-

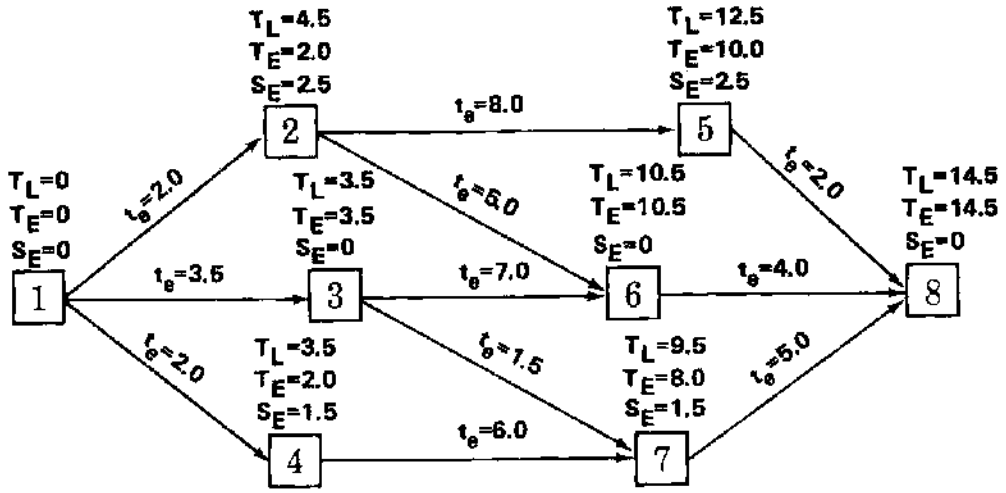

FIGURE 13. *Sample PERT network with event slack (S_E).*

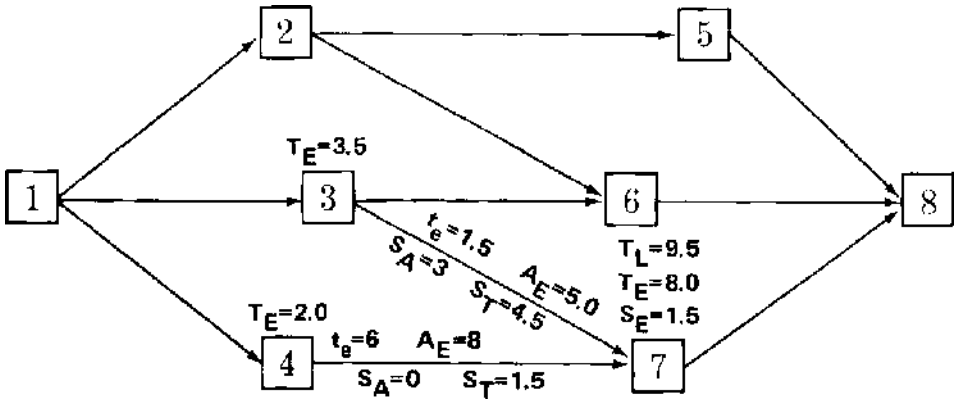

FIGURE 14. *Sample PERT network showing A_E, S_A, and S_T values.*

out delaying completion of the successor event. Obviously activity free slack can only occur when there is more than one activity leading to a single event. In symbols:

$$S_A = T_E - A_E$$

where T_E is the expected completion time of the successor event, and A_E is the expected completion time of the activity.

Figure 14 shows that activity 3–7 can be delayed 4.5 time units ($S_T = T_L - A_E = 9.5 - 5.0 = 4.5$) without delaying the project, and that this activity can be delayed 3.0 time units ($S_A = T_E - A_E = 8.0 - 5.0 = 3.0$) without delaying completion of the successor event 7.

IMPORTANCE OF THE CRITICAL PATH

As has been pointed out before, the significance of determining the critical path is to draw the management's attention to those activities that may affect the timely completion of the project. PERT–CPM is normally used for large and complex projects. Successful and timely completion of such projects within the budgetary constraints depends on the effective coordination of hundreds and thousands of activities with predecessor and successor relationships.

Management by exception is only possible when exceptional (critical) activities can be identified. Moreover, most projects tend to deviate from the originally projected plan. An activity may take more or less time and/or may cost more or less than was anticipated in the original plan. So, there is a need for frequent re-evaluation of the network paths to determine the criticality of the different paths and activities. With the help of PERT–CPM the management can get an instant update of the status of a project network and optimize resource allocation by diverting resources from (positive) slack paths to the critical and subcritical paths.

Further PERT–CPM Applications

SCHEDULED COMPLETION DATE

Completion of a project by a predetermined date may be a contractual obligation and there may be a penalty clause for noncompletion of the project by the specified date. In that case the scheduled completion date T_S becomes the latest allowable time T_L for the terminal event, and all slack values will depend on the value of the T_S. Given a scheduled completion date, the management will be interested in finding out the probability of completing the project on schedule.

DATA REDUCTION

The expected activity completion time t_e is a computed average with the spread or dispersion given by the difference between the optimistic and pessimistic times $(t_p - t_o)$.

PERT is based on the assumption that for each activity there is a unimodal distribution of completion time and that the most likely time t_m can be estimated. It is also assumed that, given the optimistic and pessimistic time estimates, the probability of activity time falling outside the range t_o to t_p is very small. One further assumption is that the activity time has a beta distribution. For a distribution of this type the standard deviation is about one-sixth of the range, that is

$$\sigma = \frac{t_p - t_o}{6}$$

and the variance, therefore, is

$$\sigma^2 = \left(\frac{t_p - t_o}{6}\right)^2$$

In beta distribution, the expected activity completion time t_e is computed by adding together one-sixth of the optimistic, two-thirds of the most likely, and one-sixth of the pessimistic time estimates, assuming $t_o \leq t_m \leq t_p$, that is

$$t_e = 1/6\, t_o + 2/3\, t_m + 1/6\, t_p$$

or

$$t_e = \frac{t_o + 4t_m + t_p}{6}$$

The meaning of this expected activity completion time is that there is a 50% chance that an activity i–j will be completed by the time given by the computed value of t_e.

Assuming that Figure 15 shows the distribution curve for the activity i–j, the vertical line corresponding to t_e would divide the area under the curve into two equal parts, and the probability of completing the activity by the time t_e would be 0.5. The probability of completing the activity by any other time, say t_s, as shown

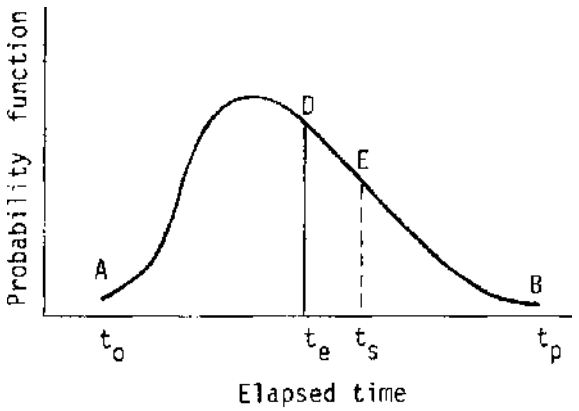

FIGURE 15. *Probability of project completion.*

in Figure 15, would be the area under the curve up to the vertical line at t_s, divided by the total area under the curve, or the ratio

$$p = \frac{\text{area under ADE}}{\text{area under ADB}}$$

A project consisting of many activities will have a normal distribution. This means that for the project as a whole, the distribution curve is a normal curve and the probability of completion of the project by the time given by the value of T_E of the end event is 50%. But if the scheduled project completion time is, say, T_S, the probability of meeting the deadline is given by the ratio

$$p = \frac{\text{area under ACD}}{\text{area under ACB}}$$

as illustrated by Figure 16.

It is necessary to reduce the random curve obtained from a particular network into a normalized form in order to apply this analysis to a PERT network.

Since the standardized normal curve has an area equal to unity and a standard deviation of 1, and is symmetrical about the mean, the point T_E can be taken as the reference point and the distance T_E–T_S can be expressed in terms of standard deviation. To do so, the value of T_E of the end event of the network is made to coincide with the modal value. Then the standard deviation for the critical path is determined by summing the variances of the activities along the critical path and taking the square root of the sum, or

$$\sigma = \sqrt{\Sigma \sigma^2_{ij}}$$

where σ^2_{ij} is the variance for the activity i–j along the critical path.

AN EXAMPLE OF COMPLETION DATE CALCULATION

The activities along the critical path in the network in Figure 12 are: 1–3, 3–6, and 6–8. Taking the t_o and t_p values from Figure 7, the variance σ^2_{ij} for each activity is computed using the equation

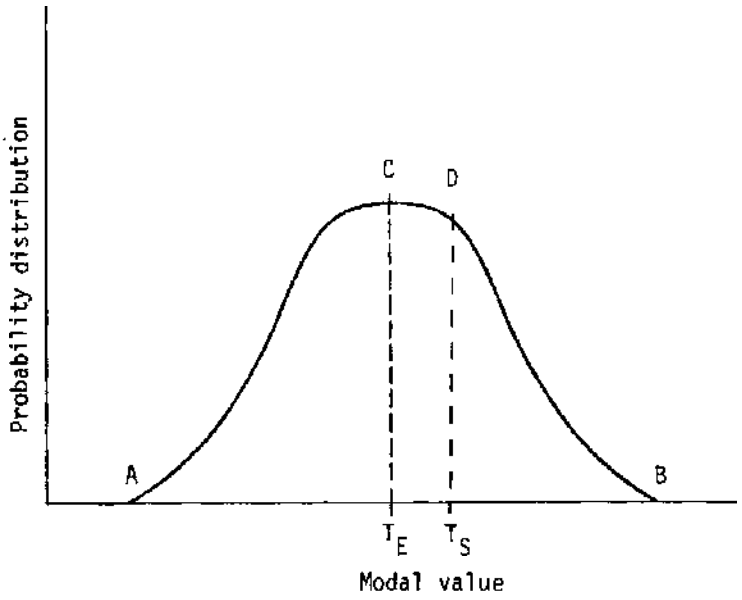

FIGURE 16. *Probability of meeting the deadline.*

$$\sigma^2_{ij} = \left(\frac{t^{ij}_p - t^{ij}_o}{6}\right)^2$$

and the results are tabulated in Table 4.

Thus the standard deviation for the network is

$$\sigma = \sqrt{1.41}$$
$$= 1.18$$

Now, the value of T_E for the end event is 14.5, and let the scheduled completion time T_S for the project be 14, giving

$$T_S = 14$$

and

$$T_S - T_E = 14.0 - 14.5 = -0.5$$

TABLE 4
Activity Variances

Activity i–j	t^{ij}_o	t^{ij}_p	σ^2_{ij}
1–3	2.0	7.0	0.69
3–6	6.0	10.0	0.44
6–8	3.0	6.2	0.28
			$\Sigma = 1.41$

Therefore, T_S is 0.5 units of time to the left of T_E. This is normalized by dividing —0.5 by the standard deviation 1.18, and we get —0.42, or

$$\frac{(T_S - T_E)}{\sigma}$$

$$= \frac{14.0 - 14.5}{1.18}$$

$$= \frac{-0.5}{1.18}$$

$$= -0.42$$

Thus T_S is —0.42 standard deviation from the mean (Figure 17). Referring to a normal distribution function table, the probability of completing the project by the scheduled date is determined as about 33%. Twenty-five to thirty percent probability at the low end and 60 to 65% at the high end of the scale generally indicate the acceptable range of probability. When the calculated probability is below 25 or 30%, the likelihood of meeting the project's scheduled completion date is so low that the critical path must be shortened to improve the situation. When the probabilities are above 60 or 65%, there is a strong likelihood that the project completion date will be met.

CPM COMPUTATIONAL ALGORITHM

Each activity in the network is assigned a duration range and related cost. Each one of these various project durations produces different project costs. In the

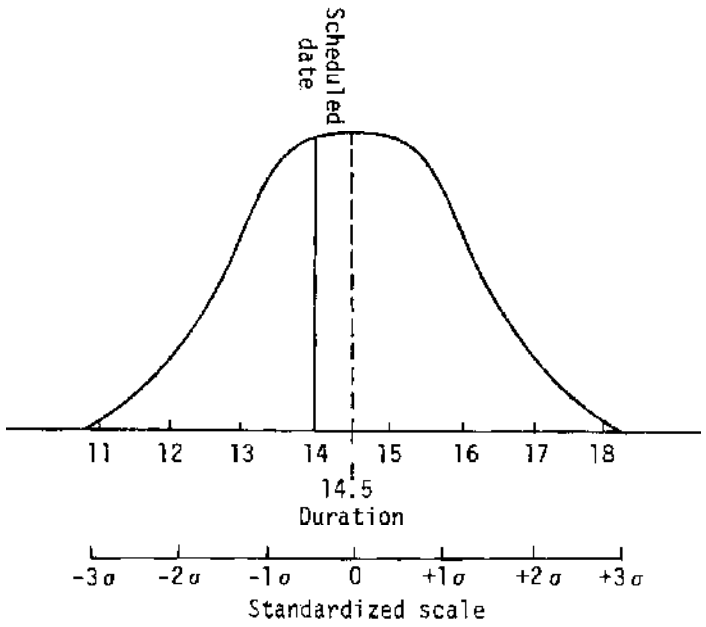

FIGURE 17. *Deviation from the mean for completion time.*

TABLE 5

Cost Estimates

Activities	Normal		Crash	
	Days	Dollars	Days	Dollars
A	4	60	3	110
B	7	150	5	270
C	3	35	2	60
D	6	110	4	190
E	3	90	3	90
F	8	125	6	185
G	5	110	3	250
Total		680		1,155

scheduling phase, the mathematics of CPM is used to compute these various project durations, and the lowest possible cost for each different project duration, thus producing the optimum cost/time schedule.

AN EXAMPLE OF COST/TIME COMPUTATIONS

Figure 18 shows a network with normal and crash cost/time estimates for each activity. This information is also tabulated in Table 5.

By referring to the network, Figure 18, we find that the longest project duration using normal time estimates would be 15 days (or any other time unit), by following the critical path A, D, and G (double lines). The only way the project's duration can be reduced is to reduce the time of any of the activities falling on the critical path.

Since in PERT–CPM it is assumed that cost increases with any time reduction

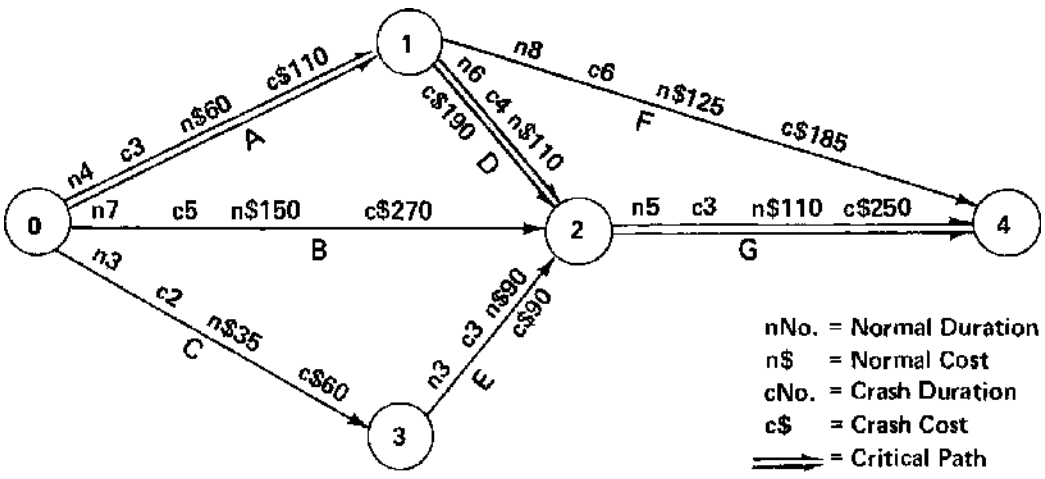

FIGURE 18. *Normal and crash time-cost estimates.*

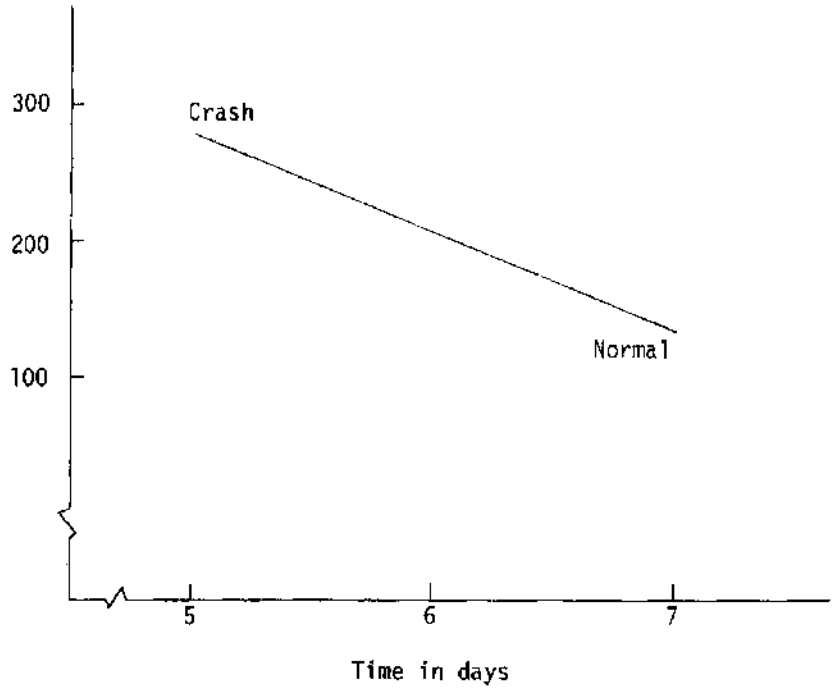

FIGURE 19. *Cost slope of activity B, assuming a linear relationship.*

for an activity, we have to make sure that the time reduction is made at the lowest possible cost. For this we need another piece of information for each activity—the activity cost slope or cost/time unit reduction. Using activity B as an example and assuming a linear relationship, the normal and crash estimates are presented graphically to illustrate the cost slope, Figure 19. The cost slope of this curve is computed by the formula

$$\frac{\text{Crash cost} - \text{Normal cost}}{\text{Normal time} - \text{Crash time}}$$

Substituting the respective values for the activity B from Table 5 we get

$$\frac{\$270 - \$150}{7 \text{ days} - 5 \text{ days}} = \frac{\$120}{2 \text{ days}} = \$60/\text{day}$$

Computing this way for each activity, an additional column is added to Table 5, to produce Table 6.

We see from Table 6 that the 15-day normal duration of the project costs \$680. The least expensive way to reduce the project duration by one day would be to reduce the time for activity D (of the critical activities A, D, and G) by one day, for an additional cost of \$40, raising the project cost to \$720. It can easily be seen by referring to Table 6 that reducing the time of the other activities on the critical path, activities A or G, would be more costly.

We may proceed this way until other paths become critical or until reducing time of other activities becomes less expensive. It is important to take into consideration

TABLE 6

Cost Table with Cost Slope

Activities	Normal		Crash		Cost slope, $
	Days	Dollars	Days	Dollars	
A	4	60	3	110	50
B	7	150	5	270	60
C	3	35	2	60	25
D	6	110	4	190	40
E	3	90	3	90	—
F	8	125	6	185	30
G	5	110	3	250	70
Total		680		1,155	

the marginal costs underlying the direct and indirect costs in the development of real-life schedules.

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ANINDYA BOSE

PROGRAMMING LANGUAGES

See *Computers and Computing*

PRUDENTIUS, MARCUS AURELIUS CLEMENS

Marcus Aurelius Clemens Prudentius—who was born in 348, probably at Calahorra, Spain, and who died sometime after 405—is considered to be the first, and one of the greatest, Christian poets. Detailed biographical information is almost nil, and scholars are forced to rely on the scanty items afforded by the poet himself in the *Proemium* to his collected works. Therein we find a 56-year-old man remembering his difficulties at school, some youthful escapades and peccadillos, a journey from Spain to Rome, and the two terms he served as magistrate, when: "Jus civile bonis reddidimus, terruimus reos" (*Proemium*, 18).

But in his remembering, Prudentius is not at all pleased with those 56 years; for he has come to the realization—with that sadness born of conviction—that most of his efforts and achievements were vanity. And so, as he himself states, he now hopes to atone for a life so poorly spent, by praising and serving God—at least with his poetry: "Atque fine sub ultimo/Peccatrix anima stultitiam exuat:/ Saltem voce Deum concelebret; si meritis nequit" (*Proemium*, 34–35).

With a well-grounded command of Latin and a certain fondness for, but not imitation of, Lucretius, Virgil, and Juvenal, Marcus Aurelius Clemens Prudentius composed a series of poems, both lyrical and didactic, which are rich in imagery (taking examples from Sacred Scripture and nature) and are filled with an expert use of the traditional simile and metaphor. Prudentius' poetical corpus numbers seven books: *Cathemerion* (hymns for the Christian's day), *Apotheosis* (a defense of the doctrine of the Incarnation), the *Hamartigenia* (on Original Sin), *Psychomachia* (being the first poetical Christian allegory describing the combat between personified Virtues), the *Contra Symmachum* (a polemic against the heathen gods), the *Peristephanon* (14 poems in honor of Spanish, African, and Roman martyrs), and the *Dittochaeon* (poems inspired by the pages of the Old and New Testaments).

Although not all that popular in his own day—save, perhaps, in his own country—Prudentius' work was quite well known by the fifth century and became one of the basic readings in the monastic schools of the ninth century. And, although an integral part of the corpus of Christian hymnology, Prudentius was neglected and all but forgotten in the post-Renaissance period. The 20th century has, however, seen a renewed interest in his life and writings; and this is due, primarily, to new and important critical scholarship.

Of greatest interest and importance to the historical bibliographer is the *Psychomachia*, which, ironically enough, is the weakest—at least aesthetically speaking—of Prudentius' poetry. The *Psychomachia* is, as was stated, the first Christian allegory and as such it caught the interest and fancy of the Middle Ages. This text, in fact, provided what Bréhier has called a "moral iconography" for religious art and decoration.

As early as the ninth century, in the Autun Sacramentary, for instance: "Prudence holds a book and a cross, Temperance an urn and a cornucopia, Justice her scales, Courage a sword and a shield. From the tenth century there is an illustrated manuscript of the *Psychomachia*. On the monuments of the eleventh and twelfth

centuries, the battle of Vices and Virtues appears as a current motive, and a long catalogue could be drawn up of these *Psychomachiai.* They are found in paintings, on mosaic pavements, on miniatures, and on capitals and on sculptured doorways . . ." (Bréhier, L., *L'Art chretién son développement iconographique de origines à nos jours,* Paris, 1918, pp. 203–205).

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ROMANO STEPHEN ALMAGNO, O.F.M.

PSEUDONYMOUS WORKS

See *Anonymous and Pseudonymous Works*

PUBLIC AFFAIRS INFORMATION SERVICE (PAIS)

Introduction

Since 1914 Public Affairs Information Service has published the PAIS *Bulletin.* The *Bulletin* has become a major reference tool, providing access to materials written in the English language anywhere in the world. It covers a wide range of disciplines, such as economics, finance and business, labor relations, political sci-

ence, international relations, jurisprudence, international law, public administration, sociology, social welfare, criminology, and cultural anthropology, as well as the economic and social aspects of many other subjects. Emphasis is, on the one hand, on scholarly, factual, well-documented materials; and on the other hand, on those aspects of the subjects covered which are important in shaping public policy on the vast number of economic and social problems confronting the world today. With respect to types of materials indexed, the coverage is likewise very broad. In addition to a large number of periodicals, PAIS lists monographs, government publications, conference proceedings, yearbooks, Festschriften, pamphlets, and other types of publications. Issued weekly from its very inception, with five annual cumulations, the *Bulletin* has always been up to date in its coverage. Besides providing ready access to scholarly resources, the *Bulletin* is invaluable as a selection guide.

Since 1972 PAIS has published the *Foreign Language Index*, covering the same type of information as the *Bulletin*, written in French, German, Italian, Portuguese, and Spanish. The *Foreign Language Index* is published in quarterly cumulative issues, with the fourth cumulation being the annual bound volume.

History

At the Mackinac Island convention of the Special Libraries Association in 1910, a small group of interested librarians saw the need for an index concerned specifically with public affairs. Dr. John Lapp of the Indiana Bureau of Legislative Information proposed the publication of a public affairs index. The proposal was studied by a committee that presented a report to the 1911 conference in New York. It recommended that the index should not be limited to government publications but should also include publications of associations and of commercial and local organizations. At the Kaaterskill conference of the association in June 1913, a group of librarians again discussed the public affairs index and decided that the time for action had come. The group included Guy Marion, John Cotton Dana, Robert H. Whitten, George Godard, Daniel Handy, H. H. B. Meyer, and John Lapp.

MIMEOGRAPHED *BULLETINS*

Under the leadership of Dr. Lapp a small staff undertook the task of compiling bibliographic bulletins. For almost 2 years the work was done in Indianapolis. The PAIS *Bulletin* appeared in the form of mimeographed sheets listing entries submitted by cooperating libraries. Its aim was to cover any material useful to legislative, municipal, and public affairs reference libraries and to list English-language publications regardless of form or place of publication. Books, periodical articles, state and municipal documents, pamphlets, announcements, news notes, digests of decisions, election returns, governors' messages, and special investigations were all included in the *Bulletin*.

CLEARINGHOUSE

A very ambitious aspect of the service was a clearinghouse of pamphlets and other publications designed to operate in conjunction with the indexing. In theory, cooperating libraries and subscribers could order any item from the mimeographed *Bulletin* by checking it off and prepaying for it. Soon, however, it became evident that the system did not function properly and eventually it was abandoned.

By 1914, 36 *Bulletins* had been compiled for 50 subscribers. Nevertheless, Dr. Lapp concluded that the cooperative publication of the *Bulletin* was only partially successful because the members could not be depended upon to send enough copy. He proposed, therefore, the employment of an independent staff and broader subject coverage of interest to libraries of all kinds.

MOVE TO THE H. W. WILSON COMPANY

Mr. Halsey W. Wilson of the H. W. Wilson Company had expressed an interest in PAIS. An informal agreement was reached between Dr. Lapp and Mr. Wilson, with nothing more than a handshake between them, and PAIS moved to the offices of the H. W. Wilson Company in White Plains, New York, in 1914. The *Bulletin* became a printed publication. The format of the *Bulletin* was adapted to that of the Wilson publications as nearly as possible. The subscription rate was $100 annually. The H. W. Wilson company undertook the financial management of PAIS. The first annual bound volume of 344 pages appeared in 1915.

MOVE TO THE NEW YORK PUBLIC LIBRARY

Dr. Charles C. Williamson had been very helpful during the initial years of PAIS. In a memorandum written in 1919, after he became chief of the Economics Division of the New York Public Library, he outlined the advantages of an association of PAIS with the New York Public Library. He thought that the *Bulletin* should be edited at an institution where a wealth of publications was being collected for other purposes. The editor should have a chance to see practically everything published in the fields covered by PAIS. Proceedings of societies; municipal, state, federal, and foreign government documents; and certain periodicals, pamphlets, and fugitive materials, Dr. Williamson pointed out, were not available at the H. W. Wilson Company. Dr. Williamson argued that

> PAIS should not attempt to be a systematic index of a definite list of periodicals or other publications. It should aim to present only the best and most useful material, carefully selected from a wide range of sources, with a view to furnishing their subscribers, consisting mainly of general and special libraries, a guide in building up their collections and at the same time an index to their collection.

The director of the New York Public Library, Mr. Edwin H. Anderson, offered full cooperation and free office space in the Economics Division to the editorial

staff of PAIS. The Advisory Committee of PAIS was reluctant at first to make the change but finally saw the wisdom of Dr. Williamson's argument.

On November 1, 1919, the move was made from the H. W. Wilson Company plant to the New York Public Library. Ever since that time PAIS has had the privilege of examining all the library's incoming publications. At the same time PAIS provides the New York Public Library with a most valuable index to its collection in economic and public affairs.

Even after relocation, the H. W. Wilson Company continued as the *Bulletin*'s printer. It was the goodwill and generosity of the Wilson company that allowed for the continued publication of a financially unstable enterprise that did not become solvent until 1921. As PAIS became self-sufficient the H. W. Wilson Company relinquished the financial management in 1923.

Until 1940 membership was below 300. By 1950 membership had reached 568 and by 1960, 1,009. A dramatic increase in membership came during the 1960s. By 1970 membership was 3,100 and by 1975, 3,602. The annual fee for full membership of $100 a year, established in 1914, remained the same until 1974, when it was reluctantly raised to $125 and then to $150 in 1975.

As the *Bulletin* became widely known several publishers became interested in PAIS: In 1962 Kraus Reprint Corporation began to reprint the out-of-print volumes of the *Bulletin* for which there was an increased demand. In 1969 a cumulative index of personal authors in the *Bulletins* for the years 1965 to 1969 was developed by Pierian Press. In 1975 PAIS gave permission to Carrollton Press to compile and publish *The Cumulative Subject Index to the PAIS Annual Bulletin, 1915–1974.*

FOREIGN LANGUAGE INDEX

Consideration had, at various times, been given to the inclusion of foreign-language materials in the *Bulletin*. However, the ever-increasing volume of English-language publications to be indexed made the inclusion of any meaningful amount of foreign-language indexing impractical. In 1966 Janet Bogardus, a PAIS trustee and librarian of the Federal Reserve Bank of New York, suggested the publication of a separate foreign-language index. In 1967 the trustees decided to publish an index covering French, German, Italian, Portuguese, and Spanish-language materials. Dr. Alice Plowitz of the New York Public Library's Economic and Public Affairs Division prepared a preliminary list of suitable periodicals. Mr. Edward Di Roma, chief of the Economic and Public Affairs Division and trustee of PAIS, provided space in the division for the editorial staff. Concerned persons and groups were consulted in the planning stage. In January 1970, during the midwinter conference of the American Library Association, a group of knowledgeable librarians met with the trustees and editor and made recommendations. Lengthy discussions among the trustees centered around the name of the new publication. *Foreign Language Index* won out narrowly over *Polyglot Index*. The trustees decided that the first volume would cover periodical articles from 1968 to 1971. Starting with Volume

2, 1972, the *Index* has been published in quarterly cumulative issues, with the fourth cumulation as the annual hardcover volume. Coverage was expanded to include monographs and other nonserial publications. Also starting with Volume 2, 1972, production of the *Foreign Language Index* has been computer assisted. A variety of computer service bureaus had made proposals but eventually it was decided to employ the Systems Analysis and Data Processing Office (SADPO) of the New York Public Library for the computer work. Considerable time was spent by Michael Biglow of SADPO; Mr. Robert S. Wilson, the editor of PAIS; and Mr. Wilhelm Bartenbach, associate editor of the *Foreign Language Index*, in the analysis of indexing procedures and in detailing the requirements for a computer-assisted system. The programs developed by SADPO are based on those used in the production of the book catalogs of the New York Public Library. They are largely compatible with the MARC (machine-readable cataloging) system of the Library of Congress.

Under the best of circumstances, publication of a basic reference tool like the *Foreign Language Index* entails a time lag before self-sufficiency can be achieved. The *Index*, unfortunately, has also had to face a period of economic recession during its first years. The *Index* has been supported by funds derived from membership fees received by the PAIS *Bulletin* and the *Foreign Language Index*. As the reserve funds of PAIS used to start the *Foreign Language Index* have continued to dwindle, fund-raising efforts were initiated in 1975/76 in the hope of ensuring the continuance of the *Index*.

COMPUTERIZATION OF THE *BULLETIN*

The successful computer-assisted production of the *Foreign Language Index* and the long delays in the manual cumulation of the *Bulletin* led the trustees to the conclusion that the computerization of the *Bulletin* was desirable. In December 1975 the decision was reached to begin computer-assisted production in October 1976 with the start of Volume 63. It was not an easy decision, since it involved a departure from practices established during more than 60 years, as well as a separation from the H. W. Wilson Company, the printers of PAIS since 1914. However, the fact that computer programs already existed, which had been tested and improved over several years of production of the *Foreign Language Index*, made it easier to take this step. Some minor modifications in programming were needed, mainly due to differences in the frequency and cumulation of the *Bulletin* and the *Index*. SADPO agreed to make the necessary changes and to do the data processing for the *Bulletin* as well as for the *Foreign Language Index*. Printing contracts were awarded to Multiprint, Inc. and Peter F. Mallon, Inc. both of New York City.

Following the successful changeover to computer production in the fall of 1976, PAIS negotiated with Lockheed, System Development Corporation and Bibliographic Retrieval Services, to make the PAIS data base available for on-line information retrieval. During the 1976 annual meeting, the Board of Trustees

voted in favor of the Lockheed DIALOG system. Following further negotiations with Lockheed, a contract was signed in April 1977. The PAIS data base became available for on-line searching in September 1977.

Organizational Structure of PAIS

In the early years the organization of PAIS was on an informal basis. An Advisory Committee, formed in 1915 and consisting of three members, guided PAIS during the initial years. During the 1917 meeting of the American Library Association in Louisville, two members were added to the committee. In 1919 Articles of Agreement were drawn up in which the organizational structure of PAIS was defined. The Advisory Committee became the Publications Committee, consisting of five members, one to be elected each year by the membership of PAIS. Because the Internal Revenue Service ruled that PAIS was not a tax-exempt organization within the terms of the tax laws it became necessary to change its organization. In 1954 the committee obtained from the Board of Regents of the University of the State of New York an absolute charter as a nonprofit educational corporation under Section 216 of the Education Law, and as such was granted tax-exempt status.

The Publications Committee became the Board of Trustees. The Charter states that the number of trustees shall be no more than seven nor less than five. One trustee is elected annually by the voting members of the corporation. The Board of Trustees was expanded to six in 1954, and to seven members in 1967. The trustees hold annual meetings in October at which a chairman, a secretary, and an Executive Committee are elected.

The Executive Committee appoints the editor and sets conditions of employment of the staff, subject to approval of the trustees. The chairman of the Board of Trustees is a member of the Executive Committee. He presents monthly financial reports to the trustees and an independent audit of accounts for the year at the annual meeting. In 1969 the post of executive director, a salaried position, was created. The position was held by the chairman until 1976 when the trustees decided to separate these two posts. The chairman is the chief officer, and the executive director is the chief operating officer of the corporation with direct responsibility for all business affairs.

When PAIS was first formed, the Advisory Committee consisted of Dr. John A. Lapp; Dr. Charles C. Williamson, then librarian of the New York Municipal Reference Library; and George S. Godard, state librarian of Connecticut, who served until his death in 1936. In 1917 Mr. Joseph L. Wheeler, librarian of the Youngstown Public Library; and Frederick C. Hicks, law librarian, Columbia University, were added. Rollin A. Sawyer of the New York Public Library joined in 1921 to serve until 1960. When Mr. Wheeler resigned in 1922, Mr. Dorsey W. Hyde, Jr., Chamber of Commerce of the U.S.A., became a member of the committee, to remain until 1952. Mr. Wheeler rejoined the committee in 1928 and served until 1948. In later years other notable librarians followed: Marian Manley, librarian of the Newark Business Library (1936–1964); Donald Clark of the Baker Li-

brary at Harvard (1948–1970); Eileen Thornton, librarian of Vassar College (1952–1972); Janet Bogardus, librarian of the Federal Reserve Bank of New York (1961–1971); Martin L. Loftus, librarian of the Joint Library, International Monetary Fund and International Bank for Reconstruction and Development (1964–1975); John Fall, chief, Economics Division, the New York Public Library (1954–1976); Everett T. Moore, University of California, Los Angeles (1970–1976); and Edward Di Roma, chief, Economic and Public Affairs Divisions, the New York Public Library (1967–1976).

As of 1977 the Board of Trustees consists of: Charles F. Gosnell, chairman (New York University Libraries); Donald F. Jay, vice-chairman and treasurer (chief, Humanities and Social Sciences Research Center, the New York Public Library); Shirley Echelman, secretary (chief librarian, Chemical Bank); Thelma Freides (social sciences librarian, Swarthmore College); John P. McDonald (director of university libraries, University of Connecticut); and Joseph A. Rosenthal (associate university librarian, University of California, Berkeley).

CHAIRMEN OF PAIS

Five chairmen have dominated and profoundly influenced PAIS over the years: John Lapp, Charles C. Williamson, Rollin A. Sawyer, John Fall, and Charles F. Gosnell.

Dr. John Lapp's contribution as the driving force behind the founding of PAIS and as its first chairman is immeasurable. He continued to serve on the Publication Committee until 1929.

Dr. Charles C. Williamson, a member of the Advisory Board since 1915, became chairman in 1919. As already related, he was instrumental in bringing PAIS to the New York Public Library, an association beneficial to both PAIS and the library that has continued to the present day. He drew up the Articles of Agreement of 1919, providing a firm organizational structure for the organization. By the time he left PAIS, in 1921, to work for the Rockefeller Foundation, the *Bulletin* had expanded considerably in size and coverage and was growing in membership.

Rollin A. Sawyer served as chairman of PAIS from 1921 until his death in 1960. His long and outstanding service made him the predominant figure in the history of PAIS. In his dual role as chief of the Economics Division of the New York Public Library and as chairman of PAIS he made a lasting contribution to American bibliography. He set impeccable standards as a collector and bibliographer of material in economic and public affairs. When the H. W. Wilson Company relinquished the financial management of PAIS, Mr. Sawyer also managed the business affairs of PAIS, aided by H. J. Grumpelt, the bursar of the New York Public Library. He retired from the New York Public Library in 1953, when he was succeeded as chief of the Economics Division by John Fall. Mr. Sawyer continued as chairman. He established a Membership Office in separate quarters. The library again generously made space available.

John Fall was chosen as chairman of PAIS at the annual meeting of the Board of Trustees in 1960. He continued to serve as chief of the Economics Division of the New York Public Library until 1967 when he began to work full time for PAIS. In 1969 Mr. Fall was also named executive director of PAIS. Under his leadership, work procedures and recordkeeping in the Membership Office were improved. During his tenure the membership of PAIS more than tripled. The meetings of the Board of Trustees became semiannual instead of annual. The trustees were encouraged to participate more actively in decision making. Mr. Fall presided with great dignity and patience over meetings of the Board of Trustees and the Executive Committee. Mr. Fall, starting in 1960, provided the trustees with a monthly report to keep them better informed about the day-to-day activities of PAIS. At the same time he made efforts to improve communications with the staff. To this end he began issuing occasional newsletters. He also instituted the annual reception for trustees and staff in 1973.

When Mr. Fall retired as executive director in April 1976 he was asked by the trustees to remain as chairman of PAIS. Mr. Wilhelm Bartenbach, formerly associate editor of the PAIS *Foreign Language Index,* became the executive director.

Upon Mr. Fall's retirement as chairman in October 1976, Charles F. Gosnell became chairman of PAIS. Dr. Gosnell is former New York State assistant commissioner of education and state librarian, and director of libraries and professor emeritus at New York University. He has been a member of the Board of Trustees since 1948.

EDITORS

The major responsibility for the content of the *Bulletin* rests with the editor. When the *Bulletin* was issued in Indianapolis, Lillian Henley edited the mimeographed sheets. Orrena Louise Evans became the editor of the printed *Bulletin* in 1914, when PAIS moved to the H. W. Wilson Company. She developed the editorial policies and the format of the bibliographic entries, drawing on the experience of the Wilson editors. After 2 years she was succeeded by Lillian Henley, who had previously edited the mimeographed *Bulletin.*

The move to the New York Public Library brought many changes. A wealth of printed information had to be examined daily and procedures acceptable to the library had to be developed. Alice Jewitt became the editor for 2 years, following the move to the library. She was succeeded by Harriet Burcholdt. The next editor, Mary Elizabeth Furbeck, served for 22 years, from 1925 to 1947. Mary E. Bartley filled the interim period from 1947 to 1952, when the present editor of PAIS, Mr. Robert S. Wilson, was appointed. Mr. Wilson has served as editor longer than any of his predecessors. He brought many innovations to the editorial office. He established a subject heading file that included scope notes, "see from," and "see also from" references. He introduced tracings, and when photocopying became available he took advantage of it to duplicate entries. A manual of editorial policies and procedures, compiled in the 1920s, had fallen into disuse. Mr. Wilson prepared a

new manual and introduced changes in editorial policies. Mr. Wilson is assisted by Mary MacQuibben, associate editor, and by Jacqueline Hodes and Richard Frow, assistant editors.

Mr. Wilson is also the editor of the *Foreign Language Index*. In 1968 Miss Susan Tully was employed to work with Mr. Wilson on the prototype for the *Index*. In 1970 Mr. Wilhelm Bartenbach was employed and, upon Miss Tully's retirement, was appointed associate editor of the *Foreign Language Index*. Mrs. Eva Goldschmidt became associate editor of the *Index* in 1976, assisted by Rose O. Roth and Susan Stein, assistant editors.

Editorial Procedure

SELECTION

The editor daily selects carefully from the material sent to PAIS and from the material received by the New York Public Library. Unlike other indexes, the *Bulletin* and the *Foreign Language Index* do not limit their coverage to periodicals but also list monographs, pamphlets, government publications, conference proceedings, yearbooks, Festschriften, and other types of publications. The indexing of periodicals is done on a selective basis. The editors are not limited to a fixed list of periodicals. Journal titles are reviewed continuously to determine whether they merit inclusion in the *Bulletin* or *Foreign Language Index*. Indexing of the titles selected does not necessarily cover all articles contained in an issue. Only materials considered significant by the editors are indexed. If a journal should publish only one important article during the year, only that one would be selected for listing.

ANALYSIS

Each item selected is carefully analyzed as to its content before the appropriate subject headings are assigned. The most accurate terms that describe the article or book are assigned. Over the years a unique file of over 9,000 subject headings has been developed. Standard subheadings or geographic subheadings are added, as needed. "See" and "see also" references refer readers to alternative or related headings. Subject headings are changed or added to the file to keep pace with current trends. When a new heading is needed the editor decides what references should be made and prepares a scope note, if necessary.

For titles which are not self-explanatory the editors supply whatever information is needed to indicate the subject and scope of the item. The bibliographic description is detailed and standardized. Editors supply other useful information: for example, whether a work is translated; whether it contains bibliographies, tables, charts, or illustrative material; whether it is a thesis, address, or conference paper, etc. The bibliographic description of monographs includes series notes, Library of Congress card numbers, ISBN numbers, price, and binding information. Geographic references are made if a subject heading is not subdivided geograph-

ically but the material has a strong geographic emphasis. An asterisk in front of the main entry indicates that the material may be obtained free of charge. A dagger indicates that there is a price, or that price is not known.

DATA PROCESSING

The bibliographic entries are typed on sheets and sent to Vance Weaver Composition, Inc., for optical scanning. The magnetic tape produced by the scanner is processed by the Systems Analysis and Data Processing Office (SADPO) of the New York Public Library, which provides proof copy for each bibliographic entry. Necessary corrections are made, and revised proof copy is furnished by SADPO. When a sufficient number of entries has accumulated, a production run generates a list of periodicals indexed, a directory of publishers, a list of publications analyzed, bibliographic entries under the various subject headings, cross-references, and an author index, all in proper alphabetical order. An outstanding feature of the *Foreign Language Index* programs are the authority files for subject headings, periodicals, publishers, and publications analyzed. The input of the bibliographic record has to match the authority record, thus ensuring accuracy and consistency. A subject authority file in machine-readable form has been developed, based on the subject heading card file of the PAIS *Bulletin*. Standard subheadings and geographic subheadings are added, as needed. The subject authority file also includes catalogers' notes, public notes, "see from," "see also from," "see," and "see also" references. When a heading is activated by virtue of being assigned to a bibliographic record, the computer will automatically generate the appropriate cross-references. The programs prevent blind references.

The magnetic tape generated by the production run is sent to an outside company for photocomposition. PAIS receives camera-ready pages. Errors found in the pages are corrected through cutting and pasting. The camera-ready pages are sent to the printers.

ARRANGEMENT

The *Bulletin* and the *Foreign Language Index* include a list of the periodicals indexed, with the abbreviated title, the full title and subtitle, frequency, price information, and the source where the periodical may be obtained. A directory of publishers and organizations provides the abbreviated name and the full name of the publisher or organization and the full address. In addition, there is a list of publications analyzed. Bibliographic records are arranged alphabetically by subject heading. Subject subheadings precede geographic subheadings. An author index provides full bibliographic information.

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WILHELM BARTENBACH

PUBLIC LIBRARIES, INTERNATIONAL

HISTORY OF THE PUBLIC LIBRARY*

It is suggested in the article following in this series that the contemporary public library in the United States can be "understood to some degree through the historical perspectives of its origins in the 19th century. . . ." The library described in that context is a public institution supported by taxation, one that opens its collections, facilities, and services, without distinction, to all citizens. With minor variations because of differences in political philosophy, national experience, and state of educational development, this statement may be applied equally to the public libraries of Asian countries, of Eastern and Western Europe, of Australia and New Zealand, and of other parts of the world today in which public libraries have been established. The fact remains, however, that the "public library as we understand it is an Anglo-Saxon idea." It developed in England and America at about the same time, "and was original in both countries" (*1*).

A century ago William Frederick Poole, then librarian of the Chicago Public Library, wrote: "The public library is established by state laws, is supported by local taxation and voluntary gifts, is managed as a public trust, and every citizen of the city and town which maintains it has an equal share in its privileges of reference and circulation" (*2*). At that point, three-quarters of the way through the 19th century, Poole was writing of a well-established social and educational agency. Its roots, however, lay at least two millenia in the past. The term "public library" may be applied to some libraries in the pre-Christian era but its meaning differed considerably from that of today; the libraries were public in a far different sense indeed than the present public libraries. It might be said that they were public as opposed to the libraries that were the private possessions of individuals who restricted use to their own purposes. Ancient "public" libraries were, of course, for the use of the founder but also for scholars, students, priests, and officials who were permitted to use their collections for approved study.

It was suggested by the writer Aulus Gellius that near the middle of the sixth century B.C. the tyrant Pisistratus "collected a large library of books and later

* The References for this section begin on page 288.

gave it to the city of Athens, where it was opened to the public." There is no corroboration of the account, however (*3*).

Julius Caesar had the idea of founding a national or public library in Rome "to open to the public the greatest possible libraries of Greek and Latin books." In charge he planned to place Marcus Terentius Varro, an erudite and prolific writer (*4*). Caesar was assassinated before he could carry out such a project. It fell then to C. Asinius Pollio to provide the first public library in Rome in the Atrium Libertatis, 39 B.C. (*5*).

Rome by the end of the fourth century was reputed to have 28–30 public libraries. Again, these were not the public libraries of today but were available to those who could and would use them. Rome did have, after all, in the imperial period an increasing number of persons who were literate. There were booksellers in Rome and in many of the larger cities of the provinces. It was fashionable, too, to have books in one's home. As the Roman Empire declined in the West the libraries also declined, as did book publishing and acquisition (*6*).

A step closer to the modern public library was the "town library" that came into existence in the 15–19th centuries in England, Scotland, France, and Germany.

The early libraries in England were either founded as gifts of individuals or by a "public and joint-stock contribution, and then entrusted to the guardianship of the respective municipalities." Norwich, Leicester, and Bristol in England had examples of such town libraries founded in the first third of the 17th century, but their books and quarters after some vicissitudes ended up in a state of neglect or in the possession of a private society. In Bristol, as an example, the library, the structure provided to house it (Library House), and the books came into the possession of a private subscription library that relieved the Town Council of the need of its support. At Leicester the town library, founded in 1632, was in the latter part of the 17th century permitted to sink "into careless guardianship and ultimate neglect" (*7*). Scotland had to wait until late in the 18th century (1791) for a library, which soon was forced to become a subscription library to continue in existence (*8*).

There was at least one other English public library that deserves mention, the Chetham Library in Manchester, founded in 1653 and the gift of Humphrey Chetham, wool-factor and money-lender, who left £ 1,000 to be used for books "for or towards a Library within the town of Manchester and an additional £ 1,000 for the purchase of 'some fit place for the said library.' " There were £ 200 additional for the purchase of "godly English books, such as Calvin's, Preston's, and Perkin's works." After other bequests—including a Hospital for Maintenance and Education of poor boys—had been met, the residue of the estate was to go for the further purchase of books. The income ran between £ 750 and £ 500 annually. By 1826 the library was reputed to have 14,276 items, the larger portion of which were folios and quartos. The next several decades did not do much for the library (*9,10*).

Many of the town libraries in France suffered the same fate—"a gross breach of trust"—as those in England, and disappeared. In many other cases, however, the library was quite successful and continued in existence (*11*). The library at Caen, for example, was established in 1431 and after suffering from the effects of religious wars and suppression was restored in 1736. Subsequently it received books at the

time of the suppression of the Jesuits and further contributions of books were made after the Revolution. In 1809, "when it was organized for public use," it had some 25,000 volumes and continued to grow (*12*). Edwards also mentioned a library at Lyons, established in 1530, that early in the 19th century had 120,000 volumes and 1,500 manuscripts (*13*). Edwards was particularly impressed with the state of libraries in the provinces of France at the time he was writing (1850s), the result of the fact "that in some eminent instances French Municipal Councils have consistently displayed, during a series of years, an enlightened appreciation of the value of store-houses of learning" (*14*).

In Germany, town libraries were established in Ratisbon (1430), Ulm (ca. 1440), Erfurt (1440), Nuremburg (1445), Hamburg (1529), and Lübeck (1530), to cite a few. In general they grew out of bequests. In the early days their contents were largely juridical but when the religious houses were dissolved, many came into a number of rare manuscripts. As in France, a number continued in existence and had important collections by mid-19th century (*15*).

The United Kingdom

In the United Kingdom there were a number of other forerunners of the public library. There were the parish libraries of the Reverend Thomas Bray which provided collections for laymen as well as for clerics. In Scotland the Reverend James Kirkwood developed an elaborate scheme for "founding and maintaining bibliothecks in every paroch throughout this kingdom." The scheme entailed providing a place for books in each parish, the handing over to the library of the personal books of the minister, the cataloging of the books, and the making of four copies of each catalog, one of which would go to the principal library in Edinburgh which would make a general catalog of all books in the kingdom. The scheme called for compensation to the minister for his books, cooperation between parishes, the lending of books, book binding, and ultimately a "Printing-House and Paper Manufactory" (*16*). The Reverend Samuel Brown of East Lothian developed a plan involving "itinerating libraries" through which there would be provided "a library or division of 50 books in each town or village of a county." The library would remain in the town 2 years, move to another town, then move again in another 2 years, and so on. In each case the collection would be replaced by another. The plan went into operation in 1817 in Haddington where Reverend Brown was then provost, and in four other villages. In general the circulation was good in the first year and fell off fairly sharply in the second year. The books had a strongly religious cast, but there were books of a "plain and popular nature," in the arts and sciences as well as history, biography, and travel. The plan developed to the point that by 1836 there were some 47 libraries with 2,380 volumes. After the death of Reverend Brown in 1839, the project slowly declined, partly because there was no one to offer the management and financial support he had supplied (*17*).

Also a forerunner of the public library was the social library: both proprietary and subscription. In larger cities circulating libraries (strictly profit-making ven-

tures) appeared, particularly in Scotland in the early 18th century (*18*). For the workers there were apprentices' libraries and mechanics' institutes. These will be discussed in some detail later.

Toward the middle of the 19th century the modern public library moved closer to reality by the passage of the Museums Act of 1845, primarily the work of William Ewart, who had been a member of Parliament for Liverpool (1830–1837) and was then member for Dumfries. Impetus for passage of the act had come from a meeting held in Manchester in November 1844, a meeting presided over by Richard Cobden. Joseph Brotherton, member for Salford (also in attendance), was influenced to appeal to William Ewart to work on the proposal. The result was passage of an act "Encouraging the Establishment of Museums in Large Towns." It authorized the levying of a ½ d. rate in towns of not less than 10,000 population for the erection of museums of science and art; the act provided only for the building. An admission charge of 1 d. was authorized for support. Within a short time three towns—Canterbury, Warrington, and Salford—had taken advantage of the act to set up combined museums and libraries. The library at Canterbury, established in 1847, grew out of the purchase of the museum and library of the Philosophical and Library Institution. Warrington followed in the next year with the location together in rented quarters of the museum of the Warrington Natural History Society and the collections of the Warrington Subscription Library. There was a full-time curator who also served as librarian. Salford established a museum and library in 1849 although it was not opened until the following year (*19*).

William Ewart was further stimulated to work toward a public library act by an article written by Edward Edwards, "Statistical View of the Principal Libraries in Europe and the United States." Edwards, a prolific writer on the subject of libraries, was then a supernumerary assistant at the British Museum and had testified before an earlier Select Committee inquiry into British Museum activities. Ewart drew upon Edwards's knowledge of libraries and by 1849 had convinced Parliament to establish a Select Committee to inquire into the establishment of "libraries freely open to the Public, especially in large towns." The committee and its successor recommended, after inquiring into libraries on the Continent and in the United States, that Parliament authorize town councils to levy a small rate to establish and support public libraries (*20*). In February 1850 Ewart moved for permission to introduce "a Bill for enabling Town Councils to establish Public Libraries and Museums." After considerable debate the motion passed. After further debate and some amendments, the bill went to the House of Lords and then "received Royal assent" on August 14 (*21*). The main provisions of the act were that Corporate Towns of 10,000 persons might levy a ½ d. rate to buy land and build buildings for libraries. The act of 1850 applied to England and Wales. It was extended in 1853 to the "Municipal Boroughs in Ireland and the Royal and Parliamentary Burghs in Scotland" (*22*).

The Museums Act had passed with rather general support but the Public Library Act ran into considerable opposition. Whatever popular support for it there might have been, it was not marshaled, partly because the franchise was not then as widely extended as later. It can be said that it was sponsored by a strong, determined

minority drawn from members of the library profession and from the upper strata of society. In general the arguments ran to extending the benefits of reading to the lower classes. The benefits were seen as social, moral, and educational. Brotherton argued that reading would reduce crime and "provide the cheapest police that could be gathered." Others argued that it would keep workers from the evils of the gin shops. Opposition came from those who objected to an increase in rates and those who feared that agitation and social unrest would result (*23*).

Libraries were rather slow to appear. Edward Edwards suggested that Manchester was the first to establish a library under the act, for the "preliminary subscription towards the expenses of its foundation had been set on foot, whilst the Bill was still pending in the House of Commons, by Sir John Potter. . . ." The poll at Manchester was not taken until August 1852 "when a library of 21,000 volumes was in complete working order." The subscription raised amounted to £ 12,823 (*24*). The first city in which a poll was taken was Norwich, however. Although the poll was taken on September 17, 1850, no service was begun until 1857 (*25*). Twenty-three libraries were opened between the years 1851 and 1862, and 98 more between 1868 and 1886, for a total of (with the four previously established) 125 (*25*).

Ewart attempted to have the act of 1850 amended in 1854 but it was not until the next year that the amended act became law: *An Act for further promoting the establishment of Free Public Libraries and Museums in Municipal Towns, and for extending it to Towns governed under Local Improvement Acts, and to Parishes.* It reduced the number of inhabitants necessary to qualify under the act from 10,000 to over 5,000. Two neighboring parishes whose populations together aggregated more than 5,000 persons and whose vestries chose to unite to establish a public library might do so. The rate was set at "one Penny in the Pound on the rateable value of the property assessed," and "Books, Newspapers, Maps, and Specimens of Art and Science, Fuel, Lighting and other similar matters" might be purchased (*26*).

Over the years there were a number of Public Libraries Acts but the changes were minor, "no more than further provisions for adoption, area definitions and powers for Authorities to take joint action" (*27*). In 1892 (June 27) a new Public Libraries Bill received royal assent. The act repealed former legislation and in effect consolidated previous advances and changes. The act of 1919 not only permitted the development of urban library service by removing the rate limitation but it also gave library powers to counties. A major drawback of the national library legislation of the latter half of the 19th century had been the continuation of the penny rate limitation. A number of library authorities, about 30 by 1900, had freed themselves of the limitation "by means of clauses in Local Acts" (*28*). It was not until the close of the year 1919 (December 23), however, that the rate limitation was removed. Other provisions of the act were important too. County Councils might now adopt the Public Libraries Acts for all or part of their areas. They might accept library powers from existing library authorities or give up, with approval of the Education Committee, their powers "in respect of any part of its library area to permit the establishment of an independent library service" (*29*). As Lionel McCol-

vin pointed out, the county system was in a position to serve "people living under a variety of circumstances—in isolated farms, in little villages, in mining and industrial townships or market towns, in new towns and in the suburbs" (*30*). This act was a dominant factor in library development from 1919 to 1965.

Andrew Carnegie contributed significantly to the public library movement in the United Kingdom, as he did in the United States. His first gift was that of £ 8,000 to his native Dunfermline in 1879. By 1883 the library had opened (*31*).

Carnegie made subsequent grants in Scotland and in England. As in America grants were usually for buildings and equipment, not for books or operation. By the time of his death about half the library authorities in England and Wales and more than half in Scotland had profited from his generosity. In 1913 he created the Carnegie United Kingdom Trust (CUKT) with a capital of £ 2,000,000, and he indicated libraries were a high priority. Most of the public library development had come in the larger cities and towns. It was logical, therefore, that the Carnegie Trust would turn its attention toward helping the rural areas of the counties. Various local "schemes" for assisting public libraries were used as experiments, such as the Worksop Authority project to supply book service for the nearby rural parishes of Nottinghamshire (*32*). At Staffordshire the Trustees of CUKT funded a "central Repository of books . . . from which should be dispatched to the Schools of the County consignments of books which would reach their readers through the agency of the schoolmasters and the schoolchildren." The plan had first been suggested to Oxford, which turned down the offer of funding in the amount of £ 5,000. When the new Public Library Act of 1919 provided for the establishment of County Library Authorities, the trustees of the foundation began to make grants to the authorities in terms of books, book boxes, shelving, and other equipment (*33*). One measure taken by the trustees to further the cause of county libraries was a grant of £ 4,000 for the provision of a County Library sign that became a familiar reminder of library service across the countryside and of Carnegie "benefaction to a grand total of £ 500,000." For the early years following the passage of the 1919 act, service consisted of boxes of books that eventually gave way to the "library van" or bookmobile. Gradually, in the smaller urban areas subject to the County Library Authority, a room or library building was provided. Utilizing a provision of the 1919 act that permitted the levy of a rate above the normal county rate to provide branch library service, counties began to provide service on the urban pattern (*34*).

Library service remained uneven, however, for the populations served by Local Authorities varied from 30,000 to 1,000,000 or more persons. The smaller authorities had neither the manpower nor the financial resources to provide a satisfactory level of library service.

The number of public library authorities in England and Wales was sharply reduced (345 to 83) by comprehensive local government legislation, the Local Government Act of 1972. The amalgamation was to be accomplished by April 1, 1974. Most of the new authorities had populations of 200,000 or more persons, which made it possible to have greater financial resources than before. The London area, reorganized in 1965, was not changed.

America

In America the first library to meet the test of a modern public library was that established in Peterborough, New Hampshire, in 1833. Money originally appropriated by the state for other purposes (a state university) was put into a Literary Fund and made available to towns to devote to the support and maintenance of "common free schools, or to other purposes of education" (*35*). The purpose to which Peterborough put the money was to provide books for a town library to which there would be access without charge. The collection, reports Jesse Shera, was rather like those of the social libraries of the day (*36*). The library's true significance, however, was that "for the first time an institution was founded by a town with the deliberate purpose of creating a free library that would be open without restriction to all classes of the community—a library supported from the beginning by public funds" (*37*).

Before the establishment of the Peterborough library there had been books and libraries in America for some two centuries, for a number of private libraries had come with the early settlers. Several—like those of Elder William Brewster of Plymouth Colony and John Winthrop, Jr., governor of Connecticut—were, in the early part of the 17th century, quite impressive. In New England at the close of the century the largest private libraries were those of Increase and Cotton Mather; in Westover, Virginia, Colonel William Byrd is reputed to have had a library of 4,000 volumes, and in Philadelphia, James Logan, a library of 3,000 volumes (*38*). The number of those who read was, as in the mother country, rather limited although there were presses in the colonies, and booksellers as well.

Robert Keayne—a merchant described variously as "a consciencious & upright man in the generall," an "extortioner," "contentious and stubborn," and fined for "profiteering"—bequeathed a public library to Boston in the 1650s. In his will, written between August and December 1653, he provided that £ 300 were to be set aside for public use, in particular a Town House in which a room was to be provided for a public library. Included in the bequest were his "3 great writing bookes which are intended as an Exposition or Interpretation of the whole Bible." His son and his wife were to choose from his personal books those they wished, the balance to go to the library. In the event the town of Boston failed to act upon his gift by providing the Town House, the money and books would go to Harvard College. The building was erected and put into use, but it suffered two fires. One in 1711 destroyed the building but the library was largely saved. The restored structure and the library were totally consumed by fire in 1747. No more was heard of the library. Keayne had hoped his example would lead others to donate books but few books came by way of contribution. The library did serve for almost a century as a repository of town records and was generally known as a public library owned by the town and supported by it (*39*). Another early library for the public resulted from the will of Theophilus Eaton, governor of New Haven, which provided that the books formerly belonging to his late brother Samuel be held in trust for a college that was to be established in New Haven by one John

Davenport. Davenport left the colony and the college failed to materialize. The books then belonged to the town and are believed eventually to have found their way into the schoolhouse where they were kept but seldom used until sold in 1689 for "forty pounds of rye and thirty-two bushels of Indian corn, appraised at 12 pounds, 18 shillings" (*40*). Concord, Massachusetts, also had a library owned and supported by the town before 1672. There were other towns in New England that owned and supported libraries in the early years of the 18th century. Shera mentions three in Massachusetts: Oxford (1719), Lancaster (1731), and East Sudbury (1726). The first collection was a gift but the latter two were purchased at town expense, kept in the meeting house, and made available to the townspeople (*41*).

At the beginning of the 18th century there appeared for the colonists another source of books, the parish and provincial libraries instigated by the Reverend Thomas Bray. Dr. Bray was appointed commissary of the Anglican Church in the Colony of Maryland in 1695. He early realized that to supply ministers and missionaries for the relatively unappealing parishes in the colony he was going to have to draw upon the "poorer and less influential men," men who would have difficulty supporting themselves and could not be expected to provide themselves with a library, which Bray considered as essential. A minister could do "his best only if he had ready access to a library . . ." (*42*). Bray was assisted in his work of getting libraries to America by two groups which he was instrumental in forming: the Society for the Promotion of Christian Knowledge and the Society for the Propagation of the Gospel in Foreign Parts (SPG). Later in his life when he fell ill he was assisted by a group known as Dr. Bray's Associates (*43*).

Although his primary interest lay in Maryland, Bray made the effort to extend such libraries to all of the colonies. He thought of one large library in each colony, a provincial or general library, and of a parochial library for each parish. He also provided libraries for laymen. Bray served as commissary for Maryland from 1695 to 1704. In that period of less than a decade he and those who worked with him established:

> provincial libraries at Boston, New York, Philadelphia, Annapolis, Charleston and Bath, North Carolina. He provided thirty-nine parochial libraries, of which twenty-nine were located in Maryland, although each of the other colonies had at least one such library. Finally he provided over thirty-five layman's libraries and sent over 35,000 religious books and tracts to the colonies for free distribution (*44*).

The libraries were not large; the largest, 1,095 volumes, was in Annapolis and was considered the "Publick Library" of the colony. Governor Francis Nicholson, with a view to enlarging the collection, suggested that the king be asked for permission to divert some military defense funds for a library. The Assembly, however, did not acquiesce (*45*). The library in Charleston had support from Bray, the Assembly, and the proprietors of the colony. In 1700 the Assembly of South Carolina passed a law, one of the earliest in America, that put the books in the "care" of the minister of Charleston with a board of nine commissioners appointed by the

Assembly to manage it. Use was without restriction. Books might be borrowed, the length of time depending upon the size of the books: "if a *Folio,* in four months time; if a *Quarto,* in two months time; if an *Octavo,* or under, in one month, upon Penalty of paying three times the full Value of the said Book or Books so borrowed, or damnifying the same." The collections of the libraries were heavily theological, but they were not entirely so. More than one-third of the initial purchase of books for the Charleston library were nonreligious. It was not Bray's intention to supply a complete library for the parish. He hoped, although the hope was seldom realized, that there would be additions made locally to the collections (*46*).

In the main the Bray libraries were not public libraries even though a few were so designated. Quite a number of laymen had access to all of the libraries, for ministers permitted members of the parish to use some of their books. Their significance was that they "did much to enrich the book resources of the clergy in the American Colonies at the beginning of the eighteenth century." Shera suggests further that their relationship to the public library movement was "more symptomatic than influential." Laugher counters with the observation that "if the libraries had no effect, the SPG would not have continued sending such reading matter to the colonies, in an amount estimated to exceed 100,000 volumes" (*47*).

Of more significance in the chronicle of the predecessors of the public library in America was the social library, a library resulting from the association of a group of persons who contributed or subscribed money for the purchase of books. Title to the books remained with the association although all contributors could use or borrow them. The library might be proprietary, that is, the members of the group subscribed to stock and owned shares; or it might be a subscription library for which the members of the group subscribed an initial fee, with which the first books were bought, and followed the initial subscription with the payment of an annual fee. Both the proprietary and the subscription library soon permitted nonsubscribers to use the collections upon payment of a set fee. In general these libraries were legal entities operating on a charter issued by the individual colonies and later by the states (*48*).

The movement toward the social library was started in America by Benjamin Franklin, who in the late 1720s was the organizer of a group interested in "socializing and debating," the Junto. An experiment of pooling personal books to provide a resource for their debating material and for other use was not a success. Franklin then proposed a library provided by the subscription of 40 shillings by each member of the Junto and an annual fee of 10 shillings. Out of this proposal came the Library Company of Philadelphia, founded in 1731, often referred to as the mother of the social library in America. Before long subscription libraries began to appear in all of the colonies (*49*).

Three other early major social libraries—like the Library Company of Philadelphia, still in existence—are the Redwood Library of Newport, Rhode Island, the New York Society Library of New York City, and the Charleston Library Society of Charleston, South Carolina.

The Redwood Library was founded in 1747 and was the first of these libraries

in America to receive a charter. It too grew out of a discussion group, the Literary and Philosophical Society dating back to 1730, or at least the society seems to have been influential in Abraham Redwood's offer to donate £ 500 if a company for the establishment of a library were formed. The offer was accepted and money pledged for a building on property donated by one of the society's members. The Provincial Assembly issued a charter in 1747. By 1750 the library was in its own building and 5 years later Dr. Ezra Stiles (pastor at Newport, who later became president of Yale University) became its librarian. He seems to have devoted some of his time each week to the library, but the founder decried the Anglican influence of Stiles and those who controlled the library (*50*). According to Horace Scudder, the character of the original collection attracted Stiles to Newport. "The books bought with Mr. Redwood's money were considered at the time the finest collection of works on theology, history, the arts and sciences in the American Colonies" (*51*). The library suffered during the Revolution and in 1790 it was described as "in a sad plight and in the period of stagnation many books disappeared and about three quarters of the collection was lost." The library achieved a "renewed prosperity" in the 19th century. In 1952 the library began a buying campaign to restore the original collection (*52*).

The New York Society Library, organized in 1754 as the City Library, held its first board meeting at the City Arms on Broadway. The meeting was concerned with the raising of money to erect and maintain a "publick Library." It was reported that "not less than 70 gentlemen have already subscribed Five Pounds Principal and Ten Shillings per Annum, for that Purpose." Soon the 118 subscribers were asked to submit a list of books each considered to be desirable. To books purchased was added a collection of about 2,000 volumes, known as the corporation library. This was a gift to the city from two Anglican clergymen who were distressed with the paucity of reading material in New York: the Reverend John Sharpe, chaplain of Queen Anne's forces in New York, who observed "there being no place I know of in America where it [learning] is less encouraged or regarded"; and the Reverend John Millington of Kensington, England, who found New York an "uncultured little city of seven thousand souls in the 'Plantations in America.' " The latter left his books to the SPG to be shipped to New York. The library was open not only to city residents as subscribers but to those who lived in the colony. Nonsubscribers might borrow books by leaving a deposit of more than one-third the value of the book or books taken. The library was first located in a room in City Hall with Benjamin Hildreth as library keeper, "who received £ 6 annually for 'his Trouble and Care while in that Office.' "

By 1795 the library had erected its own building. It had fallen upon evil days during the Revolution but began to move toward recovery in 1788 when operations were resumed. A catalog of 1793 listed 5,000 titles. In 1840 the library was located at Broadway and Leonard and remained there for 13 years. A large lecture room in these quarters permitted varied entertainment, discussions, and assemblies. Among those who appeared were Fanny Kemble, the Swiss Bell Ringers, Campbell's Minstrels, and Edgar Allan Poe, who lectured on American poetry (*53*).

The Charleston Library Society was founded in 1748, the earliest proprietary

library in America according to Edgar Reinke. Established by 17 young men, the number of members increased to 160 before mid-century. The library was granted a charter by the colony, confirmed by the crown in 1755. It began with the intent of acquiring magazine and pamphlet material but soon acquired books as well. The library prospered because the early members "were all of the aristocratic, paternalistic class prevalent in much of the South at that period." Many of them had received their formal education abroad and sent their sons and daughters abroad for education. There were weekly meetings to which members came, usually 20 to 30. A part of the income of the society was invested in bonds with the result that by 1775 the funds amounted to £ 18,000. With sophisticated, well-educated members, the library emphasized the classics and had a fine collection of classical literature. It suffered some from the occupation of Charleston by British troops during the Revolution but was largely destroyed by a major fire. It continued for some years as a social club and then in 1790 it was reorganized with the remaining books as part of its collections (*54, 55*).

Shortly after the successful beginning of Franklin's Library Company of Philadelphia, subscription libraries of varying sizes began to proliferate in the middle colonies and particularly in New England. Prior to the Revolutionary War, however, there were only two or three in the South (*56*). The social libraries, like the parochial libraries that preceded them, filled a need in the colonies, which were beginning to expand in population. Their collections were quite different, with less emphasis upon religion and more upon secular matters of concern: history, biography, travel, poetry, grammar and rhetoric, agriculture, arithmetic, and natural science are examples of the areas of more prevalent works. Shera suggests that the year 1790 was the midpoint in the effective life of the social library with its period of most vigorous activity from 1790 to 1815 and a gradual decline from 1815 to 1850 (*57*). Like most social agencies the social library suffered in periods of economic decline. The social library declined largely as a result of a number of factors of which the rise of the public library was but one. For one thing it could not "meet the expanding demand for library resources"; it was restrictive, that is, its clientele was limited at a time when the movement toward popular education was becoming strong. It did make a major contribution to the library movement:

> Almost from the very beginning the social library movement assumed the central attributes of a public library system. . . . By virtue of the implications for the future, as well as of the character of its past, the social library is an important factor in the evolution of the modern public library (*58*).

A strictly commercial library was the circulating library, perhaps more accurately a collection of books gathered together for those who wanted them for home use. And the intent of the proprietor was profit. He was more likely than not to cater to popular taste and to avoid concentrating on "good literature." Quite often circulating libraries were operated in conjunction with bookstores. Although they had been in existence on the Continent and in England much earlier, these libraries became active in the latter half of the 18th century in America. One of the earliest, that of William Rind of Annapolis, opened in the fall of 1762. This library and

very many of those which followed it had a relatively short life. One of the major problems was that of relending on the part of patrons, a practice that deprived the proprietor of needed revenue. It was necessary, too, for the circulating library to anticipate and keep up with the more ephemeral materials. A major criticism of this form of library was that it relied heavily on fiction, "a discredited literary form" (*59*).

Other types of libraries rose to fill a need for books prior to the appearance of the public library. While rather similar in character they were known variously as mercantile libraries, mechanics' libraries, young men's libraries, and apprentices' libraries. These libraries were closely related to the growth of the education movement in the first half of the 19th century. Mechanics and apprentices turned to libraries for satisfaction of their need for education and the form of library they used was a modification of the social library (*60*). In England at the turn of the century, workers' institutes devoted to the "intellectual development" of the workers appeared with emphasis upon science in the beginning but expanding later to include literature, history, and the arts. There were libraries, lectures, and discussions as part of their programs. The movement was extensive in England and spread to America (*61*). Most of such libraries in America, according to F. B. Perkins, had an education department or school as a principal activity. Classes were offered in bookkeeping, arithmetic, writing, and language. Some also had, in addition to a reading room, a game or chess room, and in some instances a gymnasium. Perkins further suggested that they were "planned rather like a sort of business college, as if to furnish a general higher education to those who were not able to go as far as desirable at school" (*62*). Their collections, he reported, varied, were "founded on old and solid libraries," and were "of much positive value." Most were, however, "to a predominating extent . . . as they must necessarily be, collections of popular literature." Like most other libraries of their era, a major lack was money. They overcame a part of their difficulty by bringing in a group of older men whose concern was control of the property interests of the group (*63*).

Mercantile libraries, "as distinct from other social libraries . . . may be described as primarily for the use of merchants' clerks; secondarily, also, for all general readers" (*64*). More specifically, they were intended to satisfy the reading requirements of the merchants' clerks and were supported in part by merchants and a periodic fee. They differed from mechanics' and apprentices' libraries in that they began as libraries; their educational aspects came later. There was also a greater emphasis not only on business-related areas but upon history and literature (*65*).

Still another type of library providing books primarly to young men and artisans, but to others as well, was the YMCA Library. The first Young Men's Christian Association in America was founded in Boston in 1851, "for the improvement of the spiritual and mental condition of young men." The YMCA Libraries, therefore, developed in the period when the "public" library, as exemplified by the Boston Public Library, was emerging. By 1859 there were 145 associations with libraries, 12 of which had 1,000 or more volumes. In 1875 it was calculated that there were 478 associations with an aggregate membership of 43,612; of these associations 180 reported having libraries, with a total of 164,188 volumes. The largest of these libraries was said to be that in Washington, with a collection of about 15,000 books.

Like the mercantile, mechanics', and apprentices' libraries, they also had lectures. In the larger towns the YMCA was apt to have classes in "those branches of practical knowledge which are especially available in business pursuits." In many towns the only library "open to the public" was that of the Young Men's Christian Association. The reading rooms "are always free to the general public." An effort was made to have the libraries open "at hours when they will be conveniently accessible to the young men of the community." Occasionally they were open on Sunday. The library in New York was reputed to have the best collection. The information in Table 1 indicates its breadth.

The libraries described in the preceding paragraphs served as forerunners of the tax-supported library that provided free access to all comers. They provided access to books for several levels of society when in most cases there would otherwise have been little access to them. While the social library was still in the ascendant the first moves toward the public library were made (*66*).

Caleb Bingham, a Boston bookseller and publisher, in 1803 made a donation of 150 titles to his native town of Salisbury, Connecticut, to serve as a library that would provide reading he did not have as a boy. A self-perpetuating Board of Trustees was to have control of the Bingham Library for Youth, open "freely" to those between 9 and 16 years of age. The library was accepted gratefully by the town, which appropriated $100 for the purchase of "suitable books." Such support continued fitfully for years and then the library was entirely neglected until it was absorbed toward the end of the century by the Salisbury Library Association, which became the Scoville Memorial Library Association (*67*).

The town of Lexington, Massachusetts, also had a library, funds for which were appropriated in 1827. By 1839, however, the town discontinued its periodic payments for support. Shera suggests that a pattern had begun to emerge, that municipal support had been given to these two libraries, and that the next step was "institutional permanence and stability" for the public library derived from municipal support. This came with the establishment of the Peterborough Library in 1833 (*68*).

In 1835 New York State passed legislation that permitted the levying of a tax

TABLE 1

Holdings of the New York YMCA Library

Category	Percent of holdings
History	11½
Biography	4
Travel and geography	3½
Bibles and biblical works	6
Theology	3½
General literature	18
Poetry and drama	7
Fiction and tales	29½
Arts and sciences	17

to support school district libraries. Other states followed but by 1876 the impetus was lost. Oliver Garceau credits their decline to the fact that they were artificially created by state planners, following no local pattern of cultural loyalties; they served too small an area—in New York only 267 persons to the district; they were inadequately housed, poorly supervised by school trustees, and badly managed by elected librarians (*69*).

In Indiana an attempt was made to set up county libraries under the constitution of 1816. Because of the frontier conditions it failed.

The first large municipality to establish a library that met the requirements of a modern public library was Boston, which opened the doors of its library to the public on March 20, 1854. The concept of a public library for Boston had been suggested in a letter written by George Ticknor, Smith Professor of the French and Spanish Languages at Harvard, to Daniel Webster in 1826, 7 years before the Peterborough Library was established. Ticknor, a trustee of the Boston Athenaeum—once called a public library by Charles Coffin Jewett ("practically it is such")—wrote that he had a project to join all of the libraries of Boston, including the Athenaeum, into "one establishment." He would let "the whole circulate." He envisioned elimination of duplication of books, of quarters, and of librarians and their salaries. With the money saved he would buy more books. Nothing came of the proposal (*70*). Suggestions as to combining the libraries of Boston into one large unit also came from a Frenchman, Alexandre Vattemare, a ventriloquist whose stage name was M. Alexandre. Vattemare had visions of bringing peoples closer together by an international exchange of books—as had the Reverend Brown's associates before him (*71*). He appeared in New York in 1839 and over the next 2 years he advocated his plan during his various appearances in the United States and Canada. In Boston in 1841 he interested a group of young men who used the Boston Mercantile Library and several prominent citizens, notably, Charles Francis Adams. No project materialized but there was an exchange of gift books between Vattemare in Paris and the City of Boston. One of the gifts, a rather handsome one of nearly 100 volumes, led to the appointment by the City Council of a Select Committee to recommend a suitable return gift and a place where the gift books should be kept. The committee recommended a room in City Hall. It also included the recommendation that there be established a public library and advised that an anonymous donor (Mayor Quincy) was offering $5,000 toward the project with the proviso that $10,000 for the purpose be raised "at large." The library was to be "fully used by all, as may be consistent with the safekeeping of the property." As a result of this proposal the council in November 1847 appointed the Joint Special Committee on the Public Library, which among other charges was to consider the feasibility of applying to the legislature for the authority to establish and operate a public library. In early 1848 a new City Council directed the mayor to apply to the legislature for such authorization, which resulted in an act authorizing the City of Boston to establish and maintain a public library. The governor of Massachusetts signed the act on March 18, 1848 (*72*). A prime force in the progress toward the establishment of the library was the zeal of Mayor Josiah Quincy. Also important in the movement were George Ticknor,

Edward Everett, and Mayor Joseph Bigelow, who followed Josiah Quincy as mayor in 1849. Quincy, treasurer of the Boston Athenaeum, naturally favored joining the two libraries. The Athenaeum had been established in 1805, an outgrowth of the Anthology Society organized to continue publication of the *Monthly Anthology and Boston Review*, about to go out of existence. The next step was an Anthology Reading Room and Library, a subscription to which would cost $10 per annum. Soon there were 160 subscribers. When the library opened on January 1, 1807, there were more than 1,000 volumes and English, French, and American periodicals (*73*). The Athenaeum grew and prospered although it was in some difficulty in mid-century because of unanticipated costs in the construction of its new building. The proposal to join the two libraries fared well until it was put to the proprietors for approval. The proprietors postponed the matter indefinitely and the Public Library proceeded on its own (*74*).

The library began operation by opening to the public the first of its two rooms in the Mason Street Schoolhouse on March 20, 1854. It was open daily (except Sunday) from 9:00 A.M. to 9:30 P.M. and all "inhabitants" of Boston over 16 years of age might use it. A single volume might be withdrawn for home use for 14 days on signature and agreement to observe library rules by a select list of people including, among others, city officials and employees, ordained ministers, teachers in private schools, and benefactors (contributors of $100 or more). Other inhabitants of Boston who wished to borrow a book must deposit full value of the book with the librarian (*75*). The first librarian appointed by the council, Edward Capen, was a Harvard M.A. who had later become a graduate of Harvard Divinity School, and who had served as a clergyman for several years. He was appointed in May 1852. While he was still serving as librarian, the council at the behest of the trustees appointed a superintendent who would have the general responsibilities of administration. The appointment was an annual one and the position might remain vacant by decision of the council or by the trustees' decision not to make a nomination. The first appointee was Charles Coffin Jewett, who served from 1858 until his death a decade later. Jewett had been librarian of the Smithsonian Institution in Washington and had come to Boston to work with the books received through the munificence of Joshua Bates. For that purpose the trustees rented a house on Boyleston Place in 1855 wherein Jewett was installed (*75*). Joshua Bates, a poor boy of Boston who grew up with nothing to spend on books, had the good fortune to be able to satisfy his great desire to read in the bookstore of Hastings, Ethridge and Bliss, after his long work hours in a counting house. Remembering his own lack, Bates, who was senior partner of the London Banking House of Baring Brothers and Company, offered the sum of $50,000 for books. When the council put a new building under construction, Joshua Bates offered a second gift, the purchase of a "considerable" number of books to be held in trust for the new quarters so that when they opened there would be an adequate number on hand. He estimated the cost would run $20,000 to $30,000. It was this latter gift that Jewett was hired to prepare (in the temporary quarters on Boyleston Place) for use in the new building (*76*).

Under Jewett's administration the library made substantial progress. The li-

brary had moved into its new building on Boyleston Street on New Years Day, 1858, and Jewett became its new superintendent almost immediately. On Jewett's death, January 8, 1868, he was succeeded by a trustee, Justin Winsor, under whom the library continued to progress. When he resigned and became librarian of Harvard in July 1877, it was an outstanding library (*77*). By 1868 it had a collection of 144,000 volumes and 50,000 pamphlets, second then only to the Library of Congress, which had 175,000 volumes and 70,000 pamphlets. At that time Winsor noted that only two other public libraries had fairly sizable collections: New Bedford, 21,000 volumes; Cincinnati, 20,000. He noted that Liverpool, the largest of the English public libraries supported by the penny rate, had 84,000 volumes. By 1877, too, there were six branches, several stations, and regular deliveries of books to 13 firehouses and a fireboat.

The motives of those who were largely instrumental in the founding of the Boston Public Library and libraries in larger cities have in recent years come under question. Michael Harris, in an article entitled the "Purpose of the American Public Library," attacks what he calls the comfortable concept, widely held, that the public library movement was "launched in the 1850's by an intelligent middle class led by a group of enlightened civic leaders." George Ticknor is seen as insisting that the public library should be "dedicated to the continuing education of the 'common man.'" Actually public libraries, Harris argues, were always "generally cold, rigidly inflexible and elitist institutions." He makes a strong case to support his contention that the founders were men of substance, conservative, and dedicated to the preservation of the form of the society they ruled over. The library, as they saw it, would help educate the new residents of the city, for they were not capable of understanding the country's free institutions. They would be brought "in willing subjection to our own institutions." Harris continues with the concept that those who were hired to run the libraries were "technicians" who were "dedicated" to the founders' concept of the library. Carnegie when he appeared was equally authoritarian in his approach to the founding of libraries and he saw them as a means of helping persons to help themselves, to "make men not violent revolutionists, but cautious evolutionists; not destroyers, but careful improvers" (*79*). Harris further sees librarians as moving the public library in the first half of the 20th century toward assuming the role of a bastion of democracy "by assisting the successful working of self government" (*80*). The library would do so by providing information on both sides of a subject. The user would decide for himself, and the librarians' traditional "passivity" would not be brought into question. Harris's "revisionist interpretation" has not gone unchallenged. Phyllis Dain in her article "Ambivalence and Paradox" points out that Ticknor was indeed "aristocratic and conservative" and that his choice of the public library as a means to open opportunities to people, rather than to close them, was "an expression of the 18th century rationalists' faith that the lower classes could be integrated into society through education" (*81*). She also points out that in view of the urban masses' lack of leisure time, lack of access to those who controlled the money, and low level of education, none but an "elite group" was left to foster the public library. As noted earlier there were many other forms of libraries—mercantile, apprentices', mechanics'—

supported in part and used by groups who were not elitist. Phyllis Dain also challenges Harris's criticism that librarians had become technicians and bureaucrats. The increase in numbers of libraries, size of collections, and in staff naturally led librarians to "rationalize procedures and bureaucratize personnel" (*81*). The Harris thesis, too, does not account for the large numbers of public libraries established in modest-sized towns that lacked urban poor. It might be noted in passing that in England there were in Parliament members of the "elitist" group who "almost feared that these libraries might be converted into normal schools of agitation."

The public library movement in the latter part of the 19th century was stimulated by the philanthropy of many who had made their fortunes in America's burgeoning industries. One very early benefactor was John Jacob Astor, who in a codicil to his will, in August 1839, set aside $400,000 for the establishment of a public library. He was directed toward this philanthropic move by Joseph Green Cogswell, who subsequently (at Astor's request) moved in with him and spent some years prior to Astor's death in 1848 in buying books, preparing catalogs, and seeing to it that the benefactor did not change his mind about his bequest. He helped plan the building and served as superintendent of the library from its establishment until 1861 and as a trustee until 1864. Cogswell thought of the Astor Library as a reference library and primarily for those engaged in research. No circulation was permitted. Its hours were short and access difficult. As a result it enjoyed a poor press and complaints were widespread. Members of the Astor family continued to contribute to the library for some years, so that it was able to grow and to achieve preeminence. From 1876 to 1894, however, "it had lost its pre-eminent position and slipped into somnolence" (*82,83*). James Lenox, a wealthy and prominent New Yorker, founded a second reference library in New York City. The founder, a merchant and large property owner, was a bibliophile who gathered a fine library of 20,000 volumes which in 1870 he had incorporated into a public library. If anything it enjoyed an even poorer reputation as a public institution than the Astor Library. It was some years after its establishment before it was finally opened to the public. Because of its great treasures and the fear of its founder that they would be lost or vandalized, access was very limited. Further, "stress was placed not on use of materials but on viewing them" (*84*). A third major bequest for the establishment of a library was that contained in the will of Samuel J. Tilden, which placed the largest part of his estate, $5,000,000, in the Tilden Trust. Tilden, a successful lawyer, had established his reputation by prosecuting successfully the Tweed Ring. He had run on the Democratic ticket for the presidency of the United States in 1876 but lost the election in the recount of votes made in three southern states. The trust was attacked by members of the family, nieces and nephews. Although the court suit went against the trust, there was eventually an agreement to partition the estate, which provided the trust with something between $2 and $2½ million. In 1895 the two libraries, Astor and Lenox, were merged with the Tilden Trust to create the New York Public Library. The first director was John Shaw Billings under "whose forceful leadership they [the trustees] saw the New York Public Library built almost overnight into the illustrious institution of their ambitions" (*85*). The library created in 1895 was a reference library. The circulation function was

achieved when an agreement of consolidation was completed with the New York Free Circulating Library, January 8, 1901. The Free Circulating Library, incorporated in 1880, was the outgrowth of the efforts of the teachers of a sewing class in Grace Church who wished to raise the reading level of the children. As interest grew in the project and more women became involved, a reading room was provided for the 500 books collected. The project expanded, was incorporated, and at the time of the consolidation the library possessed some $300,000 in cash and securities and five buildings (valued at $300,000) and operated 11 branches whose 160,000 books accounted for an annual circulation of 1,600,000 (*86*).

In Baltimore, Enoch Pratt, a successful merchant and investor and a native of New England, presented the city in 1882 with a sum of $1,058,333.33 for a library provided the city would agree to create an annuity that would provide $50,000 per annum. The gift consisted of a building already under construction that would cost $225,000 and "upon its completion, the additional sum of eight hundred and thirty-three thousand three hundred and thirty-three and one-third dollars." The library grew rapidly and in a decade had a collection of 150,000 volumes and five branches. Andrew Carnegie in 1905 offered $500,000 with which to build 20 branch libraries. The branches were built over a period of years. The City of Baltimore, too, began adding money each year to supplement the annuity's yield as operations expanded and expenses rose. Much of the later success of this library may be attributed to Joseph L. Wheeler, who became its director in 1926; he was an outstanding administrator who later became a sought-after library building and management consultant (*87*).

Many libraries, some quite large and others designed to serve relatively small towns, were established by gifts of wealthy men and women in the next few decades. The major benefactor of libraries, of course, was Andrew Carnegie. Born in Dunfermline, Scotland, in 1835, he came when a boy (1846) to the United States with his parents, who settled in Allegheny, Pennsylvania, a city across the Allegheny River from Pittsburgh. Successively a bobbin boy in a cotton mill, a telegraph messenger, a telegrapher, and a section superintendent for the Pennsylvania Railroad, he began to invest his money in profitable projects and then entered the iron and steel business. From his various sources of income Carnegie amassed a huge fortune for the day. About 90% of that fortune went into various charitable and philanthropic projects—more than $333,000,000 (*88*). He donated $56,162,622 to construct 2,509 library buildings in the English-speaking world. Except for a few instances, Carnegie donated money only for buildings and did not support or endow libraries. The support of the building by the municipality was a stipulation required before the grant was made. In America he provided $41,033,850 to construct 1,412 buildings (*89*). With the library acting as his agent he entered into an agreement with New York City on July 17, 1901, to provide the city with funds to acquire in the boroughs of Manhattan, Bronx, and Richmond "not more than 42 [later raised to 50] library sites" and erect buildings on them. Earlier, Carnegie had made a contribution to the Free Circulating Library.

The Carnegie library grants were given between the years 1886 and 1919. The

bulk of the gifts were made in what he called the "wholesale" period, 1898–1919: to libraries in 1,406 communities in the amount of $39,172,981 (*91*).

At the time of publication of the Bureau of Education's Special Report, *Public Libraries in the United States of America* (1876), the editors were able to include a "Table of public libraries numbering 300 volumes and upwards" which included 3,649 libraries. The majority of those listed were university, college, academy, public school, mercantile, and social, and were not municipally supported. There was a fair sprinkling of libraries bearing the title "public library." In 1890, however, of America's 16 largest cities only 7 had municipally supported central libraries (*92*). The period of the Carnegie gifts changed this situation markedly. Not only did his gifts account for more than 1,400 library buildings but they stimulated communities that had avoided applying to Carnegie initially to provide libraries on their own at a later date. Libraries had spread over the United States in increasing numbers as the last decades of the 19th century were reached, but the major growth came after the Carnegie period.

The growth of the public library movement was slowed somewhat by the great depression of the 1930s. As with many other public agencies the libraries found themselves with shrinking appropriations and revenues but with increasing use. Library adult book circulation, particularly nonfiction, was up. Total expenditures were down but expenditures for books dropped relatively more than did salary expenditures. Two of the economic factors that explain increased use of the public library are unemployment and the reduced earnings of those employed (*93*).

During World War II a definite move toward improved public library service in the years to follow the close of hostilities was the *Postwar Standards for Public Libraries* (1943), followed in 1948 by the publication of *A National Plan for Public Library Service* prepared for the Committee on Postwar Planning of the American Library Association by Carleton B. Joeckel and Amy Winslow. In 1950 came the Public Library Inquiry which was designed to be "a thorough and comprehensive study of the American free public library."

By 1956 the Coordinating Committee on the Revision of Public Library Standards, Public Libraries Division of the American Library Association, had produced *Public Library Service: A Guide to Evaluation with Minimum Standards*. The document was made up of principles and standards and covered subjects, books and nonbook materials, personnel, the organization and control of materials, and physical facilities. The *Standards*, as they came to be called, were criticized by some librarians as being goals rather than standards, for they were impossible of attainment by most libraries. Other librarians complained that there were not enough "measurements" given. A supplementary publication subsequently provided such statistical measures for libraries in several categories by size. In 1967 the American Library Association published an updating of the *Standards* entitled *Minimum Standards for Public Library Systems, 1966*. This publication contained a number of finite standards as well as the principles and broad standards.

The 1956 *Standards* contained a statement that was to affect public library development for some years to come:

> Libraries working together, sharing their services and materials, can meet the full needs of their users. *This co-operative approach on the part of libraries is the most important single recommendation of this document.* Without joint action, most American libraries will probably never be able to come up to the standard necessary to meet the needs of their constituencies (*94*).

Library systems were not new. They had developed out of county libraries at the turn of the century. In particular, they developed into county systems in California. By 1916 "thirty-seven of California's fifty-eight counties were persuaded to establish libraries" (*95*). From the county system it was but a small step to the multicounty library system or regional library system. In 1969 the American Library Association published a survey of systems. The system concept has become an integral part of most state public library plans, to which are being added networking and resource sharing. These techniques are being made more effective through the use of computer bibliographic data banks like the Ohio College Library Information Center (OCLC), which extends its service over a large part of the United States. Another benefit of OCLC is its classification and cataloging service.

Despite the efforts of the American Library Association to improve library service after the end of World War I and the efforts of its committees as noted above, there were still over 85 million Americans without adequate library service in mid-century, particularly in rural areas. In 1956 a U.S. Office of Education report revealed that 26 million rural residents were without any public library service. An additional 50 million rural residents had inadequate service. A very strong effort with farm block support succeeded in passing the Library Service Act in that year (1956). It authorized the appropriation of $7.5 million annually for 5 years. The funds were for "services" and were limited to rural areas (10,000 or less). No money was appropriated until 1957 when the Congress appropriated $2,050,000. The next year it appropriated $5 million, and $6 million for each of the next 2 years (*96*). In 1961, the act was renewed for another 5 years, but in 1964 it was amended to become the Library Services and Construction Act. It contained two titles: I. Services; II. Construction. Funding was in the amounts of $25 million and $20 million, respectively, and the restriction of funds to rural areas was removed. The act again was amended to provide two additional titles in 1966: III. Interlibrary cooperation; IV-A. State Institutional Library Service and IV-B. State Library Services to the Physically Handicapped. The act was renewed in 1970 and continued through fiscal year 1976. Title IV was joined with Title I, which resulted in some fear that both Title I activities and services to the handicapped might suffer if funds ran out.

The Library Services and Construction Act has generally been considered to have had a very beneficial effect upon the public library programs. It resulted in the institution of service to many unserved rural people, in service to the disadvantaged, in the upgrading of services at the state agency level, and in a great number of new library buildings. Federal funds were provided for demonstration projects that resulted in the provision of local funding for their continuation. One criticism levied at the program was that too much of the federal allotment in many states went into agency operational costs, to the detriment of libraries in need of support.

Of particular importance was the money (relatively less than for other titles) awarded under Title III for cooperation between types of libraries (97). Out of early experiments have come "networking" and "resource sharing" that may well cut into duplication of materials, services, and costs.

Until the mid-1960s funding for public libraries under the Library Services and Construction Act seemed to be growing at a rate quite satisfactory to librarians and their supporters. The amended act of 1966 projected a total authorization over the next 5 years of $700 million for the four titles of the act. As the extent of the United States' involvement in Southeast Asia became a major factor in the nation's economic life and inflation increased accordingly, there was less funding available for social and educational programs at the national level. Table 2, covering fiscal years 1969, 1972, and 1973, indicates the changes that occurred.

The figures in Table 2, taken from *The Bowker Annual* for the years cited, do not tell the complete story, for funds could be and were impounded by executive order. To replace categorical funding such as LSCA, the president proposed in 1972 a new type of funding, revenue sharing, which provided funds for state and local governments over a 5-year period. These funds were to be spent for "priority expenditures" which included libraries but placed them somewhat down the list of priorities. In many instances local governments had other programs they preferred to fund and some municipalities merely substituted revenue sharing funds for local funds they had been appropriating for libraries.

The public library in America in the 1960s and early 1970s moved actively to take materials and programs to the people who were not accustomed to coming to the library for them. More specifically, librarians were seeking ways to stimulate minority groups and others who did not have library use in their backgrounds to take advantage of and use library services. One major approach was "outreach," taking programs and services to the inner city or wherever these persons might live. Reference and information services were greatly improved and the library became responsive to the multimedia orientation of the country's youth. The public library, too, became actively involved in continuing education. It was suggested by one of the library's strong supporters that it had "become the most economically effective educational institution evolved by mankind." It served as the resource center

TABLE 2

LSCA Appropriations, 1969–1973

Fiscal year	Title	Authorization ($)	Appropriation ($)
1969	I	55,000,000	35,000,000
	II	60,000,000	9,185,000
	III	10,000,000	2,281,000
1972	I	112,000,000	46,568,500
	II	80,000,000	9,500,000
	III	15,000,000	2,640,500
1973	I	117,600,000	30,000,000
	II	84,000,000	0
	III	15,750,000	2,640,500

for those enrolled in "external university" or "university without walls" courses, and for high school students preparing for the College Level Examination Program (CLEP). Some of the larger city libraries, too, entered cooperatively into continuing education programs sponsored by nearby colleges and universities. For the individual proceeding on his own it provided the source of information and materials for his self-education. Librarians themselves enrolled in courses designed to train them to work with the patron who wished to retrain himself or raise the level of his knowledge. The public library thus provided information, books, and nonbook materials supportive of the individual and group educational efforts.

As the public library approached the last quarter of the 20th century it was beset with a number of difficult problems. The principal one continued to be that of adequate financial support. Urban libraries, particularly those in the older cities of the Northeast and Midwest, were suffering from the effects of urban blight, the flight to the suburbs, and sharply increasing expenses of operations. The library, a part of municipal government that unfortunately did not command as high a priority as some other functions, was forced in many instances to close some branch operations and curtail the hours of opening at the main building. To cope with these problems and to pressure for federal support there was formed the Urban Library Council made up of the librarians of nearly 50 major urban libraries. Despite what seemed to be a rather dark picture, a number of cities have managed to keep the library operation on a fairly even level and in some instances to float bond issues to construct new main libraries and branches. During the year 1976 there were 277 public library construction projects completed, of which 90 were building alterations. The total expenditure for the projects was $66,374,466, with the majority of this construction for medium-sized and small buildings. Most librarians who considered the problems of administration and who wrote of their reactions were not pessimistic about the future.

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FRANK B. SESSA

CONTEMPORARY LIBRARIES IN THE UNITED STATES *

The contemporary public library in the United States can be understood to some degree through the historical perspectives of its origins in the 19th century along with the impact social forces have had on it in more recent decades. As a product of the 19th century, the public library came into being through the far-reaching influences of the industrial revolution, the growth of cities, and the accumulation of private and public wealth. To avoid oversimplification, it should be noted that the soil giving root to the American public library was nourished by complex concepts arising out of democratic beliefs as elemental as the rights of individuals to think, to believe, to strive for intellectual development, to participate in the political process, to improve vocational capabilities, and, if one were to select the most general of basic beliefs, to pursue happiness. The view has been expressed that the impetus behind the development of the public library in concept, stated in the broadest terms, is at once Calvinistic, deistic, and egalitarian. However stated, there is general acceptance of the historical concept that the public library movement in the United States, while fitting generally the pattern of social and political development, is part of the American commitment to equal educational opportunity and freedom of thought and expression.

It was against this broad background that public librarians in the first half of the 20th century welcomed the writings of those who confirmed the belief that the primary objective of the institution they served was educational. Gerald Johnson spoke of the public library as the "peoples' university"; and, more extensively, Robert D. Leigh wrote of the library as having become "a kind of symbol as well as servant of culture." He said that the librarians' concept of functions had been transformed over the years into a dynamic faith. It consisted, he wrote, "of a belief in the virtue of the printed word, especially of the book, the reading of which is held to be good in itself or from its reading flows that which is good" (*1*). In his book *The Public Library in the United States,* he not only established the fact that virtue in books has been a traditional faith of the American librarian, but he set down these general definitions of objectives:

1. To assemble, preserve, and administer books and related educational materials in organized collections, in order to promote, through guidance and stimulation, an enlightened citizenship and enriched personal lives.
2. To serve the community as a general center of reliable information.

* The References and Bibliography for this section begin on page 331.

3. To provide opportunity and encouragement for children, young people, men, and women to educate themselves continuously.

Such a statement of belief alone is inadequate to sustain the public library in today's world. While the realities may not be the same for the 1,100 to 1,200 public libraries serving about 125 million people in municipalities over 25,000 population as it is for the approximately 7,000 public libraries in this country's 20,000 communities with under 25,000 persons, they are all confronted with changing conditions that require rethinking of their goals and objectives and restructuring of the style of management.

Changes Affecting the Community Library

With the impacts of change rampant in the final third of this century, librarians are faced with the necessity of reassessing their institutions in view of changing sociological, technological, institutional, organizational, and educational environments. To these must be added change in our concern over economics, energy resources, and the environment itself. All have had impacts on the community library as they have had an influence on all our local agencies and citizens in general. Probably the greatest impact (and sometimes the least understood, moreover) is the effect of accelerating change in nearly all areas of our lives. A subtle influence of change within the institution is the concern for its survival. This concern is not restricted to the library; inherent in change is a concern for survival of all institutions. Most experts believe that institutions that move with change and adapt in order to remain relevant to their clients will survive. Insofar as the contemporary public library is concerned, it does not appear to be a question of libraries as a whole surviving but rather the conditions of adaptation and modification which are necessary to assure survival of individual libraries. Ralph W. Conant believes, for instance, that independent libraries will keep ahead of fast-moving social change only if they are in touch with major trends of the times and adapt service to meet changing demands. He points out that the trends yielding the most useful clues to change are: population growth and distribution in urban areas, expanding knowledge, technological advances, increasing wealth and declining poverty, evolving government policies requiring intergovernmental cooperation, and interinstitutional planning.

Among the changes which recent writers view as danger signals having great impact on public libraries are urbanization, rapid expansion of knowledge, technological development, and the seeming inability to adjust. They point out that libraries, as traditional institutions, have found it difficult to rise above their bureaucratic structure, develop strong leadership, and learn effective techniques to join in the solution of society's problems. It seems fairly obvious that to do so effectively requires greater understanding on the part of the public librarian of several environments, some of which may be characterized as sociological, technological, institutional, organizational, and educational. While there may be among

librarians an understanding of the scope of change and its impact on public libraries, there is a concern among recent writers that the problem cannot be viewed as solely diagnostic but rather that the profession must assert its ability to develop programs to cope with changes and respond to society's demands.

The quantity of current literature on the condition of the American public library produced by writers expert in a variety of disciplines is immense, critical, and sometimes pessimistic; but the best of it is analytical and optimistic. From this group of writers the briefest statement about the contemporary public library is filled with challenges. An up-to-date example is the 1975 report of the National Commission on Libraries and Information Science, which states:

> Public libraries in the United States are facing new problems with respect to their internal operations. Financial support is not keeping pace with increasing costs; and the libraries are under increased pressure to give service in more breadth and depth to a wide range of users who vary in age, education and interests. They are limited in their ability to tap new technological sources of information and they are constrained from upgrading their present manual methods to automated systems.
>
> In many instances, these problems have caused the public library to expand its normal resource sharing activity by affiliating with technical processing cooperatives, depending on larger libraries for backup, expanding interlibrary relationships, and joining public library systems and networks outside their local jurisdictions.
>
> More than any other type of library, public libraries are close to the people in the communities in which they exist. Each is governed and managed by a board of trustees which reflects the interests and needs of the residents of the library's service area. The strength of the public library is its democracy, its service to all people across age, ethnic, economic and cultural lines. It caters to children, to young adults, adults, and to senior citizens; and it is a major educational force in American life. Public libraries, including the smallest, are the backbone of the library system in America, and are the potential windows on any future nationwide network. Therefore, a great deal depends on the strength of their human and material resources and on their ability to undertake new programs of value to their constituents. Most public libraries are well below the minimum American Library Association's standards and are inadequate to meet the information needs of the public. The public library, particularly in large metropolitan centers, is in a state of flux, and major changes in its funding and operating philosophy must occur, if it is to serve its community effectively in the future. Financial studies indicate that local sources of revenue alone will be insufficient to meet the public's demand for new programs, new construction, and new staff. Moreover, recent developments give disturbing evidence that public libraries are seriously threatened by deficit budgets resulting from cuts in municipal budgets or failure to get Federal revenue sharing funds. Balanced intergovernmental funding at the local, state, and Federal levels is essential to achieve the content and quality of public library services commensurate with the needs of modern society (2).

Objectives of the Public Library

From the growing literature concerning the condition of public libraries in the United States, there appears to be heavy emphasis on the need for a critical re-

view of their objectives in light of recent complex social changes. Such an emphasis on the development of goals and objectives is the result of increasing application of recognized management concepts to the administration of libraries. It recognizes that planning and programming is based upon goals and objectives which may be developed by a library and periodically monitored by the staff to evaluate progress in responding to change. The term "objective" is often used interchangeably with "goal." In the context in which both terms are used here, "objective" means an immediate aim, while the term "goals" is used to suggest ongoing aims or ambitions which may not be achievable in the foreseeable future.

Several writers have expressed the opinion that rethinking library objectives is of major importance. "It is characteristic of libraries and other institutions," observes Ralph Blasingame, for example, "that they operate either without objectives or that, when called upon to produce a policy statement, they produce either cliches or statements of objectives designed to cover the entire field rather than any particular institution" (*3*).

This concern was also expressed by a project committee of the Public Library Association, which produced in 1972 *A Strategy for Public Library Change: Proposed Public Library Goals—Feasibility Study*. It sets forth, succinctly, recommendations which call for specific actions to "enable the public library to fulfill its unique role in performing needed community functions which will be increasingly important in the light of continuing change in society." The study recognizes that there is a widespread lack of recognition of the existing strengths and of the potential for full development of the public library. There are gaps in what is known about the library as a public institution and about its performance. What research has been done already is little known, and has not been applied through demonstration. There is urgent need for training and retraining practitioners to enable them to develop goals for their individual libraries, and for encouraging them to orient their libraries to relate to change within society and perform effectively in the community.

The plan for action outlined in the *Strategy* calls for publication of a significant statement directing public attention to the American public library as a community agent capable of meeting present and future needs. There is need for extensive research to provide essential knowledge for effective performance. There is an ongoing need to disseminate the results of research, and to develop prototypes and demonstration projects. Lastly, an augmented educational effort both formal and informal is needed for public librarians, who have a need to know:

1. How to determine the library and information needs of each community.
2. How to develop plans—set goals—*with*, not *for*, users.
3. How to communicate what the library is doing so that it becomes truly visible.
4. How to manage libraries so effectively that they will receive needed support.
5. How to perform actively, not passively.
6. How to change and help others to change.

As public librarians began to understand and use the techniques of management more effectively, administrators and staff in an increasing number of local libraries

have developed statements of objectives or goals along with specific and sometimes elaborate guidelines or plans for their ultimate achievement.

The Public Library Association published in 1973 three working papers prepared by task forces in adult, young adult, and children's services. They incorporated the current philosophical concepts relating to goals and directions for library services developed to meet actual and potential user needs at the community level. Dallas and Tulsa public libraries were among a few that stimulated goal setting during the early 1970s through elaborate goal-setting documents produced by the combined efforts of their administrators, staff, boards, and community representatives. Another variation of the model was the development of a set of broad goals to which was added a set of guidelines aimed toward the accomplishment of the goals. To this framework, a set of specific, measurable objectives are added annually.

What is challenged through such a process is the status quo position not of administrators alone, but of board and staff members as well. Heightened awareness leads to questioning traditional concepts of the role of the library in the community and increases the likelihood of developing more relevant methods, activities, and programs in response to community needs. More and more public librarians are finding goal setting a critical basic step. It is not the document thus produced which is most important, but rather it is the participation in the process which results in an evolving ability to ask better questions, evaluate conditions, and set priorities. But there is difficulty, as Herbert Gans observes, with two conflicting conceptions of the public library: "the supplier-oriented, arguing that the library should achieve the educational and cultural goals of the librarian; and the user-oriented, arguing that the library should cater to the needs and demands of its users" (*4*).

Academically it can be argued that either type of orientation is valid, but most practitioners feel the alternate pressure from both orientations when setting priorities. Greater concern has been expressed over data needed to set priorities, which can come only through research. Unfortunately research is costly and may be beyond the reach of individual libraries that could benefit most from such specific information. Conant and Blassingame cite several areas in which research is needed. In broad terms they are:

> The library's market
> Function of libraries
> The political environment of the public library
> The objectives of the library
> The image of the library
> The education of librarians (*5*)

The kind of research most useful generally will require more than a local commitment. Effort on a national level will no doubt produce practical methods for evaluation of the efforts of local libraries. At the present time, at least, more and more libraries are engaged in self-examination.

There are compelling reasons for all public libraries to draw up a set of goals and objectives. Current financial restrictions should not limit libraries in their use

of such statements in priority setting. Priority setting is not easy, as Larry Bone pointed out:

> . . . because it means that some services will be minimal or will be given up completely. In spite of the stands taken by Denver, Detroit, Memphis, or any other library that has clearly stated priorities, one has to conclude that libraries feel more comfortable with generalities and continue to resist priority setting. One would hope that the present efforts at goals and objectives setting will result in substantive statements which will provide concrete direction for the future of the libraries.
>
> The 1970's may be the watershed for the large American public library. It appears to be a period of sober analysis and reflection. This is the hopeful sign in 1975. The fact that many libraries are questioning their purpose is a step which could bring about the changes needed for survival. Faced with changing commitments and changing needs for the people within those communities, the libraries have little choice; they will either respond to these changes or be relegated to an ineffectual role in urban society. The goals and objectives experience could be the dying gasp of the American public library movement. On the other hand, it could effect a veritable renaissance. The struggle in the present period to arrive at revised goals and objectives may help achieve the latter. But time is running out, and the effort will require courage, commitment, and dedication on the part of the librarians involved (*6*).

Organization and Management

LIBRARIES IN THE POLITICAL PROCESS

Setting objectives and priorities for library services and for establishing new directions for public libraries is both encouraged and resisted by leaders in the political arena. On one hand, executive authority (whether a governor, mayor, or a department administrator) usually recommends that librarians and trustees place heavy stress on objectives, priorities, cost benefits, and other ways to justify need and calculate costs. On the other hand, legislative and municipal councils may resist improvement in library services in order to meet the range of demands placed on government. If the tax dollar is short, library priorities may not rise high enough to be given recognition. There are, of course, many exceptions. It is the exception that properly places a high premium on the library's leadership ability to succeed in the rigorous environment of the political process. Basic philosophies in this regard, which are understood by most public librarians, have been indoctrinated by writers such as Oliver Garceau, whose study *The Public Library in the Political Process* stressed the relationship of the library to the power structure in the community and the strategies confronted by library leaders as they compete for a share of the public purse. Robert Salisbury took up this concern as he discussed the changes in cities in his paper "Trends in Urban Politics and Government." He observed:

> . . . politics involves the allocation of scarce resources and that, for any particular group or institution, the primary political problem is how to maximize its share

> of the scarce resources, notably money. There are those whose conception of "the political" is more normative, and who ask not, who gets what? when? and how? but, what is just and good? To this latter question, librarians must have answers, but unless they are effectively linked with power their answers remain academic in the most futile sense of the term. The compelling character of power thus has a way of making us all into behavioral political scientists (*7*).

There are few, if any, administrators and trustees who are not thrust into this position periodically, since public libraries operating on voted levies and appropriations of public funds are in the political arena continuously.

THE LIBRARY TRUSTEE

The library trustee and the political process cannot be separated. As a governing body, the library board is in fact part of the political process. As C'Ceal Coombs and Germaine Krettek correctly explain:

> Library trustees, representing the library as a special interest group, have long found it necessary to be involved in interplay with other political leadership and with the public in general for achieving the specific purposes and goals of libraries. In spite of this necessary and historic involvement, many people even yet do not think of libraries as connected with the political process. Many, indeed, feel that libraries should be nonpolitical. A much more realistic view is that libraries should be nonpartisan (*8*).

The political clout of libraries may be in direct proportion to the ability of librarians and trustees to be heard over the competition.

Library boards of trustees usually do not have the power to levy taxes but are required to rely on the action of some body of elected officials for operating funds. Trustees play an important role in determining the library budget. One of their greatest responsibilities is to secure funds for operating purposes even though the final decision of the amount appropriated is almost always made by another official body. A working relationship between trustees and the appropriating authority is an important one and most trustees function ably in this kind of situation.

As pointed out by Tom Childers and Beth Krevitt, "there are signs that libraries have enjoyed a constant level of income unrivaled by several other competing city services" (*9*). Those libraries which function well have as their governing bodies trustees who have the ability to maintain an effective dialogue with the power structures of their communities.

Important as financing library service is, trustees do have other duties and responsibilities which are usually set forth in state law.

Broadly stated, the library trustees are public officials; in some states they constitute political bodies who hold the public trust. They have legal responsibilities which are set forth in statutes and responsibilities closely linked to the practical aspect of daily operations. Alex Ladenson and Judge Story Birdseye set down the broad areas of powers and legal responsibilities in their chapter "The Trustee and the Law," in *The Library Trustee* (*10*). These are:

1. Operating Policy
   Trustees exercise the authority to make rules and regulations governing the

operation and management of the library. Among these are hours of service, and schedule of fines.

2. Property Management
   Boards of Trustees have exclusive control of all library property, real and personal. In many states, they hold the right to purchase property and build buildings. In a few states boards have the power of eminent domain to acquire property.
3. Financing
   State laws differ but usually library revenue comes from one of two sources: (1) from a special library tax on property usually expressed in millage and (2) from a lump sum in appropriation.
4. Personnel
   In most states, boards have almost complete control over the library staff. This authority is to hire and fire, set salaries and position classification. Where there is municipal civil service, the board's authority is curtailed.
5. Interlibrary Cooperation
   Usually it is only the board of trustees that can enter into contract for purposes of interlibrary cooperation.

There appears to be little distinction between the board's responsibilities under law and all else a body of trustees must do to meet its responsibility. Virginia Young presents a time-tested list of duties and responsibilities in *The Library Trustee* (*11*).

The first item on her list and the first duty of any board is to appoint a competent librarian. The board and librarian share common concerns but there is a substantial difference in the role each plays. If, for example, a board becomes overly involved in daily operations, it loses its effectiveness as the setter of policy. Librarians making unilateral decisions without board review in matters of policy are not acting responsibly and may find themselves in difficulty. While librarians act as individuals and carry out policy, trustees act as a body and have the benefit of varieties of opinion and a collective intelligence. As Young points out, these separate and distinct roles, when clearly understood and followed, minimize confusions and misunderstandings.

A penetrating study of the public library trustee was done by Ann Prentice with special emphasis on the trustees' image and on their performance in funding (*12*). In the past 35 years, library trustees have changed in a few notable ways. They tend to be younger and better educated today, but no more representative of the community at large. They serve fewer years, but the long-term trustee, contrary to popular opinion, does not exert less effort. With respect to funding, trustees see their roles as active. The majority of those surveyed viewed library financing as one of their major responsibilities.

While there are no up-to-date studies that can be considered a definitive evaluation of the public library trustee, the Prentice study and its particular focus does present some useful observations. Both the positive and negative attitudes cited are discernable on most boards of trustees. It must be remembered that trustees are volunteers. Their failing can be attributed in good measure to the librarian and the challenge he or she places before the board. (The extent of communication from the librarian to trustees on important library issues—in concerns not limited to financing, personnel policy, intellectual freedom, library development, and many

more—is also influential in making the best use of trustees.) Librarians and trustees usually race with the clock. Their highest priorities are usually the problems which demand immediate solution regardless of the areas of concern.

ADMINISTRATION

In recent years the public librarian, particularly the position of chief librarian, has been the object of considerable study and criticism. Whether it is the board or staff who seem unwilling to change, it is the chief administrator whose professional responsibility it is to effect adjustments in library service to meet the social changes in the community. It is his responsibility to rethink the management techniques necessary to make the library a more efficient organization. It is the librarian who must recognize that democratically oriented institutions cannot be run effectively by a despot no matter how enlightened he or she may be. Some recent writers who seem to lack administrative experience are quick to ascribe the slow pace of change in the public library to a variety of attributes held by the chief librarian. It is untrue, of course, that the chief administrator of any organization instinctively knows how to make all of the right decisions. The majority of the current crop of public library administrators, having been through a variety of managerial experiences, have a reasonably good grasp of the magnitude of their responsibilities and exhibit a fair amount of fortitude and understanding in changing with the times.

There is considerable accuracy in this statement by Kenneth Shaffer:

> The library director's responsibilities in 1975 remain about the same as in the long past—but with a difference! The paradoxical image of him as an autocrat and/or figurehead persists, but the social and intellectual revolution of the past decade has produced radical changes in the complexities of pressure for change—all too frequently expressed by threat and violence—which may erupt not only in major areas of management, but also in the nitty-gritty. Library management, if it is realistic, can expect confrontation, newspaper headlines, legal proceedings, denunciation, withholding of funds by government agencies, disruption of library services by staff or outsiders, or worse. Alert management will sense trouble ahead, and frequently will be able to contain it, but in a library it inevitably finds itself on the edge of the abyss with no forewarning—a situation which calls for immediate assessment of the issues involved and effective diplomacy to resolve the crisis for the common good (*13*).

Shaffer deals with problem areas which have altered the manager's role "and called for new techniques and attitudes in dealing with the instabilities of a changing world." He discusses these areas:

1. Participatory management
   Although the movement has cooled, the importance of taking the staff into its confidence, seeking staff advice and maintaining two-way communication remains.
2. Collective bargaining and unionization
   Most administrators realize that the matter is in the hands of staff and maintain a position that makes their role of negotiator more effective.

3. Regulation by government
   The range and complexity of legislation and regulation by government on all levels, federal, state and local, are bewildering and sometimes conflicting.
4. Intellectual freedom
   Demands made by pressure groups divert the management function from its real purpose in an effort to contain the conflagration by rational discussion.
5. Evaluation by quantification
   Even though quantifying does not prove or improve quality.
6. Performance budgeting
   For the present it has become fashionable in some municipalities and is imposed on libraries even though it does not measure quality of service.

The human requirements for successful management in the environment in which these instabilities are rampant, Shaffer believes, seem beyond expectation. Nevertheless, he cites with common sense the attributes public library administrators must exhibit:

> The administrator must listen as well as speak up; must arbitrate and be prepared to compromise as well as act. He or she must be calm and infinitely patient, but firm in his or her convictions. The administrator must forego the spotlight or prestige to share achievements readily and widely. And last, he or she must possess an elephantine strength, energy, and patience, not only in dealing with the crises and problems of the library, but in providing the leadership day by day that will bring it to greater and greater achievement and excellence (*14*).

While management skills may have been acquired more often from practice than training, the present-day library administrator needs to develop techniques and methods not even touched upon in his professional education. There are abundant opportunities for reorientation through numerous institutes, workshops, conferences, and academic programs. Growing numbers of administrators and middle managers have participated in such programs. They have also included more management literature in their personal reading lists.

Because of the abundance of library literature directed to the attention of library managers, they cannot help becoming more aware of their own shortcomings to meet changes affecting internal operations of libraries while modifying services for the community.

PERSONNEL MANAGEMENT

It has been traditional to think of the library as having three major assets: staff, materials collections, and physical facilities. Currently greater pressure for change has been exerted from within the profession for improvements in personnel administration. To most administrators, Kathleen Stebbins's book *Personnel Administration in Libraries* has provided guidance for many years. It would be of even greater help if this area of administrative concern were to remain static. Fortunately the body of literature dealing with new directions continues to grow along with increasing opportunities for continuing education of personnel managers. Staff development is one of the critical areas in which library administrators are becoming considerably more sensitive. Staff members, too, are demanding more

opportunities to develop skills not only to do their jobs more effectively but to assume higher levels of responsibility.

An increasing number of administrators are aware that part of the job of running the library is staff development. In most libraries a few hours of the work week are set aside for this purpose. A major difficulty, perhaps universal, is assigning priorities to those topics on which there is staff agreement as to their relative importance. The range of topics, from the most important to the least, on which a staff agrees to expend effort is still too great to be covered before a new set of priorities needs to be considered because of accelerated changes inside the library and out in the community. It is obvious that the administrator must encourage staff development programming. Individual staff members, too, must commit themselves to the program if it is going to produce any meaningful results. Put another way, by Howard Shout:

> Staff development depends upon two conditions. The first is group relationships that contribute to productivity and achievement of organizational goals. The second is climate, the work situation that helps individuals to grow, create, produce, and to give themselves enthusiastically to the work for which they are responsible (*15*).

One of the meaningful results of staff development is to get away from the cliches surrounding management by objectives, to action. At this point most librarians may agree that current staff development efforts have narrowed the gap. The majority of the larger public libraries today operate under some form of management by objectives. They also apply many of the principles and techniques of scientific management, if only to improve the efficiency of clerical routines. Whatever the method or techniques adopted by the chief administrator, there is growing awareness of the importance of staff participation at all levels in the management process.

FINANCIAL MANAGEMENT

One of the most important responsibilities that a public librarian exercises is supervision of expenditures of public money. He is responsible for more than disbursement. The operating budget determination ultimately rests with the trustees, but it is the librarian who informs the board concerning program objectives reflected in the budget. In this regard the librarian's role is not passive. Neither the librarian nor the board may be free, however, to adopt a budgeting system. The most common types are either the line item or object of expenditure budgets. The choice of budgeting procedure is usually beyond the control of the board once it has been adopted by the city or controlling body to which the trustees are answerable. Line item budgets in most jurisdictions have been in use for a long time. Object of expenditure budgeting is perhaps more popular because, while being control-oriented, it is relatively easy to prepare and understand, and accountability can be exercised. The flaw in this system is that, while it provides for accountability for fiscal behavior, it does not provide for accountability for performance. While performance budgeting appears to have advantages, performance data are sometimes added to

object of expenditure classifications. It is perhaps more accurate to say that the budgeting procedures most libraries follow are a combination of more than one system.

In recent years the Planning–Programming–Budgeting System (PPBS) has received considerable attention. Its chief characteristics are (*a*) identification of the organization's objectives; (*b*) explicit statement, systematic identification of alternate ways of carrying out the objectives; (*c*) estimation of the total cost implications of each alternative; and (*d*) estimation of the expected results of each alternative. Where PPBS has been tried, it was quickly learned that the administration and board cannot prepare the budget without open discussion and considerable staff involvement. With this participation has come the hard work shared by staff in the preparation of objectives, criteria, programs and alternatives, activities and alternatives, and methods for evaluation feedback. The techniques of PPBS are probably used by more libraries than have formally adopted the system. In the past 10 years PPBS has become well known to public librarians who attend conferences, workshops, and institutes. Even if the impact tends to be academic, the system has forced library administrators and staffs to think of output rather than input when evaluating programs, activities, performance, or budgets.

At the same time that methods of managing library budgets have received considerable attention, a greater concern has been the decline in public library income. Even in those areas where tax support has not declined, inflation has eroded the library's ability to keep pace with the demands for new programs and upgrading established ones. The pinch has been more painful for the large city libraries. Most recent writings cite the fiscal problems of cities as the most obvious cause of short funding of city library systems. "Trends in metropolitan fiscal problems," noted by William Hellmuth a few years ago and becoming even more pronounced today, "are rising expenditures, increasing pressure on revenue sources to keep up with the needed spending, and the imbalances between revenue sources and need in jurisdictions of the same metropolitan area. The economic interdependence of the jurisdictions is increasing, but the increase is not always reflected in political cooperation and consultation" (*16*).

Hellmuth said further that:

> public libraries in metropolitan areas face rising expenditures, expanding pressures for more revenues, diversity of service levels between different jurisdictions within the metropolitan area, and imbalance between needs and resources. The library system in the central city will continue to provide the most important library services to the entire metropolitan area. Reliance on this library system may well increase, regardless of any decline in population of the central city (*17*).

A current case in point may be cited with respect to the situation recently faced by Cleveland Public Library. The director, Ervin Gaines, commenting on his problems, said:

> As cities have declined in their economic potency owing to the loss of income to suburban rise, the flow of wealth into the largest libraries has diminished so far as to endanger their vitality. At the same time, the social need for those libraries either remains constant or tends to grow. The flight of wealth from the

> cities has not lessened dependence upon great libraries. Even as the newer and more affluent suburbs have been able to establish libraries to satisfy their current appetites for books, they have not developed the powerful aggregates of research collections because they have perceived that the central city libraries can still be made available on a wider geographical basis, and they have also perceived, quite wisely, that it could be economic folly to try to replicate established central city libraries (*18*).

While Gaines spoke from firsthand knowledge about the situation in Cleveland, he echoed the nearly universal problem most central city libraries in Ohio face. Elsewhere in the nation similar financial problems for large city libraries exist. Whether the cause is the same in other states as it is in Ohio, the effect on available tax support is as bad, if not worse.

Looking beyond the city for solutions, several plans have been devised and some legislated. In some areas state aid to public libraries, the result of a state library development plan, has been worked out. Ralph Blasingame set down a number of purposes and some cautions with respect to state aid. One of the purposes is:

> to permit established libraries to continue to exist (and develop) in the established patterns, despite erosion of the economic bases upon which they have traditionally depended as a consequence of relatively recent trends in urbanization. This purpose has seldom been articulated in state plans, but it has so commonly been the actual result of state-aid formulas that one must conclude that it was a real purpose all along. At any rate, this purpose has recently been articulated by local government officials and probably will be pressed by them as the older cities and towns continue to decline (*19*).

In most states, unless the state plan and state aid formula are seen as imperative, other problems, such as pollution of the environment, will be given higher priorities, when they reach crisis proportions.

Aid from the federal government, too, has been sought. After nearly 20 years of the existence of the Library Services and Construction Act during which funds have been pumped through state libraries to local libraries, little, if any, of it has been used to operate existing services. The most worthy special projects, however, may have altered existing services and demonstrated need for new services, but federal funds have not measurably relieved the local financial bind. Revenue sharing appeared and at first it seemed in some small way to provide badly needed general operating funds. The evidence thus far suggests that revenue sharing has not relieved the financial crisis of central cities or their libraries. In some cities, legislation has plowed nearly all revenue-sharing money into capital improvement accounts in the expectation that a cutoff of revenue sharing will find the city's financial condition in worse shape. Figures on the use of revenue-sharing funds used by libraries are misleading. What cities have reported and what libraries can show as additional revenue from this source do not coincide. The suspicion is that revenue-sharing funds have been used in some cities to make up the library's operating budget entirely.

As the competition for public funds grows keener, and inflation erodes what

funds are appropriated, public libraries are forced to develop better plans and set priorities more rigorously. Among the options open to libraries the most promising directions seem to be toward greater interlibrary cooperation, establishment of more library systems, development of metropolitan systems of libraries of all types, and ultimately a national network as suggested in the National Commission on Libraries and Information Science goals for action, *Toward a National Program for Library and Information Services.* In time, support may come from three levels of government—local, state, and federal. In one of the commission's studies, *Alternatives for Financing the Public Library,* there is a recommendation that balanced intergovernmental funding is the most viable option. It is envisioned that a 10-year, staged approach could achieve an improved balance of federal funding of 20% of the total, state funding of 50%, and local of 30% (*20*).

The task of achieving this goal is sizable to say the least. Yet, at present it must be recognized that, as the study points out, "distribution of costs among the levels and jurisdictions of government is inequitable and is a prime deterrent to the progressive development of a public library system responsive to the informational–educational–cultural needs of a modern society" (*21*).

Interlibrary Cooperation

LIBRARY SYSTEMS

Almost from the beginning, the public library has been viewed as an agency that could not function effectively as an isolated, totally independent unit. Librarians and trustees have been faced continually with the problem of providing adequate resources for metropolitan, suburban, and rural populations to meet both change and increasing demands. Comprehensive plans have developed over the years to reorganize library patterns into larger units of services or library systems.

> One avenue for metropolitan areas might have been consolidation—the creation of a singly governed metropolitan library system with the city library as the core. But great size provokes great problems, as illustrated by the big city school systems that have struggled, during the third quarter of the twentieth century, with the problem of equality in education for all sections of a city and the desire for more neighborhood participation in the decision-making process. Decentralization of public institutions seemed more suitable for the resolution of citizens' dissatisfactions. Another obstacle to the consolidation of libraries in metropolitan areas was the determination of suburbanites to remain politically, although not economically, independent of the central city and of other suburbs. The small libraries in metropolitan areas were faced with the necessity to maintain autonomy and to create a climate for cooperation that would open up resources beyond their independent means.
>
> The solution to the public library problem in rural areas, where libraries were serving widely scattered population centers, was even more difficult. County libraries were established but failed to raise significantly the level of local library service in most cases, especially in sparsely populated counties. Nor was the county line

found to be, necessarily, a logical boundary for library service areas. Multi-county library units were attempted but were limited in achieving their major goals by the complexities of the political process (*22*).

A variety of schemes have developed in attempts to improve the capability of the small independent library. Efforts to find workable solutions have resulted in the creation of larger units which now emerge as five predominant patterns as determined in the landmark survey conducted by Nelson Associates. They are: the county library, the multicounty or regional library, the special district library, the state supplementary system, and the statewide, state-governed system (*23*). Each of these larger units or systems may be governed by one or more structural patterns: the consolidation of units, the contractual consolidation, federation of library units, cooperatives of individual libraries, and government by the state library.

The most common of the patterns cited is the county library with its basic aim of providing service to all residents, urban and rural, within a single county. Historically, one of the characteristic weaknesses is the unwillingness of established, well-supported municipal libraries to join the county unit. In Ohio there are examples of this weakness, specifically in Cuyahoga County. But there is an example of the strength of county libraries exhibited in the creation of one consolidated unit in Lucas County. In general, the county library which appears to be a simple form of larger unit may develop complexities through contractual arrangements for varieties of services within or outside its own primary service area or boundaries.

One or more counties, realizing inadequacies of independence, have formed multicounty or regional systems with neighboring counties. These systems are usually contractual agreements as in the case of one of the earliest, formed in California between Sierra County and Plumas County. While they may be governed and financed in several different ways, multicounty systems commonly result from contractual arrangements, but the consolidation is usually not as complete as in the county library unit. Contractual arrangements may bring about operational consolidation on one hand, or loose federation on the other. It is interesting to note that in Ohio, where the law has permitted the consolidation of two or more county libraries into a regional system for many years, none has been formed. However, multicounty systems, called Area Library Services Organizations, have been formed through contractual arrangements into consolidated operations with some characteristics of federation remaining.

The library district formed from counties and parts of counties to achieve a structural consolidation consists usually of areas weak in library resources and characterized by political fragmentation. Often uneven incorporated areas will unite to form a district with the prospect of contracting for services with other independent libraries. Sometimes unincorporated areas will unite with an incorporated government unit to form a legal entity to raise revenue for provisional library services.

State supplementary systems have been formed to achieve specialized objectives of serving both libraries, such as centralized cataloging, and of serving clients not served by a local library. Tennessee organized state-supported regional centers to

serve as resource libraries, and to provide bookmobile service and professional assistance to libraries. These centers are administered under contract with the State Library by a board appointed from counties within the region. Another type of supplementary system, in New York, is the Watertown Regional Library Center. The primary purpose of this system is to provide service to libraries in the region and services to patrons under contract with local authorities.

The most distinct statewide, state-governed system is in Hawaii, where all services are administered by the state librarian. New Mexico operates a statewide service to people without established local service units.

From all of these patterns of system development a definition has come to the fore which states that "a public library system is a complex of public libraries in which the resources and services of this complex are made available either to libraries belonging to the system or directly to the patrons in the system's service area" (*24*).

Nelson Associates cite the chief accomplishments of systems as follows (*25*):

1. Access
   Provided access to library service to sizable populations for the first time.
2. Collections
   Substantial increase in the numbers of volumes per capita has been documented.
3. Circulation
   Circulation per capita, it appears, increased at a faster rate in systems than in libraries generally.
4. Services
   Chief benefits to members of systems were large and better materials collections, improved access to reference and other materials and improved reference services.
5. Finance
   System affiliates in general received better financial support as a result of membership in the system. Improvement of services, especially during periods of economic expansion, can be expected to generate better public support and funding.
6. Professionalism
   Despite staff training problems, there has been substantial improvement in library service because of level of professionalism from the top down since the time of the system formation. Recruitment of better trained personnel is an expected result of better financing.

Gregory and Stoffel summarize the advantages of systems development:

> The concept of independent public libraries joining together in the planned partnership of a cooperative system offers the opportunity for each library to reach for excellence and to relate its services to the needs of people in an era of rapid change and technological innovation. The cooperative system is a flexible design and adaptable to rural or populous areas. By the combining of talents and resources it provides the means to:
>
> 1. Create a greater depth and range of resources
> 2. Open avenues for the use of the resources
> 3. Equalize library service

4. Raise the level of personnel expertise
5. Offer the newer types of communication media
6. Take advantage of the new technology
7. Experiment and innovate

> The cooperative public library system is its member libraries acting in concert through the system headquarters to attain desired objectives. . . . The system offers the opportunity and flexibility to enable the library to change from an institution unable to meet the needs of the present to one equal to meeting the potential needs of the future (*26*).

With the coalition of complex systems in such widely separated locations as New York, Virginia, Illinois, Tennessee, and Washington, a considerable body of evidence has been amassed to demonstrate the many advantages system membership brings. It can also be shown that while many major problems have been solved in the process, there are many problems remaining which system development or membership alone cannot solve. The problems noted by Nelson Associates are categorized as follows (*27*):

1. Structure
   A combination of weak libraries does not create a strong system. There may be a problem of distance or small population base, and the nonaffiliation of a relatively strong library can affect the quality of system service, especially in a sparsely settled area.
2. Services
   In general, the problem is one of lack of linkage with other systems and resource libraries. The evidence in places like Illinois seems to indicate that this problem can be readily overcome at the state level among public library systems. Linking together joint efforts among types of libraries (school, academic, and special) is a problem of greater magnitude.
3. Role of the state
   Well-financed, strong state libraries have stimulated rapid development of systems. Where state support is weak either financially or in leadership from the state library, especially in planning support, progress has been slow.
4. Finances
   A major problem can be the inequity of local funding among the members of a system even in those states offering strong financial incentives. In some states, member libraries may have great difficulty raising the supplementary support needed.

In this regard, Gregory and Stoffel point out:

> Cooperation is not a philanthropic donation of resources and services from the stronger library to the weaker system member; it is a genuine sharing of services, resources, and responsibilities by library members. The system has a responsibility to stimulate the underachieving member library to contribute, by greater local effort, to the overall strength of the system (*28*).

INTERLIBRARY COOPERATIVE PROJECTS

In recent years there has developed a greater spirit of cooperation among libraries of all types, public, school, and academic. Title III of the Library Services and

Construction Act stimulated all states to formulate plans to bring together libraries in cooperative arrangements to provide better library services for the clienteles of each type of library. Access to total library resources has come to mean the resources of public, school, and academic libraries, especially all tax-supported resources available to the people in the region or the state.

Numerous projects have developed to bring types of libraries together to achieve specific objectives through employing a variety of cooperative arrangements. Many of these have been directed toward methods of sharing resources systematically and expeditiously while strengthening the resources to be shared. As an indication of the scope of interlibrary cooperation practiced in recent years, the following were cited as examples by Flint Purdy: union catalogs and union lists, cooperative development of resources, sharing resources in terms of use, communication, centralized processing, cooperatively sponsored planning and surveys, cooperative storage of materials, cooperative computer centers (*29*). It is abundantly clear from Purdy's examination of these categories of interlibrary cooperation that most have become standard practices in some areas more than others and that in the past 5 years more categories have been added.

In metropolitan areas, public, academic, and special libraries have developed the habit of sharing resources. Pittsburgh developed a method of resource sharing in which the public library has been deeply involved for 25 years. The details of how to accelerate the process were the subject of a well-recorded conference in Pittsburgh in 1973 (*30*). Broadly stated, it dealt with the rationale, the mechanics, when to proceed, and how to proceed.

Another type of interlibrary cooperation in which public libraries are involved is METRO, the New York Metropolitan Reference and Research Library Agency. It is not a contractual arrangement but rather a nonprofit organization operated for educational purposes, chartered in 1964 by the Board of Regents of the University of the State of New York on behalf of the State Education Department. Its purpose is to "improve reference and research library service in the New York Metropolitan area for promoting and facilitating utilization of existing resources and by development of additional resources." Cory stated that METRO:

> offers promise that new generations of library organization and development can provide total access to augmented information resources without destroying or duplicating the valuable services of existing independent agencies and institutions which, on the contrary, will be individually strengthened at the same time that they join in a mutually reinforcing declaration of interdependence (*31*).

One of the most successful cooperative projects has been the Ohio College Library Center (OCLC). It started in 1967 as a program for academic libraries of Ohio consisting of five components: (*a*) shared cataloging system, (*b*) bibliographic information retrieval, (*c*) circulation control, (*d*) serials control, and (*e*) a technical processing system. It was the shared cataloging component that was first implemented. It is this particularly useful service of the center that is now subscribed to by 1,250 public, academic, school, and special libraries in 45 states, the District of Columbia, Canada, and Puerto Rico. The on-line shared cataloging

system, to put it briefly, is based on a central machine-readable data base which speeds cataloging and reduces cataloging costs in member libraries. It takes advantage of cataloging performed by each member library for the benefit of all, thus minimizing duplicate efforts. Effort as well as time is saved by the employment of labor-saving machinery. The other major functions of shared cataloging, in addition to making available cataloging from a data base, are the production of catalog cards, the use or performance of the data base as a union catalog, and facilitation of interlibrary loan. It is expected that the other goals of OCLC will be accomplished in a reasonably short time. Beyond these goals, the future of OCLC and its usefulness to libraries and networks of libraries and to users of libraries of all types taxes the imagination. Interlibrary cooperation in general has considerable potential for growth and development.

Thus far the kinds of projects and operations that have developed out of interlibrary cooperation efforts have had impacts on delivery of library services and on the varieties of services offered at the community level.

From federations of libraries, to reference networks, TWX-facilitated interlibrary loan, computerized library circulation, serial systems, and acquisition systems, the contemporary patterns of service have continued to change.

Patterns of Service

The essential services and functions of the public library a decade ago were seen as:

1. Logical organization of materials for convenient use.
2. Lending of materials so they might be used in the location and time suited to each individual.
3. Provision of information service designed to locate facts as needed.
4. Guidance to individuals in the use of educational and recreational material.
5. Assistance to civic, cultural, and educational organizations, in locating and using materials for program planning projects and the education of members.
6. Stimulation of use and interpretation of materials through publicity, display, reading lists, story hours, book talks, book and film discussions, and other appropriate means either in the library or in community organizations.

There were service standards as adopted by the American Library Association in 1956 and which remained pretty much intact for a decade. "The same functions of the modern public library essential to America in the sixties," wrote Lucile Nix, "clearly involve action-surveying, planning, providing, organizing, assisting, and stimulating to the end that the reading and library needs and interests of all citizens may be met" (*32*). Detailed in this same source are the general purposes of library services to children, young adults and adults, special groups, senior citizens, hospitals and institutions, schools and students, government officials and employees, and services provided through the use of audiovisuals. Richard Sealock detailed methods of extending services through branches and bookmobiles (*33*). From the contents described briefly, library services labeled in more recent times as traditional

formed the basis for more expanded development to relate to rapidly changing communities and concepts of service.

DEVELOPMENT OF NEW SERVICES

In reevaluating library services, the Public Library Association's *A Strategy for Change* cites one aspect of library services that must be viewed realistically:

> Those who not only recite "service to all" but attempt to put the concept in practice recognize the widening gap between concept and reality. Publics, heretofore relatively unserved and unresponsive to traditional services, include: the disadvantaged, ethnic minorities, the illiterate, the semi-literate, residents of institutions and the aging (*34*).

The public library in the past decade has been under considerable pressure, from both inside the profession and in the community, to examine its objectives and modify programs and services, to become more cognizant of the changing needs of people, and, of paramount importance, to convert a middle-class institution to a more relevant educational agency serving people of all ages, all economic levels, and all social environments. The public library has always been an important institution in the educational complex serving the community and has long served as a vehicle for social and economic mobility as well as intellectual development by stimulating people to educate themselves continuously. Doing this job well, the public library was being carried away from the underprivileged or disadvantaged group that became in many cities a large percentage of the population. The library tended to concentrate on those who came to the library and less on individuals and groups with special needs selected by the library for special attention.

In 1969 studies conducted for the National Advisory Commission on Libraries provided substantial evidence that librarians were not satisfied with their library's response to the needs of the disadvantaged. "The greatest success and evidently the greatest effort, among those who felt they had made any effort worthy of the mention, was with children, usually the pre-school children, of the poor" (*35*). The study further suggested that " 'front-line' librarians appear considerably more willing to initiate new ventures toward the goal of serving, and even creating user needs than the experts give them credit for" (*36*).

The major concern of those responsible for library policy making, particularly in urban areas, is deciding to what extent programs and approaches aimed at the disadvantaged should depart from traditional methods.

There is a continuing concern to serve those who have information needs and have the motivation to use the library and the necessary skills to do so. At the same time, there are sizable amorphous groups generally labeled disadvantaged who have identifiable information needs. These groups may not be easily identified, located, or understood, but they are there. Thomas Childers deals with the meaning of the word "disadvantaged" by pointing out the groups that:

. . . by virtue of their social, economic, cultural, educational, physical, and ethnic condition could be expected to suffer more deprivations than the rest of society:

The poor
The elderly
The imprisoned
The deaf or blind
The undereducated
The unemployed or those employed at a low level (unskilled and migrant workers, for example)
The racially/ethnically oppressed (American Indian, Eskimo, Black, Puerto Rican, Mexican-American) (*37*)

Webster's Third New International Dictionary defines disadvantaged as "lacking in the basic resource or conditions (as standard housing, medical and educational facilities, civil rights) believed to be necessary for an equal position in society." Underprivileged is defined as "deprived through social or economic oppression of some of the fundamental rights theoretically belonging to all members of civilized society." Deprived "implies a taking away of what one has, owns, or has a right to." As Helen Lyman observed in her comparison of these definitions: "underprivileged and deprived appear to be more accurate than disadvantaged. . . . These terms give a different emphasis and a broader dimension to the concept of what it means to be disadvantaged because they encompass the concept of individual rights" (*38*). She further observed that all three of these terms themselves stir doubts and hostilities because "their use seems to be patronizing and presumptuous." It is easy to fail to recognize the advantages or assets certain groups have.

Along with other educational institutions, the library faces many challenges of making its services and programs more widely accessible to these persons who do not fit the traditional patron mold.

OUTREACH

Redefining roles and restructuring services in relevant ways for special clienteles has been in recent years the subject of numerous books, papers, institutes, workshops, and research studies. As evaluative reports of community projects would seem to indicate, efforts to change traditional patterns of service have had heavy impact on an increasingly more socially responsible profession.

Public librarians who have developed relevant programs instinctively have understood that "the single most significant factor in serving the disadvantaged person and groups," as Helen Lyman observed, "may be the respect and understanding between library user and potential user, the individual and community, and library personnel. It is imperative to know and appreciate the life styles, cultural beliefs and values, motivations, desires, interests and aspirations of various groups" (*39*).

Reaching out to nonusers of the library and providing services to meet their needs may be substantially different from reaching out to the disadvantaged nonreader. The reasons why people do not use libraries are complex, but seem in a traditional

context to center on a matter of attitude. As Charles Evans points out in his study of attitudes and users:

> The primary implication of this study's findings is that attitudes toward the library may have an important influence on public library use. Therefore, it may be possible to increase library use by improving public attitudes toward the library. Conversely, it may be impossible to increase library use significantly by any means unless public attitudes become more favorable to the library. Closely related to this is the possibility that library use may be increased by increasing public awareness of the library, by making people better informed about the library, and by creating in their minds a more accurate concept of the library's utility. There are also implications in these findings that library use may be increased by stimulating public interest in reading and in continuing education, whether this reading or educational activity draws directly upon library services or not. And, since those who use other libraries tend to use the public library as well, it may be possible to build public library use by encouraging use of school, academic or special libraries (*40*).

In an inner-city ghetto the situation is different. Claire Lipsman pointed out in 1972 that:

> . . . there is an urgency in the current scene which has not been emphasized in previous studies, and which arises from the serious loss of power and prestige by libraries in low-income areas. In the communities in which libraries would most wish to penetrate, where the general level of education and literacy is low, the library service effort is least successful. Here the predominant library users are a small group of grade school-age children, using the library primarily for school-related purposes and as a place to meet their friends. The presence of adult users, who constitute roughly half of the libraries' clientele in middle-class neighborhoods, decreases, in some black hard-core poverty areas to less than 10 percent.
>
> The failure of ghetto libraries to attract large numbers and a higher proportion of adults cannot be attributed to any single factor or set of factors. It can be speculated that in the very poorest areas, the damage to human potential resulting from deprivation, callousness, and neglect is so severe that the public library cannot be perceived as relevant. In this case, no amount of resources reasonably within the command of a public library could be expected to reverse this impact. Nonetheless, the major challenges to the public library which emerge from the user/nonuser survey are clearly these: to better meet the needs of existing youthful clientele and to establish the library as relevant and useful to nonusers, particularly adults in black poverty areas (*41*).

Changes required to meet the challenges of providing relevant library service to the nonreader, nonuser, or what Thomas Childers refers to as the "information poor" would seem to require considerable innovation:

> The responsibility of the library is extended from that of supplying information to that of actively seeking to modify individual behavior and attitudes.
>
> The unanswered and difficult questions about library service seem to focus on this area. Can libraries persuade disadvantaged persons to use their facilities by concentrating primarily on attractive and relevant materials and on accessibility? Is active outreach and involvement also necessary? Is it necessary for all groups? Where is it necessary? How extensive should it be? How successful is it likely to be? How costly will it be? (*42*).

In such publications as "Library Programs and Services to the Disadvantaged" (*Library Trends,* October 1971) there is considerable information on specific programs designed to reach the disadvantaged and some evidence as to what works well and what has failed to reach the target group and why. A significant effort was made to illuminate the problems of library service in urban low-income areas by examining a sample of program approaches, target groups, and scope of effort in a study requested by the U.S. Office of Education and conducted by Claire Lipsman. She did not attempt to evaluate but to provide a pilot exploration of alternative approaches for reaching desired goals. Her report, *The Disadvantaged and Library Effectiveness*

> . . . is concerned with the social utility of libraries and with the factors that appear to be required for effective programs. To achieve the study objectives, library programs and practices in low-income neighborhoods were examined in a number of cities. In each of fifteen cities data were collected through interviews and observations in four subject areas: (1) the needs and interests of the community residents, (2) library services in relation to other available community resources, (3) the nature and scope of the neighborhood library program and its relation to the rest of the library system, and (4) available measures of the impact or effectiveness of the program (*43*).

Among her conclusions there are a number of statements that have considerable impact on what libraries are currently doing. The following is an example:

> For the most part libraries have not yet begun to explore the limits of feasibility and relevance in response to user needs and requirements. Most of the programs that were visited embody very familiar activities and approaches: ethnically oriented book collections, story hours, bookmobiles, movies, etc. However, the analysis of program activities suggests that in the few programs where these standard or conventional activities have been successful in attracting adults or in increasing the number of users, they have been approached by libraries in a conscious and competitive effort to market a revitalized product.
>
> The concepts of program effectiveness or program success or failure were developed in terms of a systems approach to the program cycle of input, implementation, and output. Strategic points within the cycle were identified at which readings could be taken as to the effectiveness of the program. For programs to be optimally effective, the following criteria were suggested as the standard for evaluation:
>
> 1. Program objectives should be related to individual and community needs, i.e., to user requirements
> 2. Program planning and implementation should carry forward program objectives
> 3. Program output should reflect the achievement of program objectives and hence the satisfaction of user needs and requirements
> 4. Program inputs (costs) should be appropriate to the level of program output (*44*).

Of the projects currently in operation, a great many are funded under Title I of the Library Services and Construction Act through which several millions of dollars have made it possible for public libraries all over the country to initiate changes in service to the disadvantaged as well as to stimulate changes in services

totally. Kathleen Molz characterized these projects as affording "informational and educational services to the poor, [which] served as harbingers of the shift in public libraries from a supplier-based orientation to a user-based one" (*45*).

INFORMATION AND REFERRAL

In the early 1970s the neighborhood information center (NIC) was the "hot topic." It was, and remains, a service of interest to adult services and reference librarians and administrators. Based on the assumption that the public library is an information center and that librarianship is essentially an information profession, the question is "Should the public library be a supportative, coordinative agency or the initiator for information centers?" If the library determines that it is the initiator then we need to know considerably more about the meaning of referral and advocacy in relation to library services. The U.S. Office of Education funded "A Proposal to Research and Design Criteria for the Implementation and Establishment of Neighborhood Information Centers in Five Public Libraries in Five Cities: Atlanta, Cleveland, Detroit, Houston, and Queens Borough." This project had substantial impact on the library's attempt to establish such a center.

The most difficult step is to decide on what the library can do. An important second step is an examination of the kinds of community information services which already exist in the library and among the agencies in the community. The year the five-cities NIC project started, the United Way published *National Standards for Information and Referral Services.*

A third matter to consider is the different ways community information can be provided. Providing information alone may not require a great change in methods, but when referral is added the task taken on by the library may be considerably greater. Much depends on the community itself. Each library must make the decision from within how best it may serve as a total community information center after a thorough analysis of resources in the total community.

"The Houston Public Library," for example, "throughout the NIC program, began a campaign for I&R cooperation, a coalition of Information and Referral agencies. One of the main objectives of NIC has been formation of the coalition. Why should sixty referral agencies seek out gaps in service, up-date files, and keep all this information to themselves?" (*46*). If the job is to be done correctly in establishing a neighborhood or community information center, motivation and initiative seem to precede a substantial budget. If the library's goal is to change its focus of service, a commitment of operating resources, staff, and materials is required from the beginning.

The experiences of libraries operating information and referral centers, such as Detroit Public Library with its TIP (The Information Place) program, support the view that community awareness of one I&R, well used and well publicized, stimulates public interest in most of the other services offered by the library.

While adjusting library service to meet specific needs of disadvantaged groups in the urban and rural setting, other changes are taking place that force the public librarian to reevaluate services to the middle-class library user, the student, and the

adult reader with more leisure time and increased affluence. The explosion of knowledge in the past two decades, the enormous increase in publishing, and the development of media other than print have created demands for the services of the library. It would be a safe generalization to suggest that the library which can be innovative enough to deal effectively with the problems of library service to the disadvantaged probably would be equally competent to deal with the growing library needs of library patrons on the other end of the scale where the need for innovation is also required. This is not to suggest that the information needs of the disadvantaged are like those of the general population but rather that improvement in managing and dispensing information would benefit both groups. For people to survive in our society they need essentially the same kind of information, but the disadvantaged probably need more basic information. Coping skills are relative and so are the informational requirements to improve them.

During periods of economic expansion it may be more likely that libraries could expand equally in all directions to meet needs of all citizens, but, during the recent period of economic slowdown, stiffer priorities have had to be set. Only a few libraries seem to have developed clearly identified priorities. Denver has assigned a priority to the independent learner program. Memphis has a commitment to information services and informal adult education. Detroit has identified information and referral service as its priority. In these libraries, and in many others, setting priorities more rigorously is a commitment of operating resources, imposed from board level downward and throughout the institution.

These changing patterns of service, rather than reinventing the role of the public library, strengthen and modify existing services while developing new ones. For example, to use Margaret Monroe's words:

> Adult services in its entirety builds programs of service to users around four major functions: (1) information and bibliographic services, (2) guidance and advisory services, (3) orientation and instruction in library resources and their use, and (4) stimulation of the library's public (user and nonuser) to intensified use of the library's resources and services (*47*).

These functions are consistent with the priorities set in Detroit, Memphis, and Denver, even though the term "adult services" has a traditional sound about it. Changes in methods and techniques in recent years have tended to improve service concepts in a number of areas. Service to the aged will serve as an example.

After the establishment of the Adult Education Department of the Cleveland Public Library in 1941, library services for the aged proliferated across the country until about 1961. Beyond this date emphasis was placed on service to the urban disadvantaged and to ethnic minorities:

> Library service to the aging has not so much declined as it has been submerged in concern with the pressing needs of groups in which the elderly may be found in large numbers—many of them the very people whom the library has not previously been able to find and identify (*48*).

With increased awareness, service to older persons becomes more firmly a part of the library's total user-based program. There appears to be an intensified effort

to locate and deliver services directly to clients who are likely to be environmentally rather than geographically removed from usual library facilities and services.

"One generally recognized characteristic of the aging," as Emily Reed relates, "is their decreased mobility which may explain the fact that two-thirds of the library services provided for them are extension services" (*49*).

Since the number of senior citizens' centers, retirement villages, and nursing homes has increased greatly, libraries are called upon to provide more outreach services. The bookmobile is one of the more convenient ways of delivering service. Some libraries are also providing books by mail to the homebound or shut-in, through home delivery of books, including large-print books. Use of volunteers in some programs has made it possible to give some individualized services such as reading aloud. Storytelling by children's librarians and programs using audiovisual materials, cassettes, records, films, filmstrips, and slides are used extensively with groups meeting inside the library or wherever senior citizens gather. An increasing number of libraries are making talking books available to the aged persons who either cannot hold a book or whose eyesight is too poor to read large print. The range of services and the means of delivering them to this specialized library clientele seem to be limited only by economics.

Services to the blind and physically handicapped have individualization characteristics in common with services to the aging. The differences may not be greater than this commonality. For the visually handicapped, Braille and talking books supplied through federally supported regional centers make up the largest service. Local libraries within the regional library's sphere often serve as local contacts. Special equipment in greater variety has appeared in recent years, such as bed specs, magnifiers, page turners, and ceiling projectors for the temporarily or permanently severely impaired.

Public library service to inmates of correctional institutions or detention centers presents an entirely different set of problems. Marjorie Le Donne explores some of the problems librarians face. "This nation's system of correctional institutions," she points out, "was born of 19th century idealism and today is facing painful recognition that the ideals no longer apply—and where applied, don't work. Correctional libraries, as an integral part of the ideal, must share in the re-evaluation" (*50*).

From 1870 forward prisons became dedicated to the concept that inmates could be rehabilitated:

> From that time forward the place of the correctional library was firmly established in the goals of the rehabilitational effort. Its function was to be both recreational and educational. Although in most states sincere rehabilitational programs have yet to be implemented and libraries remain inadequate tokens, this goal has never been abandoned (*51*).

The uncertainty of how to rehabilitate the convicted felon is a national problem which affects library service in state correctional institutions, county jails, and juvenile detention centers. Local library service to all three, as Le Donne suggests, may be inadequate, but staff providing such service share the same concern and

enthusiasm as those responsible for individualized service to the aged, hospitalized, and handicapped. Guidelines were developed in 1966 through the joint efforts of the American Library Association and the American Correctional Association which would seem to establish more firmly the role of the library in such institutions.

Evaluation of Library Services

Librarians are more aware than ever of the need to assess the services they provide the public. With rising expectations and diminishing budgets the need becomes greater, but evaluation is exceedingly difficult with vague objectives, unreliable measurements, and incomplete standards.

As the literature dealing with evaluations of library service grows, public librarians are beginning to adopt a more analytical attitude toward their work and the outputs generated by their libraries. The most fruitful addition to this growing body of knowledge has come from the research of such writers as Lowell Martin, Ernest De Prospo, Kenneth Beasley, Claire Lipsman, and Thomas Childers. Particularly useful papers were published in *Library Trends*, January 1974, under the title "Evaluation of Library Services." They explored the complexities of evaluating administrative services, the collection, processing service, adult reference services, public services for adults, and services to children. For the public librarian, such publications expose the range of evaluative material available to prepare both the librarian and the library staff to begin the task of measuring the quality of services offered.

Some concerns are examined by Margaret Monroe in her discussion of evaluation of public services for adults (*52*). Her statements and observations may serve in principle to indicate the problems of evaluating other services offered by the library. She lists the following limitations:

1. Lack of agreement within the library profession as to the goals of adult services, except at the vaguest and most general level of formulation, has made it difficult to assign priorities or precise objectives to adult services on a national basis.
2. Measurable objectives in terms of library output or library impact have not been possible to conceive since adult services have been activated by the user rather than the library, which maintains a "readiness to serve" attitude.
3. Principles of adult services have not been formulated with a precision that makes evaluation of process a matter of more than personal taste.
4. Sociological and psychological research skills needed for evaluation of the impact of adult services have not been mobilized to the task (*53*).

At the same time that there have been these fundamental deterrents to effective evaluation, Monroe notes, there are three major influences on programs favoring evaluation of adult services:

1. Local government management has begun to require libraries under their jurisdiction to assume their share of public accountability through application of Program–Planning–Budgeting Systems or Management by Objectives programs which build evaluation into their systems.

2. Library Services and Construction Act grants through the Office of Education have given sustained emphasis to evaluation.
3. The development of research orientation within library school curricula, concurrent with research programs and doctoral research expansion, has provided skills in evaluation and awareness of its significance among a wider group of librarians (*54*).

Ernest De Prospo has concerned himself with the development of measurements of effectiveness of public library service. In his paper "The Measurement Art" (*55*), he lists three main elements to consider within the question of measurement:

1. Measurement assumes evaluation.
2. Evaluation assumes the desire to know where we are at a particular point in time.
3. There is the recognition that some change is needed and wanted.

"Measurement, then," he says, "basically deals with these three questions: where we are, where we should be, and what are the kinds of things needed to get where we should be. Improvement in performance, improvement in programs, improvement in services, assume that we can confidently estimate levels of performance at a given point in time" (*56*).

That services can be improved through periodic evaluations seems to be the gist of most of the literature of measurement. An example is contained in Thomas Childers's paper "Measuring the Quality of Information Service" (*57*).

He suggests that past as well as present measurements have been little more than simple counting. Counting reference questions gives no clue to the quality of service offered. Experiments cited by Childers consisted largely of hidden or unobtrusive testing through the use of proxies telephoning or visiting as "real" clients with "legitimate" questions. Test questions were previously checked carefully and correct answers documented. The proxy asking the question noted all pertinent reactions of the reference assistant and the answer given. Using this technique, tests were made in Baltimore in 1965, in Summit County, Ohio, in 1972, and elsewhere. The results indicate that some libraries are not fully aware of their failure to be "centers of reliable information." The indication is that reference personnel need to be more aware of their obligation to develop greater reliability through continuous in-service training and continuous review of information resources. Such testing leads inevitably to the development of standards of performance. Childers states:

> Clearly, there are limitations to the unobtrusive testing employed to date. The most serious is the nature of the inquiries. Nonetheless, the data produced in studies so far have not been countered by other evidence. Unobtrusive study is promising as a means of generating information for assessing individual operations and cooperating efforts among libraries and possibly for establishing national norms. It seems even in its present embryonic stage to have potential for day-to-day management as well as for long-term planning, not only in public library reference departments, but in a wide spectrum of library and information services (*58*).

Measurement of reference service is becoming a more urgent concern. The

Symposium on Measurement of Reference Service held in New York in 1974 and the proceedings published by the American Library Association expose some of the problems involved in collecting reference statistics and using them intelligently as measurements of service.

A more generalized effort was the Measurement of Effectiveness of Public Library Service Study sponsored by the Public Library Association, which began in 1971. Two years later *Performance Measures for Public Libraries* appeared, which presented the first three phases of the study conducted by Ernest De Prospo, Kenneth Beasley, and Ellen Altman:

> This document is intended to be used by anyone, public librarian, trustee or interested party, as a background for the study of measurement techniques as applied to public libraries and to illustrate the thinking that led to the indicators found to be effective discriminators of public library service. The Study, based on a sound research methodology, opened the door to new ways of gathering library statistics and applying them to decision making. The purpose of this study is to find new ways of describing library service in statistical terms and creating a better profile of library operation than has been possible in the past (*59*).

The five phases of the study are as follows (*60*):

Phase I

1. Reviewing previous efforts to assess effectiveness of library service as reported in the literature.
2. Analyzing present library statistical reporting systems and their applicability as indicators of effectiveness.

Phase II

1. Developing criteria which appear descriptive of the effectiveness of a public library program.
2. Developing a methodology for the data collection process for the selected criteria.
3. Collecting data in a small number of pilot libraries to test the feasibility of the method.
4. Establishing tentative ranges of performance for each criterion.

Phase III

1. Testing the criteria and methodology developed during Phase I in a sample of public libraries on a nationwide basis.
2. Preparation of a "profile" for each of the sample libraries.

Phase IV

1. On-site visitations of some of the Phase II libraries to determine to what extent the measurement indicators developed coincide with professional judgment about the effectiveness of service provided by those libraries.

Phase V

1. Detailed analysis and summary report.

In developing the measurement criteria, De Prospo, Beasley, and Altman kept the user in focus. The criteria were based on three services common to all public libraries and reflect those which are basic to the users. They are materials collection, facilities, and staff assistance. The study also examined library programs. Although

there was agreement that certain aspects of programming do not lend themselves to measurement, certain things can be measured such as the number of programs held, the variety of programming, and the different groups within the community who have been served by these programs.

This study determined that the

> methodology developed is appropriate to the overall objective of the study. Selected data which measure various aspects of the public library program can be collected, with minimal assistance, at the local library level. The data themselves do discriminate the performance of one public library from that of another. The data come much closer than present library statistics to meeting the demands of both the librarian and the patron for "user-oriented" indicators which are necessary if the public library is going to reflect accurately the variety of activities that it is undertaking (*61*).

The importance of this study from a practitioner's point of view is that measurement serves as a device for standardization. If usable standards are ultimately to be developed, this study may prove to be the key, and the development of a uniform methodology for collecting data about a library's services and operations will give the administrator a tool for measuring and a basis for decision making.

Development of Public Library Standards

One of the concerns of public librarians attempting to measure the effectiveness of service is the lack of up-to-date standards to determine a sense of direction. Standards for public libraries have been developed by ALA over the past 40 years, in 1933, 1943, 1956, and 1966. Each set of standards reflected fresh concepts of services or organization. As Lowell Martin notes:

> These fresh concepts injected into the library scene every decade or so, stimulated new development in the field for a period of several years after they appeared. Then their clarion call faded and a hiatus prevailed until new directions were developed and a fresh statement issued. At the present time, we are in one of the intervals, with public library standards that are no longer a call to action and original concepts not yet formulated to animate the next statement (*62*).

The 1966 Minimum Standards for Public Library Systems states in the preface that it

> . . . provides a guide for evaluating services provided by systems of public libraries. It is intended for the use of librarians, library boards, government officials, and interested citizens in assessing the adequacy of their present library services and in formulating plans for improvement. It presents minimum standards; that is, it describes the least the citizen living in the last third of the twentieth century has a right to expect from his public library. Some libraries will find the standards far beyond what they can achieve today; others will have met or exceeded most of them. But these are only indirectly standards for those institutions called libraries; their primary purpose is to ensure that the citizen has available to him library service of at least the caliber described (*63*).

The 1966 statement differs from early ones in its emphasis on systems of libraries rather than the independent community library. Most public library administrators would probably agree that the 1966 statement does little to set a norm for services of either systems or independent libraries in urban centers based on present-day objectives. This is one problem. Another is that standards should go beyond the issuance of an up-to-date statement alone. Library standards are developed by the profession and then accepted at state or local level without official authorization. "On one hand," says Martin, "are the noble professional pronouncements for public libraries; on the other hand are local laws and traditions which allow each library to be just as poor or 'unstandard' as it wants to be, or more precisely, as poor as its local constituency is willing to tolerate" (*64*).

The existing criteria may be viewed as norms which tell the administrator how well his library is doing compared to others, but there is the concern that the standards mean more to librarians than they do to governmental authority and the public. Each time standards were developed, in 1933, 1943, 1956, they appeared under propitious circumstances. In 1966, however, the new standards did not speak to the profession's major concern. The new concern was outreach services to meet some of the needs of the urban poor. "What is needed now," says Martin, "is a foundation of clear and explicit objectives and a functional prescription of what is needed to achieve objectives—in other words, 'program' standards to go along with program budgeting" (*65*).

It is Martin's observation that if new standards are formulated, this formulation, in his opinion, must come from a wider social and governmental base.

> At least three sectors in addition to professionals should join in the endeavor: citizens in general (perhaps in the form of library trustees, although they often do not represent the people at large) political leaders and government officials, and the most prescient of sociologists and social theoreticians. It is conceivable that such a congress of views could see through to the social role of the public library in the next decade (*66*).

Somewhat optimistically, Martin believes standards can be formulated and measures of achievement can be devised.

Materials Collection

As the *Minimum Standards for Public Library Systems, 1966* states:

> the public library as an institution exists to provide materials which communicate experience and ideas from one person to another. Its function is to assemble, organize, preserve, and make easily and freely available to all people the printed and non-printed materials . . . (*67*).

For most public libraries, limitations on the acquisition of materials would seem largely economic. More important than economics alone, consideration must be given to the acquisition of materials to achieve specific service objectives. Varieties of materials selected should be guided by the objectives. One of the characteristics

of a well-developed materials selection policy—a basic document in every library—is the addition of a statement of library goals and objectives as a basic guide to and purpose of selection. It is also important that other policies adopted by the library board of trustees, such as the Library Bill of Rights, be included.

The materials selection policy as a whole sets the basis for day-to-day decisions for selection. This elementary task of librarians is generally done with considerable skill, but it should always be regarded as an input out of which the real services of the library may be generated. Knowing what to do with the assets the library collection represents is another, more difficult, task. Just informing the community of materials available presents a task of some magnitude. Consider, for example, materials for the disadvantaged. As Lipsman points out:

> The selection of materials is or ought to be what libraries know most about and do best. Most programs whose objectives have been directly related to books, reading, and materials in print have been successful in assembling and organizing appropriate resources and carrying out their objectives. If programs of this type have failed, it has usually been due to inadequate publicity or promotion rather than poor materials (*68*).

In programs that have succeeded, staff with more than casual acquaintance of the materials published select relevant materials with a genuine understanding of user requirements. In specific programs, all of the materials, services, and activities are linked together to achieve specific objectives. In such a case, selecting materials for the community as a whole, with its diverse interests and educational and cultural backgrounds, becomes less confining with fewer chances for error, because some understanding of community interests and needs has been developed. As yet there are few measures that can be identified as useful to the public librarian in this regard to guide future selections. A few that have been developed view the library as an inventory supply problem and try to assess which materials will be called for most frequently. All that seems to have been determined is that the probability of a book being used declines with age.

Not so traditional and perhaps less understood generally is the relationship of the book collection to the needs of the adult new reader. The results of the Library Materials Research Project have a significant impact on the public library's ability to provide significant materials for this class of new reader that are different in many respects from those encountered before by librarians. For example:

> The lack of appropriate reading materials, particularly at the elementary level of reading skills, suitable to adult experience and intelligence results in serious handicap for adult new readers and for adult program achievement of learning goals. Adults require material from first to sixth grade level with content related to adult experiences and the ethnic, racial background and life styles of potential readers (*69*).

The whole approach made clear in this significant study seems to suggest a more particularized method of book selection and a parallel to providing advanced subject matter in simplified form. Two recommendations of the study are "that a readability formula be developed specifically to assess the reading level of materials

for adults; an experimental study be conducted to test reading materials identified and evaluated as appropriate for adult new readers" (*70*).

The need to serve the adult new reader brings about revisions and refinements in material selection policies. The policy itself should reflect what all of the library's agencies and programs are doing to provide pertinent materials, both print and nonprint. It is a part of collection building that many contemporary librarians are beginning to understand better.

As Gregory and Stoffel point out:

> Collection building, in the last analysis, is a service carried on by libraries and systems of libraries on behalf of the people who make up our society. Its broad function is to provide resources of knowledge, information, reflection, and inspiration that are modern tools for citizenship, for participation in the economy of the community, and for the fulfillment of an individual as a person. Collection building is more than selecting and purchasing standard materials. It is also the provision of costly information services that the average person cannot afford and the provision of materials that go beyond his expectations. Collection building is an act of faith in the power of ideas and knowledge and in the values of continuing education, which matches the life-styles of the organized and the unorganized individuals in the community.
>
> Selection is the most satisfying part of the many-faceted jobs of a librarian. It is a professional duty that has the unusual byproduct of continuing education for the librarian. Selection is a trust in which the factor of accountability has become more imperative as the world has become smaller and more frightening as the affairs of mankind have become more complex. The grave need for reliable collections and for expertise in their use points up the necessity for sharpening the book and materials knowledge of all individuals who work in libraries and for involving them in the collection building process (*71*).

Community Relations

An obligation the administrator of a public library recognizes is the importance of keeping the public informed about the resources, activities, and programs of the library. Although a chief librarian assumes this responsibility, in its daily practice it is a duty more wisely delegated to a trained professional. In most of the larger public libraries, there is a position designated as public relations or community relations director. It is a formidable job. Assuming that it is a job that can be delegated to a member of the staff who has a flair for writing is to understate the complexity of the field, as anyone realizes when scanning such texts as *Handbook of Public Relations*, edited by Howard Stephenson.

As Sarah Wallace wrote:

> Librarians, like everyone else, do a lot of talking about public relations. They should; their business is with the public. Again, like everyone else, they frequently are not sure what they are talking about. And again, they should be. If the best results are to be obtained from any public relations program, it should be thoroughly understood by management and by staff what the term embraces. Similarly, a publicity program should be thoroughly understood by both management and

> staff. A library that wants publicity, that defines public relations as a news release, should not hang a "public relations" sign on an office door. Conversely, if good public relations is sought, and a full program is envisioned, it is foolish to hire a reporter and hand him the job of consultation on policy, of interpretation of public to management and policy to public, of staff indoctrination, of building an image (*72*).

Whether we call the department of the library public relations or community relations the fact is the objectives remain the same. However, the term community relations probably is a more up-to-date one.

Nevertheless, there are two important points that Sarah Wallace stated: (*a*) publicity is not public relations and (*b*) the public relations or community relations director is more than a reporter. Libraries that have well-managed community relations departments got them by design. The department head was hired with the same care as would be taken in securing the services of a trained consultant.

In library literature there is considerable documentation that public libraries have adopted good community relations practices. They are involved in a variety of interlocking activities related to different kinds of audiences and use different methods of communication.

Regularly published reports in *Library Journal, Wilson Library Bulletin,* and other periodicals illustrate how libraries use the major PR tools. They show that in addition to the usual publicity developed as "news" for print and the electronic media, libraries make use of open houses, speakers bureaus, newsletters, posters, displays, slide and film programs, cooperative programs with other groups or agencies, surveys, booklets, and other activities to convey an image of the library to the audience the library attempts to reach. It should be clear that an image is not "created." The library already has an image. The effort expended is to adjust the image in some way for the publics who hold it.

There is a fairly constant flow of ideas in library literature describing tested ways of reaching special interest groups. The Reference and Adult Services Division of the American Library Association published suggestions for publicizing library service to business (*73*). Among the suggestions offered, representing a collective experience, are newsletters to business personnel, use of spot announcements, regular contact with local newspaper business editors, sponsorship of special programs in the library of particular interest to business people. These and others are offered as positive ways of letting the potential business users know what the library has and how it can serve them.

With all of the suggestions flowing from library literature, the small independent community libraries have difficulty implementing a public relations program. Gregory and Stoffel touch on this subject in their discussion of public library systems.

> An examination of available surveys of small or medium-sized libraries reveals a general weakness in the area of public relations programming. A library may have excellent publicity through outstanding on-site displays, spot announcements on the radio, attractive reading lists, and a regular newspaper column. Publicity, however, is only one part of a public relations program. Surveys indicate that

> despite good publicity the typical library has not been notably skillful in informing the total public about its capabilities to serve their needs (*74*).

They point out that systems can offer member libraries professional treatment of public relations matters on a local level while communicating to the public area-wide the services of the system as a whole. They do not suggest, however, that system membership alone will produce an effective program but only that cooperative efforts are more likely to develop the expertise required to produce effective programs.

Lipsman has documented the need for effective publicity in programs for the disadvantaged. In her study of programs she observes that

> visibility is a very important and very much underrated program factor. Effective program promotion is an art and requires unremitting attention. Most librarians believe, and rightly so, that word of mouth is the most effective advertising, but they fail to make the skillful, continuing, comprehensive effort that must go into stimulating and evoking all those interpersonal communications. Particularly in big cities, the promotional effort must be intense and precisely aimed, otherwise it may not be able to penetrate the conflicting din of other claims or the indifference that may characterize big-city dwellers.

She cites an example from one of the cities studied: "It was found that a children's program had been operating its activities and turning out flyers and posters and newspaper articles for three years, yet the elementary school principal down the street had never heard of it" (*75*).

While most public library administrators are aware of the value of a good and continuing public relations program, funding is likely to be a deterrent. One writer thought other factors may be involved.

> The lack of good library PR can first be traced to the lack of professional public relations practitioners to develop and carry out the needed programs; lack of good library public relations practitioners can then be traced to the lack of money to hire the professionals and provide them with decent budgets; the lack of money for good library PR ends up being traced to a lack of commitment on the part of library administration and trustees (*76*).

The question of what constitutes a good public relations or community relations program for the contemporary public library would provoke a fairly lengthy discussion. The need for such a program in today's society, which requires an increasing use of information and other services of the library, is an undisputed matter.

"Public relations," Sarah Wallace summarizes, "rightly understood and rightly administered, can become the means by which the community knows, appreciates, and uses to the fullest extent the public library which it has established" (*77*). It is, therefore, an essential part of the operations of the contemporary public library.

Public Library Buildings

Over the past 30 years, a substantial body of knowledge has been developed within the library profession reflecting the accumulated experience of trustees,

librarians, architects, and consultants in the successful completion over the country of hundreds of public library building projects. Detailed descriptions of buildings completed have appeared annually in the architecture issue of *Library Journal.* This building boom has been the result of need to replace worn out, inadequate structures, and of the willingness of local citizenry to underwrite the cost of improving the physical facilities of their community's library. For a time, through Title II of the Library Services and Construction Act and other federal programs, support funds were available. The accumulated knowledge derived from building project experience has been collected and disseminated through the American Library Association, Buildings and Equipment Section, Architecture for Public Library Committee, and by a host of librarians and a number of architects voluntarily sharing information. This group was responsible for numerous library building institutes held in connection with annual ALA conferences, for critique sessions, and for publication of articles, monographs, studies, proceedings, guidelines, and standards. In addition to the development of a body of knowledge, a corps of able building consultants became available to assist local librarians and trustees in building, planning, and advising local architects.

Currently librarians and trustees can organize fairly quickly approaches to capital improvements campaigns and building projects through an examination of library literature, with the help of a consultant, and through an intensive collection of local data. Some very elementary information useful in planning for a capital improvements campaign may be found, for example, in Gregory and Stoffel's work (*78*), to be used with a subsequent, or a concurrent, examination of the basic outlines set down by Keith Doms in "Public Library Buildings" (*79*). These and many other sources yield reliable basic outlines only. They must be adapted to local conditions.

Universal to all successful library building projects are some fundamental concerns. Their complexity is in direct proportion to the size of the project, obviously. A primary consideration is the organization of the planning team. The number of people on the planning team varies with the size and complexity of the project. At the very least the library board, the librarian, the architect, and the related specialists or consultants are included on the team. Each member of the team has a continuing responsibility throughout the project. It may be determined by the board and librarian together with other government officials, for example, that before building plans are considered, a community analysis study is necessary to generate specific data on the kinds of library services, programs, and activities which will be necessary to meet established needs of people to be served through a new facility. At the very least a community survey in planning a new building may tell the librarian and trustee what kind of new services should be considered for inclusion in the planned building.

Where to locate a library building was a matter of considerable discussion among librarians for a number of years. A most influential paper, *The Effective Location of Public Library Buildings,* written by Joseph Wheeler in 1958, concluded that

> the librarian needs to have studied the needs of the library, and to have drawn up a careful program in shape to withstand question and criticism. Then by the

> cooperative efforts of librarians, trustees, planners, architects, and public officials, willing to study the problem and placing the objectives and interests of the library and its users first in their thinking and planning, a strategic site conducive to maximum service and minimum operating cost will be assured (*80*).

Wheeler's belief is that the best location of the library is where the crowd is, and this was supported by the study. The main library should be in the busiest part of the central city, with branches in busy locations elsewhere in the area. He supplemented the 1958 study with an update of the data in 1967, in which he noted that evidence still leads to the "inevitable conclusion that the main public library building in a city should be placed in, or kept in, or rebuilt in, the heart of the downtown business and office district" (*81*). A large part of this paper is devoted to the observations expressed by librarians about their local experiences. Harry Peterson noted in "Developments in the Planning of Main Library Buildings":

> In the light of experience and the virtual unanimity of expert opinion, the downtown retail shopping and office area remains the best location for a new main library, barring unusual circumstances in a given situation. It is of interest to note that most of the larger main library buildings opened in recent years occupy such sites (*82*).

Three major steps in planning a library building are the building program, preliminary planning, and working drawings. The building program is, in Robert Rohlf's words, "(1) a written statement of the objectives, policies and goals of the library, and (2) a description of the physical areas and space needs for the achievement of these goals and objectives, the relationships of these spaces to each other, the nature and amount of furniture and equipment required for these spaces and whatever limitations must be considered" (*83*).

From the building program statement the architect develops preliminary plans which become a graphic statement of the written program. In the preliminary planning stage, the librarian and staff contribute toward preliminary drawings through their knowledge of operations of the library. It is during this stage that architect and library staff working together produce a functional structure. The architect determines size, quality, cost, arrangement of elements, structural methods, and mechanical requirements of the building.

The final step in planning is preparation of working drawings by the architect. These are reviewed by the board and staff and eventually, with a set of specifications, serve as contract documents. The working drawings become the blueprints for the builder.

A recent assessment of the structures resulting from the efforts of planning teams to produce functional, attractive new library buildings was done by Harry Peterson. He assembled the accumulated experience of many librarians who had participated in planning, building, and occupying main library buildings. Libraries in the following cities were reviewed: Akron, Buffalo, Cincinnati, Dayton, District of Columbia, Kansas City, Minneapolis, Nashville, New Orleans, Norfolk, Queens Borough, San Antonio, San Diego, Tampa, Tulsa, and Wichita. Large additions to main buildings or major remodeling projects were cited for Memphis, New York (Mid-

Manhattan Library), and Milwaukee. His review leads to the obvious conclusion that "building a large main library requires both skill and planning" (*84*).

Branch buildings, while less complex, require the same care in planning as main library structures. There is a trend toward larger and fewer branch buildings. Branches generally vary widely in size of building and area of responsibility. In evaluating branch building sites, Doms suggests the following criteria:

1. Branch libraries should serve a minimum of 25,000 to 30,000 people within a one to one and one-half mile radius of the branch, subject to topographic conditions.
2. A branch library should be located within reasonable proximity of a residential area so that a sizable number of children and adults will be within walking distance.
3. A branch library should be near an important street or highway intersection, especially where public transportation is available.
4. A branch library should be either within or on the fringe of a major neighborhood or regional shopping center.
5. A branch library should be located where it can be clearly seen.
6. A branch library should provide parking space equal to its interior area if general parking facilities are not available (*85*).

Most of the library buildings constructed in the past 25 years, as a check of the *Library Journal* architectural issues will affirm, offer their communities physical facilities that invite people to enter, read, look, listen, learn, and enjoy. The most successful building projects, the experts seem to agree, achieved excellence primarily because of careful planning and the attention to detail given by librarians and architects working together.

Overview

The public library in the mid-1970s is, as the foregoing discussion and the literature cited suggest, a multifaceted public service institution which is in the process of change to meet changing community needs. Close reexamination of the heritage that produced the public library is also being undertaken.

Within states there is increasing effort to join libraries together into larger units for more effective, efficient service to all the people. Changes in patterns of service have expanded outward from central cities to include or share specialized services with larger populations. At the same time, libraries of all kinds—academic, school, special, and public—are performing more tasks together to provide services which could not or were not likely to evolve independently. Libraries and community agencies are beginning to develop diverse relationships and stronger communication linkages not only for mutual understanding but for the benefit of their clients.

The Library Services and Construction Act and other federal legislation have stimulated experimentation by libraries in neglected areas. Major emphasis has been placed on services to client groups: the disadvantaged, the aged, the environmentally

remote, who would continue to be neglected unless programs were devised to reach out to them where they are and with great sensitivity adapt materials and services to relate more appropriately to their basic needs. Outreach is not a new concept, but there is a new intensity and greater concern within the profession toward more effective action. There is a more conscious effort to develop services that are user oriented. Pressure for these changes has come from both inside and outside the profession.

Librarianship, particularly administration, has absorbed most of the techniques of management and they are being applied with great skill. The role of the library staff has expanded to include more of the decision-making process. At the same time, there is greater concern at all levels of staff for improving skills and for in-service training and staff development. It has become increasingly important for staff to plan better, understand the complexities of interlibrary cooperation, use newer media effectively, and comprehend advances in technology and the newer modes of communication.

Effectiveness of staff is part of the concern for improving the quality of library services. The setting of objectives and establishing of priorities are linked with the concern for better methods for measuring a library's effectiveness. Developing methods and techniques of measurement is essential for evaluation of library services. It is a skill that is yet to be used well and consistently. Collecting statistical data still seems limited to circulation as a measure of output. Along with the lack of standardized methods of effective measurement is a lack of up-to-date standards which reflect concepts of service and organization. What is needed is a new set of standards to serve as goals to be achieved.

Librarians have been accused of selling their profession and library services short. Libraries have not adequately provided for effective public relations efforts. Except for a few glowing examples annually recognized by the John Cotton Dana Award most libraries are not able to maintain consistently effective campaigns. Skills developed by PR practitioners need to become part of the librarian's technique for more effective communication.

While most library administrators recognize that they need all the help they can get, they are faced with shrinking budgets and rising costs. Meeting the financial outlay for library materials, staff, and maintenance of physical facilities has been complicated by inflation and the ever increasing cost of energy. Many items in the budget were once considered relatively stable, but their cost now threatens library hours and bookmobile schedules.

The future of libraries, like the future of cities, cannot be thought an impossible dream. Problems surrounding the operating of all community services have grown considerably more complex. Massive problems need to be broken down into small problems and solved, if chaos is to be avoided. Predicting the future may be interesting but of dubious benefit. What we do today may have greater impact on future direction than we realize. Speaking about the community and the library and some possible futures, Thomas Childers is on stable ground by emphasizing that it is

> imperative that specific library goals for each locality be formulated today. It will be more imperative tomorrow, but maybe too late. . . . Once goals are determined, the library must move aggressively to achieve them. It must identify itself in the community as the sole, or best, provider of the specific service it purports to provide. For without swift and vigorous action, the institution stands to have its functions further eroded by agencies that will emerge to assume certain of the library's goals (*86*).

We know that change will take place. How to cope with it effectively has to be determined in each community by calling together the best information and experience the profession has to offer with community expertise to produce a strategy for change.

At the same time, aware and aroused librarians and trustees must ultimately decide that independent library operation will fade at a time when interlibrary cooperation, interagency cooperation, and networking become more apparent as the means of planning and providing services in a society that will continue to be more complex. They should be aware finally that the mainstream of public library development planning is somewhere close to the eight national program objectives spelled out by the National Commission on Libraries and Information Sciences. They are:

> *Objective 1.* To ensure that basic minimums of library and information services adequate to meet the needs of all local communities are satisfied. (Local libraries and information centers, whether large, medium or small, and whether public, academic, or school, are vital links with the people.)
>
> *Objective 2.* Provide adequate special services to special constituencies, including the unserved. (There are large user constituencies which require services and materials of a specialized sort. Such groups include the poor, the illiterate, the blind, the visually and physically handicapped, the ethnic minorities, American Indians on reservations, the very young, senior citizens, inner city youths, migrant workers, the institutionalized, and many other parts of our society.)
>
> *Objective 3.* Strengthen existing statewide resources and systems. (Because the states are the essential building blocks in any national information system, it is important that they all retain minimum levels of proficiency and strength as parts of a nationwide program.)
>
> *Objective 4.* Ensure basic and continuing education of personnel essential to the implementation of a National Program. (It is important that those giving service in libraries and information centers be qualified for their work.)
>
> *Objective 5.* Coordinate existing Federal programs of library and information service. (Many of these programs are already performing centralized bibliographical, reference, and other services which are of benefit to all libraries in the country.)
>
> *Objective 6.* Encourage the private sector (comprising organizations which are not directly tax-supported) to become an active partner in the development of the National Program. (Two distinct components of this sector can be identified as having the capacity to make special contributions to the National Program: the special libraries and information centers—in both for-profit and not-for-profit organizations; and various service organizations.)
>
> *Objective 7.* Establish a locus of Federal responsibility charged with implementing the national network and coordinating the National Program under the policy guidance of the National Commission.

Objective 8. Plan, develop and implement a nationwide network of library and information service. (The aim is to permit rapid delivery of needed services and materials to people in all jurisdictions without artificial institutional or geographic constraints) (*87*).

Working to achieve these objectives will occupy the efforts of public and other librarians for the foreseeable future.

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CONTEMPORARY LIBRARIES IN SCANDINAVIA*

Public libraries in the Scandinavian countries, as in many other developed countries, have evolved during the 19th and 20th centuries, but the greatest growth has taken place in the 20th century. Within this development, certain elements, although not unique to Scandinavia, have been combined to produce characteristics which tend to be regarded as Scandinavian. This combination of features exists to some degree in all the Scandinavian countries of Sweden, Denmark, Norway, and Finland, but it is the level to which the elements exist and how they have developed which makes each of these country's public libraries uniquely their own. Consequently, it can be said that it is not a matter of differences which distinguishes them, but rather one of diversities of shade. One country may have attained a higher level in one field, but may be surpassed by another country in another field, and the situation is constantly changing (*1*). The characteristics which have aided in the development of high quality public libraries in Sweden, Denmark, Norway, and Finland include: a strong influence of Anglo-American librarianship, a long history of government legislation and support, the development of public library systems based on regional central or county libraries, an extensive interlibrary lending system, the creation and growth of the library service bureaus, the erection of many new and imaginative library buildings, the compensation of authors for the use of their books in libraries, the provision of library services to special groups through outreach activities, and an involvement in the arrangement and provision of cultural events.

Information about library activity abroad had probably reached Scandinavia quite early, but the influence of the public library movement in the United States and Great Britain was of fundamental importance for the libraries of Scandinavia. The idea of the free public library, open to everyone, which developed in the United

* The References and Bibliography for this section begin on page 355.

States was quite different from the small charity-type library in Europe and Scandinavia. Knowledge of these American free public libraries spread to Scandinavia about 1900 and those interested in learning more about the American libraries began to travel to the United States to study them. In Denmark an advocate of the free public library was Professor A. S. Steenberg, who spoke in all of the Scandinavian countries about this new kind of library. Haakon Nykuus, a Norwegian who had worked at the Chicago Public Library from 1893 to 1897, disseminated the new ideas about modern public library service in Norway. In 1909 Dr. Valfrid Palmgren-Munch-Petersen wrote a book about her observations of American public libraries and greatly influenced the Swedish libraries. Among the Finnish advocates of the American library ideal, J. A. Kemilainen might be mentioned. The main reforms under the name of American modernity, which were put into practice in all Scandinavian countries, were the free loan of books, open access shelves, dictionary catalogs, card-charging methods, greater variety in bookstocks, children's story hours, and the enlargement of facilities to include reference departments as well as separate children's departments (*2*).

Government Legislation and State Aid

The long history of government legislations and state aid in the Scandinavian countries is another factor which has consistently assisted the development of public libraries.

SWEDEN

In 1842 Sweden passed a compulsory education act which contained a section requiring the clergy to set up parish libraries. These libraries were the forerunners of the present public libraries. Libraries continued to develop in Sweden but they were hampered for a long time by the large number of local communes (*3*), about 2,500 prior to 1952, many of which were too small to provide either adequate library services or social services. This situation existed until 1952 when an administrative reform act reduced the number of communes to 1,000. Although this was primarily a government act, it did assist the libraries by combining small, ineffective government units (which sponsored the libraries) into larger units better equipped to carry out their responsibilities. In 1962 the Swedish Parliament passed another bill which later reduced the number of communes to 280. Although these laws influenced the development of public libraries, it was the library law of 1930 establishing the county libraries which really helped these small libraries to provide basic library services to their patrons. One of the problems with this establishment of county libraries was that this system was not completely operative until 1947, when they began to receive financial assistance.

The early public libraries of Sweden limped along on an inadequate financial base until 1905, when the national government recognized the need to assist public libraries financially. The subsidy was a very modest one but it did establish the

idea of state aid to libraries. In 1912 the study circle libraries, which are libraries owned and organized by the adult education associations, were also granted assistance by the state. In the case of the study circle libraries the state required that they be in existence 10 years before they were granted financial assistance.

In 1930 the Swedish Parliament passed a library act which increased the maximum amount of state aid available to public libraries, created the county library system in order to assist the rural community libraries, and decreed that public libraries and study circle libraries must cooperate in book selection and purchases. An amendment to this act was passed in 1947 which increased the state aid to the county libraries.

In 1955 a new library act was passed which increased the amount of state aid but in doing so imposed certain conditions. In order for the library to receive state aid it must also receive financial support from its local commune. In addition, the state grants were conditional upon the libraries giving satisfactory service, which was ensured by a system of inspection by the library advisers. These state grants were calculated on the estimated expenditures on books and salaries of the staff of the library. The basic grant available was 50% of this amount up to 5,000 Swedish krona. There were also supplementary grants to encourage the employment of professional librarians and the maintenance of reference departments. This rather complicated system of state aid to public and other libraries remained in existence for 11 years until it was abandoned in 1966. The law passed in 1966 came as a shock to libraries because it removed state aid to the individual libraries and placed the burden of the financial support on the local communes. When the law was first passed, it was feared that the communes would not allocate the additional funds needed by the libraries. In fact, that has not been the case. Generally, the local communes were determined and have been able to make up the gap caused by the removal of state grants. The 1966 library law did not completely stop state aid to libraries but shifted the aid so that a portion would go to the county libraries to enable them to continue to provide the wide range of services to the local libraries. In addition, allocations were made to the three loan centers to assist them in providing little-used materials for the public libraries of Sweden.

Sweden has no library law mandating libraries, so, in the fall of 1972, a bill was presented to Parliament requesting a review of the status of public libraries, with a view to a compulsory library system of a specific minimum standard. The bill was rejected; but Parliament did say that the provision of books and information should not be subject to a charge, and this should prevent the establishment of fees in libraries in the future.

In 1975 Sweden implemented a new system of state support for literature and libraries. In the area of libraries, there were no major changes for the public libraries. The existing state inputs were, on the whole, retained but they were increased slightly in some areas. Generally, they were concentrated on specific purposes, where the government is concerned with assisting local libraries. The municipalities will, therefore, be eligible for state grants to start bookmobile operations, to lend books at places of employment, to purchase literature for immigrants, and to improve library activities. On the other hand, the government wants the role

of county libraries, as a complement and support for local libraries, to be reduced. Therefore, the county libraries are in no position to undertake new duties for the time being.

In order to supervise and carry out the implementation of state aid and the development of public libraries, an act was passed in 1912 appointing two library advisers in the Ministry of Education and Ecclesiastical Affairs. It was the responsibility of these people to oversee the activities of the public libraries and plan for their future needs. The library advisers were later moved to the National Board of Education and their number was increased to four. The Library Section of the National Board of Education was responsible for the administration of state grants to county libraries, for the loan centers, and for developing library services. In addition the Library Section also collected library statistics, helped to promote new buildings, inspected libraries to see that they provided satisfactory service, and was generally a center for information about public libraries in Sweden.

In 1974 the Library Section of the National Board of Education was incorporated into a new state body, the National Cultural Council. The Cultural Council, which functions as a service unit under the Ministry of Education, handles all matters relating to state efforts in the fields of theater, dance, music, art, exhibitions, literature, and libraries. Formally, there is not a separate Library Section within the Cultural Council but a high proportion of the staff are representatives of libraries.

DENMARK

The origins of the Danish public library, like those of Sweden, are found in the parish libraries and reading clubs that developed during the 19th century. The total number of these libraries was impressive but because they were small and short of funds, they could not provide much service. However, in 1882 the Danish government recognized their financial plight and began to make small and scattered state grants toward the operation of libraries. In 1897–98 the government increased the amount of money available for grants and established the State Committee for the Support of Public Libraries to administer the grants and to support and develop public libraries. In 1909 the government passed a law establishing the Office of the Government Adviser on Public Library Questions. The establishment of this office by the Danish government helped the development of public libraries but it was not until 1920 that the first Danish Public Libraries Act was passed. This law permitted the establishment of central libraries, set up fixed rules for state aid in proportion to the local contributions up to a maximum of 15,000 Danish krone, and transformed the State Committee for the Support of Public Libraries into the State Inspectorate of Public Libraries.

Although the Public Libraries Act of 1920 permitted the establishment of central libraries, the idea was not new. In 1909 H. O. Lange, librarian of the Royal Library in Copenhagen, had presented a paper in which he suggested a central library system whereby the larger town and county libraries could assist the small

rural libraries. Lange's proposal was not approved by the parish libraries, which feared the loss of their autonomy, but it did arouse the interest of the State Committee. The committee recommended to the government that pilot projects be started in two towns to study the idea and in 1914 a law was passed establishing the project, which was later given full approval in the 1920 act.

Additional library legislation was passed by the Danish Parliament in 1923, 1931, 1936, 1946, 1950, 1956, 1959, 1964, and 1975. In 1931 an amendment to the 1920 act included children's libraries in the legislation and they became, therefore, eligible for state aid although they remained separate organizations from the adult libraries until the Public Libraries Act of 1964. In addition, this amendment abolished the 15,000-Danish-krone aid maximum which had been set by the 1920 act. In 1936 the act dealing with government-supported libraries underlined the fact that any library which circulated books of a cultural or educational nature and conformed to the conditions set down by the government could receive state aid. This act also confirmed that the head librarians of the central libraries could only be appointed with the approval of the director of the State Inspectorate of Public Libraries in the Ministry of Education. Library Boards could appoint all other staff. A 1946 amendment to the Libraries Act set up two special funds. One of these, representing the sum of 2½% taken from the state aid to libraries, was set up to help develop such projects as library cooperation and the organization of bibliographical services. The other, representing 5% of the amount paid to libraries in fundamental grants, was used to establish the funds related to Danish authors' lending rights.

Another Public Libraries Act was passed in 1950 and amended in 1959. This law was important because it stated that the communes had financial obligations to existing public libraries and that the counties had to give support to the central libraries (*4*). In the act, the amount available in state subsidies to the local libraries was increased and special grants for bookmobile services were introduced. The 1959 amendment increased the amount available to both the central libraries and the local municipalities.

The most important change in library legislation took place with the Public Libraries Act of 1964. One of the significant additions to the law was the introduction of compulsory library service in Denmark. However, to help small local governments provide library service, the law allowed for the possibility of cooperation between local authorities to provide joint library service. Another important development was that anyone could now borrow books wherever he wished. Provision was also made for considerably increased state subsidies, which were calculated by a formula which reimbursed the library for 45% of its operating expenses up to 275,000 Danish krone and for 30% of total expenses above that sum. This law still remains in effect although between 1972 and 1975 a number of bills were submitted but never passed. In 1975, the 1964 Public Libraries Act was extended until 1978 but the scale of grants was reduced by one-third. The new draft act breaks sharply with previous practice by recommending that financial assistance paid by the state be given to the municipalities in a lump sum without any require-

ment that it be used in the running of the libraries. The libraries are fearful of this draft act because of the low priority local authorities could give to library activities.

The State Inspectorate of Public Libraries was established in 1920 as a central agency which would compute and distribute the state subsidies and advise libraries. The head of the State Inspectorate is the library director, who is assisted by a deputy director and a staff of librarians. During the 1960s Denmark created a Ministry of Cultural Affairs and the library director and his staff are now responsible to this ministry, having previously been under the Ministry of Education. In addition to administering the state grants to libraries, the State Inspectorate also advises on plans for new buildings and extensions. It also acts as a consultant for children's and youth libraries, music libraries, and on many other topics.

NORWAY

The public library movement in Norway, like that of the other Scandinavian countries, began in the early 19th century. It started as an idealistic movement, sponsored by clergymen, educators, and others interested in social advancement. State assistance, although of a very modest nature, began early in Norway. It was first discussed in 1836 and became a reality in 1841. These state grants were infinitesimal and were not always paid. Between 1857 and 1860 and from 1863 to 1876, they were stopped, but after their restoration in 1876 the grants were made regularly.

Norway passed its first Public and School Libraries Act in 1935. The main provision of this law was to increase the amount of state aid. The act also required the establishment of school libraries and gave them state subsidies of a very limited amount. The Public and School Libraries Act of 1947 is regarded as a milestone in public library history because the act made it compulsory for the municipalities of Norway to provide a public library and also mandated the provision of school libraries for all elementary schools in the country. Another significant feature of the act was the provision that local authorities must give financial support to the public libraries at the minimum of 0.25 Norwegian krone per inhabitant. At the same time, it required the state to make annual grants for book purchases and staff salaries on a scale in proportion to the local contributions.

Generally speaking, the act of 1955 contained the same fundamental directives and provisions as were found in the 1947 act. The act emphasized that each county council must grant an annual sum for the central library activities. In addition, the act stated that the state would make grants to public libraries if certain conditions were met. These included that the library must be municipally owned, that the inhabitants be allowed to borrow books freely, that the library must have at least one paid professional librarian, and that the library's rules and regulations must be approved by the Ministry of Church and Education. This act continued in force until a new act was passed in 1971. The act of 1971 increased the state subsidies available to libraries but the amount to be contributed did not take inflation into account, so even before the law was passed the amount allocated in it for state subsidies was

inadequate. This act also changed the method of allocating state grants from one completely based on the amount allocated by the local government to one which would also take into consideration the economic capacity of the local authorities. In addition, grants can now be made for bookmobile services and for the building and furnishing of libraries. The act also requires that the libraries meet minimum standards for staff and opening hours in order to be eligible for state grants.

The main responsibility for administering the state grants rests with the State Library Office and Inspectorate for Public and School Libraries. The original library office was established by law in 1902 under the Ministry of Church and Education. From 1939 to 1947 it was called the Office of Adult Education and was also responsible for administering study groups and folk high schools. Then, in 1949 it obtained its current status as a directorate for library affairs. The State Library Office is headed by a professional director appointed by the king and dispenses the state subsidies and acts as a planning and development office for the Norwegian library system.

FINLAND

Libraries in Finland developed slowly during the 19th century in a pattern not unlike that of the other Scandinavian countries, but they were hampered by the fact that the country remained under Russian rule until 1917, and they received no financial support from state revenues. Therefore, after independence was gained, Parliament tried to rectify this problem by legislating the first state grants in 1921. In 1928 Parliament passed the first Finnish Library Law. This law provided support to local communities up to 50% of their total library activities or a maximum of 30,000 Finnish markka.

Although this law did set up standards that the library had to meet in order to receive the grants, and this helped the improvement of library service, it made no provision for the central or county libraries that have become the backbone of the Swedish, Danish, and Norwegian public library systems. It was quickly recognized that this law needed revision but it was not until 1961 that a new Public Libraries Act was passed. The Public Libraries Act of 1961 increased the amount of state subsidies that libraries could receive and eliminated the maximum amount that any library could receive. Under this law a rural community receives two-thirds and a town one-third of its library expenditures. These state subsidies have greatly helped to raise the standards of the libraries eligible for these state grants. The law also established provincial libraries in the role of regional central libraries and provided grants of 3,000 Finnish markka to these libraries. It also stated that there should be an additional grant of 10 markka per inhabitant within the area of operation of the provincial library but not including the population of the town in which the library is situated. However, since these grants are specified in terms of fixed sums of money, this portion of the law has not taken into account the problems of inflation and currency depreciation and so today these libraries are not receiving the level of support intended in the law. Other provisions of the law provided for special grants and assistance in library building expenses.

This is the Public Library Act under which Finland is still operating, but the need for revision and the necessity of reevaluating the operation and functions of Finland's public libraries have been apparent for some time. Consequently, in 1973 the Council of State set up a committee to study the public library systems in Finland and make recommendations for their future. In 1976 this committee sent a 500-page report to the Minister of Education in which it made many recommendations and among them were reforms in the state subsidy system. However, because of difficult economic times, the state is not interested in additional expenditures so it is unlikely that those portions of the report will be acted upon.

The State Library Office was set up by law in 1921 and charged with the task of administering the state grants. The Public Library Act of 1928 established the status of the State Library Bureau and divided the country into seven administrative districts and assigned a touring library inspector to each. It was each inspector's responsibility to give instruction in library administration and development to the librarians in the district. The act of 1961 abolished the State Library Office and placed the administration and development of the country's public libraries under the National Board of Schools in the Ministry of Education, and the office was reconstituted as the School Board Library Office. To assist the National Board of Schools in its public library supervision, the law set up an advisory council including representatives from the Ministry of Education, the National School Board, cities, country towns, public and research libraries, library schools, and organizations working for libraries and adult education in both language groups of the country.

Public Library Systems

DENMARK

The regional central libraries or county libraries are the foundations of the public library systems in the Scandinavian countries and have facilitated the development of an extensive and efficient system of interlibrary lending. The oldest system of regional central libraries exists in Denmark, where the idea for central libraries was first proposed by H. O. Lange in 1909. Lange recognized the problems the small rural libraries, with their poor collections and untrained staff, were having in providing good library service. As a solution to this problem, he recommended that there should be a large library in every town—a library of at least 50,000 volumes—and that these libraries should serve the surrounding rural libraries as well as the towns themselves. In addition, these town and county libraries should be linked with each other and with the state and research libraries in a national system (*5*). The first pioneer central libraries were set up by law in 1914 and when they proved successful, the Danish government in 1920 legislated that they be set up throughout the country. Today there are 14 central libraries, one for each of the counties of Denmark. The central library is a local institution which serves its

own municipality and at the same time assists other libraries in the county. Such assistance consists partly of book loans to libraries whose stocks are inadequate to meet local demands, partly of expert advice on budgeting, selection of books, and technical processing. In addition to the regular state grant to municipalities, the central libraries receive a special state grant which in 1974 totaled 11 million Danish krone (*6*). This statutory cooperation among libraries means that the individual library is not an independent unit but part of the country's total library system, each unit of which intimately cooperates with and supports the other parts, for instance, through interlibrary lending.

The interlibrary lending system in Denmark is based on a hierarchical arrangement. If a local public library does not have a book it will first turn to its central library. The collections of these local libraries should be adapted to the size of their local populations and should cover their patrons' primary needs. The 14 central libraries function as junctions in the Danish system of library cooperation and are required to provide lesser-user materials for the local libraries in their area. If the central library does not possess the book required, it will pass the request on to another central library that might have the book or send the request on via the National Loan Center. This center is run by the state as a joint service organization for libraries and its main function is to pass on requests from Danish public libraries to others that might be able to supply the needed materials.

For many years the research libraries in Denmark, like those in the other Scandinavian countries, have provided the bulk of the public libraries' needs for specialized literature. The State Library of Århus has played a special role in this area as a "higher center" for the public libraries (*7*). This cooperation from the research libraries has been essential for the functioning of the public libraries but it has long been necessary to relieve the research libraries of this burden. Consequently, the state is emphasizing the necessity for the central libraries to become self-supporting to a far greater extent than they have been.

SWEDEN

In Sweden the county libraries are the main coordinating unit in the public library system and the backbone of the interlibrary lending system. The county libraries in Sweden were established by law in 1930, but it was not until the 1950s that they began to really function as the 1930 law intended. The main element which retarded their development was a lack of money. These libraries were not eligible for state grants to carry out their role as county libraries until 1947.

Sweden is divided not only into municipalities, but also into 25 administrative regional units: the capital of Stockholm and 24 counties. In each county there is a county library whose duty it is to assist the local libraries in their work. The county libraries have a twofold task: they serve both their home town and their county (*8*). Four of these county libraries are managed by the state and 20 by the municipal authorities, but even the state libraries receive large municipal subsidies.

The county libraries provide individuals and libraries within their areas with

books free of charge. Most of them serve the local libraries within their jurisdiction several times a year by bookmobiles or book boats whereby local librarians and their borrowers can select books, which may be kept for circulation by the library for 4 to 6 months (*9*). The county libraries also guide the smaller local libraries, both communal and study circle, in book selection, reference, and other technical areas. Until 1965 the county librarian was also supposed to inspect the local libraries in municipalities of less than 10,000 inhabitants, and his aims in performing this task were to stimulate and help these libraries provide better service. Since 1965 county librarians have no longer been the formal supervisors of the local libraries. They must, however, continue to follow library development in their counties and report to the library advisers on the library situation in their county.

The county libraries are also the cornerstone of the Swedish interlibrary loan system. The county library is the library that the local library must contact first if it does not have the material that a patron has requested. It is the responsibility of the local library to provide the basic library needs of its constituency and to collect local history materials. The county library should collect those materials needed by the local libraries and serve as a center of materials that are less frequently needed.

In the late 1960s the county libraries began to participate in the ABC Plan, which added another dimension to the services provided by the county libraries and to the area of interlibrary loan. The plan gives each county library the responsibility for acquiring materials and providing bibliographical information about a specific subject area. Although this plan is operating only on a cooperative basis, it does give the county libraries a starting point when attempting to locate specialized materials.

In 1962 another level was added to the interlibrary loan pyramid and this was the first regional interlibrary loan center at Malmö. By 1968 three regional interlibrary loan centers existed, in Stockholm, Umeå, and Malmö. These centers receive special state grants and are responsible for providing the county libraries in their region with the specialized literature which the county libraries do not find it necessary to acquire or cannot provide for the local libraries. These interlibrary loan centers were introduced into the public library interlibrary loan network to relieve the university and research libraries of the heavy burden of providing specialized materials for the public libraries of Sweden.

The public library interlibrary loan network works in the following fashion. A patron requests an item from the local public library. If the local library cannot supply the item, the request is sent to the county library. The county library will either supply the item from its collection or, if it cannot do so, it will send the request to another county library or to the regional interlibrary loan center. The regional interlibrary loan center will either fulfill the request from its collection or send the request to another regional interlibrary loan center, a university or research library, or a foreign library. Although the public libraries are not required to use the system in this manner, they are encouraged to do so because it provides the greatest possibility for having the request filled and because it helps in relieving the larger libraries of the great interlibrary loan burden they were bearing.

NORWAY

The central library system was inaugurated throughout most of Norway under the direction of Arne Kildal of the State Library Office, during the 1930s. It was not, however, until the Public and School Libraries Act of 1949 that the municipalities were required to set up public libraries and to fund them. This law also, for the first time, made provision for state grants for county library work in the counties. Both of these provisions were extremely important for the development of the central library system in Norway, because it was the larger municipal libraries which would function as the central library, and without state aid the central libraries had no real incentive to provide the services required of them in their role as central libraries.

There are 19 central libraries in Norway, which supplement and augment the collections of the local libraries. The area served by the central libraries usually corresponds to the area of a county, but in some cases the area is so large that one county is divided between two central libraries. The role of the central library is allotted to a public library which is already well developed. The district librarian's role is to assist the public and school libraries with advice on library matters—technicalities, questions of management, problems concerning library facilities, book selection, etc.—and to report to the State Library Directorate (*10*). The county libraries may also operate bookmobiles and/or book boats in their districts.

The central libraries are the backbone of the interlibrary lending system which supports the Norwegian public libraries, but they cannot play as strong a role or provide as strong services as the central libraries of Denmark and Sweden because many of them have only existed since the 1960s and because they do not have strong collections. In Norway public library collections are generally confined to fiction and general works up to a high school level, although the bigger public libraries do offer a wider selection, including some foreign fiction and nonfiction at post–high school levels. Consequently, although the central library collections do offer a wider range of materials, they often fall short in the areas of foreign fiction, foreign nonfiction, and Norwegian specialized work (*11*).

The public library interlibrary lending network in Norway is just emerging and therefore is not as strong or as greatly developed as those of Denmark and Sweden. The rule is that orders for the books required by the local libraries shall be channelled via the county libraries. If the county library cannot supply the material it will try to locate it in another county library or in a special or research library. Studies in Norway show that most of the works borrowed by county libraries come from the special and research libraries and from the Oslo Public Library, the Deichmanske Public Library. The majority of loans to the county libraries come from these sources, and of them the University of Oslo Library is the one which bears the heaviest burden (*12*). In order to relieve the University of Oslo Library of some of this burden and to facilitate the filling of interlibrary loans for public libraries, the State Library Directorate has contracted with the Deichmanske Library to act as a national lending center for the Norwegian public libraries. In addition, a plan is being implemented whereby each county library will endeavor to

develop an in-depth collection in a particular subject area. With the help of these measures the Norwegian public interlibrary loan network is gradually becoming less dependent on the special and research libraries.

FINLAND

The realization of the regional central library idea was very slow in developing in Finland and it was not until the Library Act of 1961 that funds were provided for that purpose. Finnish central libraries are municipal libraries which receive a special amount of state aid to undertake special functions, such as sending interlibrary loans to public libraries in their area. In addition, the central libraries assist the local libraries in acquiring literature for study, research, and occupational and other special purposes. Cooperation with the central libraries and the university and research libraries has been good. Although interlibrary lending is an important element in Finnish public library service, the late development of the central libraries has meant that Finland does not have the sophisticated interlibrary loan networks of Denmark and Sweden.

Library Service Bureaus

The library service bureaus of Sweden, Denmark, Norway, and Finland are unique to these Scandinavian countries. Because the public library systems in Scandinavia are well developed and use common library techniques, and because their library materials are cataloged and classified using common rules, it has been possible for the libraries of each of the countries to cooperate in the establishment of independent library bureaus to provide high quality services and products at lower price levels because of the economies of scale. Very few of the libraries in each of these countries are large enough to purchase enough supplies or books to give them good discounts, yet by cooperating and purchasing through the library bureaus they can obtain high quality materials at lower prices.

The Scandinavian library bureaus have been established as nonprofit organizations or companies to provide libraries with printed catalog cards, bibliographical services, publicity materials, library accessories and furniture, and collective binding. Of all the Scandinavian library service bureaus, the Swedish organization, Bibliotekstjänst, supplies libraries with the greatest range of services and facilities (*12*).

Bibliotekstjänst AB—Btj [Library Service Company]—is the successor of Bibliotekensförsäljningscentral [Library Supply Center], which was established in 1936 by the Swedish Library Association. The transformation of the latter agency into Bibliotekstjänst came about following a government inquiry into the future of Swedish libraries in 1949. This report, as one of its recommendations, indicated the need for a strong central organization to provide services for libraries. As a result of this recommendation the Swedish Library Association, with the assistance of the library section of the National Board of Education, set up Bibliotekstjänst in

1951 as a cooperative. In 1961 it was changed to a limited company with the Swedish Library Association owning all the shares. In its initial organizational stages, Btj received state aid, but it now receives state grants only for special projects such as its indexing work. However, it can request state aid for experimental work or new projects. Its main income comes from the sales of its many services and products, and although it is run on a strictly commercial basis all profits are reinvested in the organization to help further development.

Bibliotekstjänst is organized into a number of different departments and sections. Among these are included Collective Binding, Audiovisual, Publishing, Catalog, Equipment and Materials, Printing, Electronic Data Processing, and Customer Service. Through these departments Bibliotekstjänst is constantly in contact with the libraries and librarians in the field to be able to provide the latest services and materials needed. To this end, Bibliotekstjänst has recently added the departments dealing with audiovisual materials and electronic data processing.

In addition to evaluating a large proportion of the Swedish book production each year, the library bureau purchases the materials, catalogs them, processes them, and sends them to libraries at a reduced rate. Although the collective binding and cataloging services provided the company with 73% of its income in 1973, one of the library bureau's major services is publishing indexes and journals for Swedish libraries. *Svenska tidningsartiklar* and *Svenska tidskriftsartiklar* are monthly indexes to the Swedish newspapers and periodicals. Since neither of these indexes can support itself financially, Btj receives a grant from the special state aid fund at the disposal of the library advisers for projects of this type. Btj also publishes *Utländska nyförvärv till storre svenska folkbibliotek*, the annual union catalog of foreign acquisitions by larger Swedish public libraries; *Biblioteksbladet*, the official journal of the Swedish Library Association; and many other annual booklists or reading guides.

Like the Swedish library service bureau, the Danish organization, Bibliotekscentralen, has had a long history of service to Danish libraries. Bibliotekscentralen was established in 1939 and at that time was called Folkebibliotekernes Bibliografiske Kontor—FBK [The Bibliographical Office for Public Libraries]. The original Danish library service bureau was set up with the assistance of the special fund created by withholding 2½% from the state aid and administered by the State Inspectorate. Initially the library service bureau only provided centralized cataloging and catalog cards and standard printed catalogs and booklists, but over the years it has expanded its services and products. In 1949 FBK was first enlarged to provide collective binding services through its Inbindingscentralen. In 1954 it started to cooperate in the field of bibliography with the research and other nonpublic libraries, and to reflect this widening of its appeal FBK changed its purely public library title to Danish Bibliografisk Kontor—DBK [Danish Bibliographic Office]. In 1962 the services of DBK were expanded to include a department for library equipment, furniture, and supplies, and to better reflect its wide range of services and products its name was changed to Bibliotekscentralen [The Library Center].

The activities of Biblioteksentralen include centralized cataloging, central bookbinding, periodical and newspaper indexing, standard printed catalogs, cooperative publicity, the publication of library manuals, and the supply of library furniture, equipment, and materials. Although the services of the Danish library bureau are directed at libraries of all kinds, it is the public libraries which make the most use of them. The Danish library bureau provides many of the same services that the Swedish bureau does. It publishes *Dansk tidsskrift index*, the annual index of Danish periodicals; *Dansk tidsskriftfortegnelse*, the Danish bibliography of periodicals which is published every five years; *Avis-Kronik index*, a monthly newspaper index; and many other standard catalogs, reading guides, and booklists. In addition to these publications, Biblioteksentralen is also responsible for the preparation of the Danish national bibliography, *Dansk bogfortegnelse*.

The basic concept of a library service bureau to provide libraries with well-bound books and cataloging originated in Norway in 1902, with the impetus coming from Haakon Nyhuss, the Norwegian pioneer in the public library movement. As a result of the Library Act of 1902 the Ministry of Church and Education entered into a contract with J. M. Stinersen, an Oslo firm of bookbinders, concerning the binding of books and the sale of material and equipment to libraries. To take care of its dealings with libraries, the firm established a department called Folkeboksamlingenes Ekspedisjon [The Public Library Book Center]. This organization remained a private concern responsible for providing books with solid, standard bindings and some cataloging for public and school libraries until after World War II. In 1950 the Norwegian Parliament agreed to purchase the organization and transform it into a cooperative society with the government, the local counties, and the Norwegian Library Association as owners.

The new cooperative society, A/L Biblioteksentralen [Library Central, Inc.], came into being in 1952 with the purpose of providing libraries with books in a solid binding at a discounted price and of giving bibliographic service to libraries. The library bureau services the Norwegian libraries through its book-ordering, bookbinding, bibliographical, library equipment and furniture, order dispatch, and accounts departments. Although the Norwegian library bureau carries out many of the same services as the Swedish and Danish bureaus, the range of services provided by the Norwegian bureau is not as broad. The Norwegian library service bureau has been greatly hampered by the lack of funds available to the libraries and its future growth is highly dependent on larger local and state grants to the libraries.

The Finnish library bureau has a much more recent origin than the library bureaus in the other Scandinavian countries. In 1950 the Finnish Library Association formed a central library supply agency to provide centralized production and distribution of catalog cards and library materials. The Finnish Library Association's Library Service, as the bureau was called, was charged with furthering the development of the country's libraries, by means of publishing various kinds of literature on libraries and by producing, importing, exporting, and selling library materials and equipment. The Finnish library bureau expanded rapidly and in 1961 it was felt that it could better carry out its goals if it was independent of the Library Association, and so Kirjastopalvelu Oy [Library Services, Inc.] was formed. Kirjastopalvelu is a completely Finnish company with the Library Association as its

major shareholder. The Finnish library bureau prints and sells the catalog cards for the books cataloged by the library section of the National Board of Schools, and sells library equipment, furnishings, and supplies. Although the bureau sells the booklists and guides published by the Finnish Library Association, it does no publishing of its own nor does it do any bookbinding, unlike the other Scandinavian library bureaus.

Library Buildings

Much attention has been paid to library buildings in Scandinavia, especially after the last World War. The achievements in the field are very remarkable indeed, and have been noted throughout the world (*13*). In the early 1950s Finnish library buildings and library premises attracted the attention of the neighboring countries. Then Sweden started building a series of both large and small library buildings, some of which have received world recognition. During recent decades, Denmark and also Norway have built a number of beautiful and practical library premises. These new buildings have been made possible because of increased investments of money from the state and local authorities. In replacing the cramped, worn, and antiquated premises with new library buildings, librarians have tried to meet the demands made by the general public with respect to public environment and the demands made by modern library activities regarding functionality. Assistance in designing and developing plans for library buildings is provided by the State Library Offices and library advisers in each of the countries. In Denmark, standards have been established and published to assist the libraries in planning and erecting new buildings.

The great majority of newly built Scandinavian libraries are very well equipped, both in the scale of premises and in their provisions for different special functions (*14*). More and more of the libraries are including special exhibition, meeting, and theater areas as well as musical and audiovisual facilities. In addition, some of the libraries have included cafés, clubrooms, television-viewing rooms, and children's game rooms in their plans.

Many of the Scandinavian public libraries have received acclaim for their modern, functional, clean-cut exteriors and modern, open, colorful interiors. They have been recognized for the use of light and bright colors in the interior decoration as well as for the display of sophisticated textiles and works of art. Librarians, architects, and children have given full play to their imagination in the planning of story hour accommodations, reading areas, and listening areas. All of these factors have been combined to give the Scandinavian countries some of the most attractive yet functional library buildings.

Authors' Compensation

The Scandinavian countries were the first countries in the world to compensate authors for the use of their books in public libraries. Denmark was the first coun-

try to recognize authors' lending rights. In 1946 an amendment to the Public Libraries Act of 1940 set up a special fund to compensate authors for the public lending of their books through libraries. As a result of this law the Danish Authors' Fund can be paid by the state up to 5% of the amount of the state aid grants given to libraries. The 1964 act increased the total amount available to a sum equal to 6% of the total state subsidies to libraries. It is important to note that this 6% is not taken from the ordinary grants to the public libraries.

The grants to the authors are administered by the fund itself, not by the Library Inspectorate. These grants are made according to the number of volumes in the library collections, not the number of loans. A book that stays on the shelf all year earns an author just as much as one that circulates. Each year the Danish libraries count the number of copies held of books by Danish authors and give the figure to the Authors' Fund. The fund then makes grants to the authors, dependents of deceased authors, and translators.

The compensation of authors in Sweden differs from that in Denmark by awarding the funds on the number of loans. Therefore, the authors whose books are used most receive the most money. Another difference is that the authors' lending rights are not set down by a public libraries act but are special state regulations. In 1954, when compensation to authors began in Sweden, the state agreed to pay 6 öre to the Swedish Authors' Fund for every loan of a Swedish book in copyright. Most authors receive 3 öre per loan up to 50,000 loans; over 50,000 loans the author receives only 1 öre per loan. Authors with less than 500 loans receive nothing. The remainder of the money in the fund is utilized for prizes, pensions, travel and benevolent funds, scholarships, and the like.

The calculations to determine the amount the state will pay the fund is done on a sampling method. The sampling is arranged as fairly as possible and is done from four groups of libraries for 13 weeks each year. From large libraries every tenth loan is recorded; from medium-sized, every fifth loan; and from the smallest library every loan is recorded. About 100 libraries are involved, but these change from time to time. The amount allocated by the state to the fund has changed five times since 1954, and in 1973 the state increased the amount paid to the fund per loan to 10 öre for original Swedish works and 40 öre for reference works.

The Norwegian system of authors' compensation is quite different from those operating in Denmark and Sweden, being more of a benevolent fund than anything else. Although the purpose of the fund is expressly stated as being compensation to living Norwegian authors and widows of Norwegian authors for books borrowed from libraries, it is chiefly concerned with helping young authors and older writers who are in difficult circumstances. The fund was set up by the Public and School Libraries Act of 1955 and is financed from a sum not exceeding 5% of the state grant toward new books in public and school libraries.

The Finnish Parliament passed a separate law in 1961 giving authors compensation for the use of their books in libraries. Under this law, authors and translators receive 5% of the total amount of the state aid given to public libraries annually. This money is used toward the provision of scholarships for authors and as aid to aged and incapacitated authors.

Outreach Programs

In the past few years Scandinavian public libraries have begun to concern themselves with the provision of library services to special groups through outreach activities and with providing cultural events. Many of the library laws and acts have mandated library service to prison inmates, hospitals, and seamen, but libraries are now beginning to realize that they also have a responsibility to physically and mentally handicapped persons, immigrants, and those groups in the community that by reason of their social, economic, and educational circumstances have great difficulty in using libraries. In order to reach these people the Scandinavian public libraries are arranging programs and projects which take the library to these people. In order to reach immigrants and people who do not go to the library, Denmark and Sweden have set up programs which place collections of books at the factories. Although these programs are still on a small scale they have elicited a great deal of interest among the factory workers and among librarians as well.

Conclusion

The problems of providing culture for their citizens and establishing policy have been addressed by all of the Scandinavian governments during the past several years. Public libraries have been intimately involved in these discussions because of their already established role of providing information to the people. In addition, some of the Scandinavian public libraries have been able to establish themselves as cultural centers by providing such programs as concerts, dramatic performances, meetings with authors and artists, film performances, art exhibitions, and topical debates. In sponsoring these programs the libraries are provided with an opportunity to provide information and artistic messages over and beyond those found just in books, and they can come in contact with people who are more disposed toward direct experience than reading. In planning cultural activities the libraries are not trying to usurp the other cultural activities in their geographic area but rather to supplement, coordinate, and support such activities and make them available to a wider audience than ever before.

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PATRICIA OYLER

CONTEMPORARY LIBRARIES IN THE FAR EAST*

Introduction

Before one can discuss the public libraries and library development in the Far East and the present status of library services in that geographical area, it is necessary to make it clear precisely which region of Asia is being referred to by the term "Far East" in this article.

While the State Department of the United States may consider, in the strict sense, that the Far East includes China, Japan, Korea, and Eastern Siberia, in this article, the term Far East is to be extended to also include Burma, Indonesia, Khmer (formerly Cambodia), Malaysia, Mongolia, the People's Democratic Republic of Laos, the Philippines, Singapore, Thailand, Tibet, Vietnam, and smaller political units such as Hong Kong. As is obvious from this listing of countries, several are those from which information is difficult to obtain. Therefore, only those countries from which sufficient and relevant data regarding public library developments are available are discussed in this article.

It is necessary to keep in mind that the Far East, as a whole, has changed greatly since the beginning of this century. It had little industry and little role in world affairs. Today, some Far Eastern nations are more industrialized than some Western countries and are highly active in various world affairs. Because of these substantial changes, historical information on the public library developments in the Far East should be useful. Furthermore, it is worth noting that the countries in the Far East vary greatly in geography, in historical background, in the degree of industrialization, in the political system adopted, etc. It is obviously difficult to generalize on public library development in the Far East and separate discussion on each country is called for.

Burma

Although the story of Burmese libraries can be traced back to the 11th century, the early libraries were mainly established for the use of kings, nobles, scholars, and monks. As to the public libraries, the first one, in the modern sense, was established in 1883 by the chief commissioner of British Burma, Charles Bernard. Most of the books were contributed by both Burmese and British officials. The library

* The Bibliography for this section begins on page 388.

was called the Bernard Free Public Library, which later was developed to be Burma's National Library.

Despite the establishment of the first public library in 1883, for years the public library services were inadequate and scarce. A national plan for public libraries was proposed by a Burmese librarian in 1940 after a number of public reading rooms were set up in towns other than Rangoon. However, shortly after that the wars broke out; they not only interrupted any possible consideration of the proposed 1940 national plan but also caused great damage to the few existing library facilities available at that time. About two-thirds of the valued materials in the Bernard Public Library were destroyed. Thus, chaos and difficulties continued for quite some time. During the postwar period, the Burmese librarians faced various problems of library development, such as the lack of adequate funding for library collections and facilities, the lack of proper library personnel training, etc. But, as in some other developing countries in the Far East, one of the most serious problems has been the problem of illiteracy, which was partially caused by the difficult Burmese language. Various campaigns against illiteracy were introduced by the government in the 1950s, and some library efforts in these areas were noticeable. In 1952 the National Library was established with 20,000 volumes originally belonging to the Bernard Public Library, and both the British Council and the United States Information Service (USIS) established libraries in Rangoon and branches in other cities in the 1950s.

Unfortunately, with the take-over of the government by the Army and Revolutionary Socialism in 1962, all aid from private and foreign sources was stopped and both the British Council and USIS closed their libraries in Burma. Two years after that (1964), the Revolutionary Government, fortunately, also started its fight against illiteracy and, thus, lending libraries with small collections of books were established in some 80 towns around that time. Various school libraries were also set up, and academic libraries, such as that at the University of Rangoon, were expanded.

Since then, a number of individual public libraries have shown growth in collection sizes, activities, and facilities. For example, shortly after 1964 (in 1967), the National Library reported that it had 90,000 registered readers and the Library of the Sarpay Beikman Institute in Rangoon reported in 1968 that its circulation ran over 100,000 volumes.

At the time of this writing, no updated information regarding the current status of public libraries in Burma was readily available. It is, however, fair to speculate that the Burmese public libraries are still at the developing stage. As in many developing countries in the Far East, the Burmese public libraries continue to be short of adequate financial support and trained personnel, and lack an overall, well-coordinated national plan.

China

See the sections on People's Republic of China, page 371, and Republic of China, page 378.

Hong Kong

Hong Kong, a British crown colony on the south coast of China, includes more than 235 islands with 403 square miles of land. Victoria, the capital, is on the north side of Hong Kong Island. Kowloon is the colony's largest urban area, and the colony's largest region is called New Territories, which lies behind Kowloon on the coast of China.

In this geographical area, it was recorded that there were 215 libraries in 1962. However, the 1972 library survey in Hong Kong showed that in that 10 years, the number of libraries had increased and the size of collections had also grown considerably. In 1972 about 300 libraries were reported, including public, school, college and university, government, special, and other types. Since then, various new libraries have continued to be built. Besides new buildings and enlarged library collections, many libraries have also begun to acquire audiovisual and other nonprint materials.

Of the some 300 libraries in Hong Kong, 60 are open to the public, but not all of them are funded by public funds. These 60 public libraries can be grouped into the following categories.

URBAN COUNCIL PUBLIC LIBRARIES

These make up the Hong Kong public library system, which was opened in 1962 with headquarters in the City Hall. This system consists of various branch libraries, such as the Waterloo Road Branch Library (1965), the Aberdeen Pok Fu Lam Branch Library (1970), the Ping Shek Branch Library (1972), the Aberdeen Branch Library (1974), and others. It also runs the Tsuen Wan Public Library, which is the Hong Kong government's first attempt to provide public library services to the residents in the New Territories.

The Urban Council Public Libraries have a total book collection of about 540,000 volumes, about two-thirds being in Chinese.

The current periodical subscriptions are about 1,000 titles, and the nonprint collection consists of over 3,000 reels of microfilms of the rare books in the National Library of Peking and back issues of selected early Chinese and English newspapers of Hong Kong and other areas, and 4,000 gramophone records.

All Urban Council Public Libraries have been actively used by a total of about 444,000 registered users since the opening of the City Hall Library. Each of these libraries provides lending and reference services, and each consists of an adult lending section, a junior section, a students' reading room, and a newspaper and periodical room. Each library also furnishes children's story hours, book exhibits, and library tours.

LIBRARIES OF CULTURAL ORGANIZATIONS

This group of libraries includes the following:

The two libraries of the British Council (one on each side of the harbor) have

over 35,000 English books and over 230 periodicals and serve over 8,000 members, most of whom are students.

The American Library of the U.S. Information Service maintains a collection of about 9,000 current American books and over 110 periodicals. Besides the regular reference and circulation services the library also provides a books-by-mail program which makes it possible for its users to receive interesting books by mail.

The libraries of other countries' cultural offices also provide reference and borrowing facilities to interested users from the public.

OTHER PUBLIC LIBRARIES

Certain libraries sponsored by various associations or governmental departments are open to a specific sector of the public. For example, the Boys' and Girls' Clubs Association operates 29 libraries for children and young people; the Caritas Center Libraries, seven in all, maintain a total book collection of over 63,000 volumes and serve over 11,000 members; and the libraries set up by the Education Department are mostly adult education and recreation center libraries.

Although the larger libraries in Hong Kong have had fairly active interlibrary loan (ILL) activity for a number of years, the ILL practice has not been popular among public libraries. With the progress in the compilation of a Union Catalog of Periodicals in Hong Kong, it is expected that the public libraries will be more involved in library cooperation and resource sharing in the near future.

Indonesia

To the date of this writing, little pertinent material was available to the writer, thus the discussion shall be brief.

Indonesia is an economically underdeveloped country with little manufacturing. Farming is the chief industry. The country ranks fifth in population in the world, and as of 1975 the population was estimated to be about 129 million, with 81% rural and 19% urban.

The illiteracy rate has been high in Indonesia. In 1945 less than 10% of the population could read and write. The government has been consciously promoting literacy, thus, most of the people between the ages of 15 and 45 can read and write today. But illiteracy is still a serious problem among people older than 45.

With this background, it is sufficient for us to understand the current priorities in Indonesian public library development:

1. To cultivate the public's reading habit and willingness to use the libraries: In this developing stage, the real problem is that there are too few public libraries, but still too many are not being used (though the number of public libraries is insufficient from outsiders' points of view).
2. To facilitate the qualified training of librarians: This is essential if various programs are to be introduced to the public in order to encourage library use.
3. To promote library services to school children from the ages of 5 to 13 years. This may mean that in 10 years, these children will become the active young adult users of the libraries.

Thus, while the basic role of the public library is constant among both developed and developing countries, we see the great difference between the public library system in developed countries, such as Japan, and in developing countries, such as Indonesia, in two specific areas. They are the requirements of the readers and the library resources.

In Indonesia, the general public needs to be encouraged and cultivated to use the libraries. To achieve that, all efforts toward the promotion of literacy and the stimulation of interest in reading are helpful. In recent years, Makassar Public Library has expanded its extension services by providing film shows, music and language courses, and laboratories. The bookmobiles are used to bring library services to outlying areas with no library facilities. In October 1973 the Makassar Public Library offered English-language courses by a volunteer teacher, and also offered Dutch and French courses. In late 1974 it started providing library services to children, and there was a special exhibition of children's books.

It is hoped that the general public in Indonesia can first be cultivated to use libraries more and to demand better library services, then the Indonesian librarians can start gaining support from both the public and the government to build and to strengthen their library resources.

Japan

THE HISTORY OF PUBLIC LIBRARIES IN JAPAN

The history of public libraries in Japan started in the eighth century when a library was established by the government for the purpose of preservation of valuable books, documents, and Buddhist images. But the real modern libraries began about 100 years ago when modern educational systems were established (1872) and an elementary education became compulsory. A central library was established in Tokyo by the Educational Department and this library later became the Imperial Library and then the National Diet Library. The Japan Library Association (JLA) was founded in 1892 and the Imperial Ordinance of the public library was enacted in 1899. Thus, the public libraries have increased greatly in number in prefectures, cities, towns, and villages.

However, during World War II many libraries were either demolished or badly damaged, and no library construction and development was possible then. But, after the war, the new library law was enacted, and under the leadership of the National Diet Library, a big-scale construction operation was begun. Many public libraries were either built or reconstructed in all parts of the country and the growth and development of public libraries has been rapid.

THE CURRENT STATUS OF PUBLIC LIBRARIES

With the metropolitan centers growing in size and complexity along with the rapid growth of the urban population, and in keeping with the increase in the amount

of printed and other materials produced in Japan and elsewhere, the growth of public libraries in Japanese cities has been particularly obvious.

Japan is divided into 46 prefectures and there are 564 cities and 2,738 towns and villages. Although the total population is about 110 million, almost 11.2 million are inhabitants of Tokyo Metropolitan, the largest city in the world. Therefore, in 1974, it was reported that there were over 100 libraries in Tokyo alone. The majority of Tokyo's libraries are established and operated by 64 municipalities, some of which are wards, each with city-like status.

Besides the municipal libraries in Tokyo, metropolitan libraries are operated in Tachikawa, Ōme, and Hachiōji, all cities within the Tokyo Metropolitan area. But the most famous one is the Tokyo Metropolitan Hibiya Library, which was first opened to the public at its present site in 1908. The library had a book collection of about 500,000 volumes and seating for 857 persons in 1970.

The importance and role of the famed Hibiya Library was somewhat diminished when the five-story and 1,200-seat Metropolitan Central Library opened its doors in January of 1973. The Hibiya Library became one of the Central Library's three major divisions. The Central Library's role is to serve as a library for libraries, and to act as the metropolitan interlibrary loan center, while Hibiya provides direct services to users. The introduction of this type of new superlibrary makes it obvious that Japan has a very sophisticated metropolitan city public library system.

Moving our attention from the capital of the nation, Tokyo, the general overview of public library development in Japan is clearly revealed by the 1975 statistics in Table 1.

According to the actual library law, every local government is not required to build a library. Thus, many smaller towns and villages do not have public library facilities. According to the 1974 statistics supplied by the Japan Library Association (JLA), the percentage of unbuilt public libraries is 0% in prefectures, 28.5% in cities, and 50% in towns and villages. This is a considerable improvement since, in 1970 it was reported that the percentage of unbuilt public libraries was 40% in cities and 90% in towns and villages.

The rapid growth of Japanese public libraries is also demonstrated in the comparative statistics of both Tables 1 and 2. The growth is particularly obvious in

TABLE 1

Number of Public Libraries in Japan

Type of public library	Main and branch libraries		Libraries with children's reading rooms, 1975	Libraries with bookmobiles, 1975
	1975	1974		
Prefecture	77	76	48	79
City, ward	682	641	507	231
Town, village	258	241	70	29
Private	31	31	10	—
Total	1,048	989	635	339

TABLE 2
Selected Statistics on Public Libraries in Japan

	1975	1971	1962
Number of library employees			
Trained librarians	2,797		
Library technicians	392		
Other	3,726		
Part-time staff	876		
Total	7,791	5,954	4,374
Library book collection			
Total number of volumes	38,849,000		
Percent of children's books	14.0		
Annual addition	4,148,000		
Number of users			
Total number of registered users	3,757,000	2,480,000	700,000
Percent of juvenile users	43.3		
Total number of group users	28,498		
Volume of circulation			
Total number of individual circulation	50,795,000	32,630,000	8,810,000
Percent of circulation to children	48.0		
Total number of group circulation	8,271,000		

cities, as discussed earlier. Table 1 shows that in the year of 1975, 59 new libraries were added, but of these 59, 41 (or 70%) were established in cities and wards.

The detailed statistics supplied by the JLA also show a phenomenal increase, over the years, of the high use rate of public libraries in cities. The smaller town and village libraries seem to have been more influenced by inflation. Their circulation rates have not shown sharp increments, due to the limitation of collections and activities. Yet, in the cities, the public library activities are really booming. For example, Table 3 shows that city public libraries consistently had higher percentages of increments in all categories listed.

Although the annual public library budgets have also increased substantially over the years, it is obvious from Table 3 that the number of registered users and the

TABLE 3
The Growth of City Public Libraries (1974 over 1973)

	Percent of increase in city public libraries	Percent of increase in all public libraries
Number of libraries	5.8	4.1
Library employees	14.7	9.7
Registered users	16.9	11.2
Circulation	29.5	25.7

services demanded by them of the public libraries seem to have increased at a much faster rate than the number of libraries and their staff.

FACILITIES OF PUBLIC LIBRARIES

All public libraries in Japan observe the public library law which states clearly that every library founded by a local government should be admission-free, and that "a library collects, settles and preserves books, documents and other necessary materials and offers them for people's study, research, recreation and education."

Collections

The majority of the materials collected are in Japanese, and in 1975 children's books constituted 14% of the total book collections. From the detailed statistics supplied by JLA, one is impressed to see that consistently in recent years, out of the total budget for library materials, almost 5% was spent for audiovisual and nonprint materials, which includes records, films, tapes, photographs, picture-cards, etc. Newspapers, magazines, and other periodicals consume about 8–9% of the total annual material budget.

Although, as shown in Table 2, in 1975 the total percentage of children's books was only about 14% of the total public library book collection in Japan, the percentage of children's books of each year's annual new acquisitions should be much higher due to the high use of public libraries by Japanese children. In fact, since the late 1960s, the change has been so drastic that in certain public libraries, such as the Hino City Library in the western suburbs of Tokyo, children's books consume a large portion (almost half) of the book budget. One branch library of the Hino City Library stocks nothing but children's books.

Besides the regular public libraries in prefectures, cities, towns, and villages, the special collections in large metropolitan libraries are worth noting. For example, the Hibiya Library, as of March 31, 1970, had more than 502,000 volumes of books, of which many are special rare collections, such as the Tokyo Collection, Kaga Collection (rare books of literary works of the Edo Era), etc. It subscribes to 2,600 periodical publications and maintains a substantial number of films, musical recordings, tape recordings, etc. This rich collection is used by over 2,000 people daily.

As another side topic related to collection development in public libraries, it should be pointed out that Japanese librarians are very sensitive about censorship issues. They feel strongly the public privileges and rights related to reading, and are very firm in their stand for freedom to read.

Facilities

Today, Japanese public libraries generally have excellent reading rooms. According to the nature and scale of a library, reading rooms may be subdivided into spaces for children and mothers, businessmen, men and women (adults), young

adults (students), etc.; or into subject reading rooms, such as social sciences, humanities, sciences, literature and language, etc.; or into spaces for special types of materials, such as audiovisual materials, newspapers, local materials, etc. Table 1 shows that in 1975, 73% of the prefecture, city, and ward public libraries had either separate children's reading rooms or corners, and many of these libraries with children's reading spaces also have bookmobiles.

Many public libraries have modern facilities; many also provide lecture halls, discussion rooms, etc. Libraries such as the modern Hibiya Library in Tokyo, which has a seating capacity of 870, not only have all the facilities mentioned above, but also have special reading rooms for the blind and handicapped.

SERVICES OF PUBLIC LIBRARIES

Circulation

Every public library lends out books to its users. Some have circulating cars which go periodically to remote towns and villages with a couple of thousand books. All prefectural libraries and some city and town libraries have bookmobile services. Japan is a reading nation and boasts one of the highest literacy rates in the world. As a result, there are already a great many book readers, with or without the public libraries. The 1975 statistics (in Table 2) show that 3.5% of the total population were registered public library users. Of these registered users, on the average, each checked out almost 14 books in 1975. It is clear that the Japanese people are entering a period of large-scale loan. But another important fact is that 43.3% of these registered users were children. It is expected that, due to the sharp increase in both output of high quality children's books and book cost, and because of the reading habits of Japanese people and the encouragements from Japanese parents, more use of public libraries by Japanese children can be foreseen. Because of this, more and more sophisticated library services to children can also be expected.

Reference

The reference service is generally recognized as one of the important functions of a public library. Thus, special reading rooms usually are available for users' convenience. There is also considerable cooperation among libraries, particularly among metropolitan, prefectural, and city libraries. As mentioned earlier, the Metropolitan Central Library's role is to serve as a library for libraries, or an interlibrary loan center. It gives direct service to other municipal libraries through loan of materials and through provision of information and reference services. It also handles both telephone and mail inquiries from other libraries.

The Japanese people are generally well exposed to nonprint materials. Many public libraries provide their users impressive services in the use of various audiovisual materials by lending both AV equipment and materials to registered individuals and groups.

Cultural Activities

Many public libraries hold reading classes, prefectural lectures, cultural film shows, record concerts, informal film shows, book fairs and exhibits, and civic group parties, etc.

Services to Children

As discussed earlier, due to the phenomenal increase of library use by children and students, many public libraries are expanding their services to children. More funds are allocated to children's materials, more reading rooms are assigned, and more programs are provided. Many libraries provide story-telling hours, puppet shows, book exhibits, etc.

SUMMARY

In summary, it is necessary to point out that, in addition to over 1,000 public libraries in Japan, there are over 1,300 academic libraries with 56 million books. There are over 22,000 primary schools, 11,000 junior high schools, and 4,000 senior high schools in Japan and each school must have a library according to the 1953 School Library Law. Moreover, with the advanced degree of industrialization in Japan it is not difficult to contemplate the sophistication of the thousands of special libraries in government offices, research centers, laboratories, companies, etc. Thus, it is fair to say that Japan is probably one of the most developed countries in the world in terms of public library development. Most people have already learned to use libraries. The Japanese people have cultivated a habit of reading and know how to use their libraries, whether public or not. Yet, the Japanese public libraries are not without problems. Some selected considerations deserve more attention, and they are:

1. Library services need to be expanded more to small towns and villages.
2. The administrative structure of public libraries: The public libraries are controlled by the prefectural governor and assembly but administered by the Board of Education.
3. The basic educational requirements of professional librarians and the shortage of trained personnel.
4. Although the school and public libraries share the same clientele as far as schoolchildren are concerned, the public libraries seem to be quite distinct and unrelated to the public schools.
5. There is a need for a well-coordinated, total national library system which would include public libraries and all other types of libraries.

Korea

See under Republic of Korea, page 381.

Malaysia

Malaysia is a country in Southeast Asia. Like many of its neighbors, Malaysia is a relatively new nation made up of a variety of racial groups with various languages. Malaysia covers the southern part of the Malay Peninsula and most of the northern part of the island of Borneo. The region on the Malay Peninsula is West Malaysia, while the region on Borneo is East Malaysia. The two regions are separated by about 400 miles of the South China Sea. More than 75% of the people live in West Malaysia.

The 1975 estimated population was about 11.8 million with a distribution of 54% rural and 46% urban. The ethnic composition is estimated to be about 44% Malay, 36% Chinese, and 10% Indian and Pakistani. The majority of Malays are Moslems and they make up the most powerful group in the country's politics, while the Chinese control much of the country's economy. Most Indians are Hindus, most of whom work on plantations. The conflicts between the Malay and Chinese communities are constant and they affect all aspects of life in Malaysia.

Although the official language of the country is that of the Malays, it is not commonly used by the Indians and Chinese. Thus, English becomes the commonly used official language. As to the education system, there is compulsory education of 6 years duration for all children.

Malaysia gained independence from the British in 1957, and in 1963 the Federation of Malaysia was formed with 13 states. In 1965 Singapore left the federation to become a separate country.

With this background information on the country in mind, it seems appropriate to comment on some of the historical public library developments in Malaysia in the last 25 years.

The promotion of public library systems began quite a few years before independence. In 1950 the British Council's chief regional adviser conducted a survey of existing library facilities and provided a set of recommendations for a coordinated public library system. Some of these recommendations were used by the British Council in their library in Kuala Lumpur, but no official governmental attention was given to public library development.

During the period between 1950 and the late 1960s, the need for a modern public library system continued to be voiced by various Malaysian librarians, who also in March 1955 established the first professional library association under the name Malayan Library Group. This group changed over the years, both its name and its organizational structure, and at the present is divided into Persatuan Perpustakaan Malaysia—PPM [Library Association of Malaysia]—and Persatuan Perpustakaan Singapura—PPS [Library Association of Singapore].

In 1956 the Malayan Library Group prepared a memorandum, "Public Library Service for the Federation of Malaya," which demonstrated the need for a national public library system and proposed a detailed program of development. Although this proposal was presented about the same time that the National Library was established in 1958 in Singapore with the passage of the National Library Ordinance, the Malaysian public librarians unfortunately were not as successful in

receiving the government's attention. Thus, up to the mid-1960s, the establishment of public libraries in Malaysia was haphazard and mostly without government funding. Most of the new libraries were small, with book collections donated by the philanthropic groups. It was estimated that in 1961 there were about 150 small libraries or reading rooms for the Chinese reading population and 80 for Malay readers, with most collection holdings of about 1,000 volumes. In 1962, even in Kuala Lumpur, the largest library for public use was a subscription library—the Kuala Lumpur Book Club, which had a membership of over 3,500. The USIS and British Council libraries were the only libraries in that city providing free library services.

In October of 1967 members of the PPM and PPS held a Joint Conference on Public Library Development and a set of 20 recommendations for public library development was put forth. The Joint Conference called for the services of an experienced Asian librarian "to draw up a blueprint for overall public library development in Malaysia, especially West Malaysia." With the assistance of the UNESCO National Commission for Malaysia and the financial support of the Asia Foundation, the PPM undertook this special project in 1968 and appointed Mrs. Hedwig Anuar, the director of the Singapore National Library, as the director of the project. Mrs. Anuar's well-known report, *Blueprint for Public Library Development in Malaysia,* was published in the same year and this became the most important document in the history of Malaysian public library development.

The project, as stated by Mrs. Anuar, was to do the following:

1. To undertake a survey of Malaysia in relation to public library needs.
2. To draft legislation to set up appropriate library authority or authorities responsible for the development of public library services.
3. To prepare a blueprint for the establishment and development of public libraries, together with draft estimates for the first 5 years, for presentation to the Federal Government of Malaysia.
4. To make any other recommendations relevant to the development of public libraries in Malaysia.

The *Blueprint* attempted to draw up minimum national standards for Malaysian public libraries which could be used to assess existing services and serve as guidelines for evaluation and action, and for setting new goals for future public libraries.

Despite various difficulties encountered during the survey period, the *Blueprint* gave a detailed presentation of the public library situation in Malaysia at that time. The information provided included discussions on book collection, services, staff, the organization and acquisition of materials, buildings, furniture and equipment, finance, legislation, structure, and government. Mrs. Anuar noted in the *Blueprint* that in the whole of Malaysia in 1968 there were only three qualified librarians working in the public library field, two in East Malaysia and one in West Malaysia. The *Blueprint* also revealed that in terms of actual library expenditure in each state per head of population—although the Ceylon Meeting advocated a target expenditure for the whole Asian region of an average annual expenditure of 5 U.S. cents (or M15 cents of Malaysian currency)—the average for West Malaysia was M3.66 cents and the average for East Malaysia was M12.13 cents. The low

figure for West Malaysia resulted mainly because there were three states which had no public library service at all at that time.

It was clear from the *Blueprint* that in 1968 the public libraries in Malaysia were unevenly developed. Many rural and sparsely inhabited areas had no library service at all. There were no public library facilities designed and staffed for use by children, in spite of the fact that over 40% of the total population was thought to be under 15 years of age. Many libraries were poorly funded and staffed with poorly trained personnel. They were forced to function without adequate bibliographic tools and without the service of a strong publishing industry.

Keeping in mind these numerous obstacles to public library development in Malaysia, the *Blueprint* recommended that public libraries be established and administered by independent Public Library Corporations on a state basis with the states responsible for the annual recurrent costs. The federal government would be responsible for the capital costs of buildings, equipment, and initial book collections. The *Blueprint* proposed that a National Library be established, which would be responsible for coordination of all public library services and resources. A centralized technical services plan was set up in great detail to advocate a national integrated system for book ordering, processing, and cataloging. In view of the serious shortage of qualified librarians, the *Blueprint* also recommended that a library school for Malaysia be established.

Furthermore, in view of the great need for library services by Malaysian young readers—the children, schoolchildren, and the others just leaving school—the *Blueprint* recommended strongly that top priority should be given to the establishment and development of children's libraries and children's services.

Since 1968 the National Library Committee has accepted the recommendations of the *Blueprint*. Concurrently, several important projects have been undertaken to produce more adequate bibliographic tools for Malaysian librarians. *The Malaysian National Bibliography* was published in 1969. The PPM and PPS have jointly produced several annual issues of *Index to Current Malaysian, Singapore, and Brunei Periodicals*. In 1968 the National Library Committee established a Union Catalog of selected Governmental Department and Statutory Body Libraries. The availability of this Union Catalog has encouraged various cooperative activities such as interlibrary loan and planned acquisitions of publications. The first Five-Year Plan was completed with both improvements in and obstacles to public library development in Malaysia, and the second Five-Year Plan was started with the government's provision of $2.5 million for the construction of the National Library. Thus, although public library development in Malaysia may not be as fast as one may like to witness, the prospects for the future seem to be favorable. It is still a fairly long way toward the ultimate goals set in the *Blueprint:*

1. Promote the national language through provision of national-language books in all public libraries and boost publishing of national-language books.
2. Make available government publications which would enable the ordinary citizen to have a better knowledge and understanding of the workings of government and his own role as a citizen.
3. Provide books for students undertaking part-time and further education courses.

4. Provide technical and commercial information services for towns, business firms, new industries, and existing industries.
5. Support the adult education program in rural areas, particularly for new literates.
6. Promote national integration in Malaysia through the use of the public library by all groups of people, not only to read or to study but also to participate in cultural programs provided by the libraries.
7. Enable people to be better equipped to face the challenge of a rapidly changing world (*Blueprint*, Para. 256, p. 98).

Mongolian People's Republic

In 1966 the country was reported to have more than 1,100 libraries and reading rooms with a total holding of about 5.7 million volumes. Thus, on the average, each inhabitant had about six to seven volumes. It was also reported then that on the average, each library had about 1,670 users.

The most pertinent source of information on Mongolian library development is the following article:

Bayanzul, M., "Bibliotechnoe delo v. Mongol'skoi Narodnoi Respublike za 45 let" [Forty-five Years of Librarianship in the Mongolian People's Republic], *Bibliotekovedenie i bibliografiya za rubezhom*, **26**, 3–14 (1968).

This article revealed that the country has a State Public Library which has 2 million volumes and manuscripts, and that there is a Ministry of Culture network of libraries. This network includes all public libraries serving local, district, and other types of libraries.

People's Republic of China

Prior to the last 3 or 4 years, information in English on public libraries in the People's Republic of China was extremely scarce. One of the most comprehensive treatments of the subject can be found in Julia Wang's study entitled *A Study of the Criteria for Book Selection in Communist China's Public Libraries, 1949–1964*. Among the topics discussed in great detail are: the historical background, the organizational structure, and the objectives and functions of the Chinese Communist public libraries, and the characteristics of their book collections.

Since the first friendly visit of President Nixon to China, there have been several library educators and librarians who have visited the People's Republic of China quite extensively and have shared their impressions and experiences through their publications. Among them, Dr. Josephine Fang's (School of Library Science, Simmons College) publications are specifically worth noting, since her specialized field is "international librarianship." Readers who are interested in the current status of public libraries in the People's Republic of China are specifically referred to her article entitled "People's Republic of China, Libraries in," in Volume 22 of this

encyclopedia. The extensive bibliography at the end of her article is also very helpful.

To facilitate readers' better understanding of the public library development in that country, concise background information is provided in the following discussion.

In the People's Republic of China, public libraries have played important roles in carrying out the revolutionary and political work of the Party. The libraries have been used very effectively to spread and to promote Marxism and Maoism, which are the guidelines of human knowledge, and books and other library collections have been used as media to accomplish the political and economic missions of the revolution and the Communists' ideology. Thus, public libraries have been used heavily to fulfill the function of distribution and promotion of government-controlled and approved information. They have been part of Communist China's important propaganda organs, established according to government policy, administered by governmental agencies, and financed through the governmental budget. Since 1949 they have served the people in general regarding the national socialization movement as the main policy for cultural affairs.

It was reported that the national library system in Mainland China consisted of six components:

1. Public libraries
2. University and school libraries
3. Scientific research libraries
4. Labor union libraries
5. Special libraries
6. Armed forces libraries

Each component has been developed and supervised by a branch of the Central People's Government. The public libraries are under the Ministry of Culture and are the major component of the national library system. The public library network consists of all types of public libraries, from the capital to the basic unit communes and villages, as described in the following:

1. The National Library
   The leading public library in the whole country is naturally the National Library of Peking. It plays an important leadership role in terms of providing nationwide public library services. It also is the only public library responsible for international publication exchange.
2. Provincial libraries
   Governed by the Cultural Bureaus of the provinces, these libraries coordinate the activities of the public libraries in the respective provinces.
3. County libraries
4. Municipal libraries
5. Cultural hall libraries and reading rooms
   These are used greatly by the Party in propagandizing the policies and directives. Materials collected are mainly intended to raise people's political awareness and patriotism, and to provide needed information for production and construction (especially for the peasants and factory workers).
6. Village and/or commune libraries (or reading rooms)

The commune libraries have developed since 1958 together with the people's communes. They are generally guided by county or other public libraries, and organized by the local people and administered by local Party committees. They are the most basic unit in the total public library network.

7. Children's libraries
These are specifically designed for children so that in their young ages, the thoughts and ideology of Communism and Maoism can be introduced to them.

On the whole, the public library system in Mainland China is well developed and controlled by the government. The China State Statistical Bureau in its *Ten Great Years* (Foreign Language Press, Peking, 1960, p. 205) estimated that the number of public libraries had grown rapidly. In 1949 there were 55 public libraries above the county level and 896 cultural hall libraries, while in 1958 there were 922 public libraries above the county level and 2,616 cultural hall libraries. Thus, it is safe to assume that the actual numbers of various types of public libraries now are even more substantial than those stated.

Philippines

The term "public libraries" was used with reference to book service in the Philippines as far back as 1892 although it should probably not be accepted at face value. But, the Philippine Census of 1903 reported that there were 12 public libraries in the Philippine Islands and that they possessed only 4,019 books. These "public libraries" could possibly be those being encouraged by the Ministry of Colonies in 1892.

The Philippine history substantiates the fact that public libraries were used in the 19th century as instruments of public education. The establishment of public libraries was particularly brought to the Philippines when the Americans occupied the country. In 1900 Mrs. Charles Greenleaf formed the American Circulating Library Association in Manila as a memorial to the American servicemen who died in the Philippines. The objective of the association was to provide recreational and informational materials to the American sailors, soldiers, and residents in Manila. Within 1 year, this subscription library had a collection of 10,000 volumes. The American Circulating Library was turned over to the Philippine government in 1901, and the government enacted a law which extended library services to more people in the whole Philippines. Thus, this turnover marked the start of the public library movement in the country. The library, patterned after the American public libraries, was governed by a Board of Trustees, and the collection was doubled in a short time. With the passage of Public Law No. 1935, a provision called for the integration of all libraries belonging to any branch of the Philippine government. Thus, the Philippine Library was created. From 1910 to 1955 the American Circulating Library operated as the Circulating Division of the Philippine Library under the supervision of the Bureau of Education and functioned as a public library which provided the readers of metropolitan Manila with needed materials of all kinds.

In the late 1920s the name of the Philippine Library was changed to the National

Library. Before the enactment of the Municipal Libraries Act, in 1949, the only basis for extension of library facilities was the Revised Administrative Code. Up to 1941 library extension work was the responsibility of the Administrative Division of the National Library. In 1941 it was reported that there were 18 provincial and city libraries all over the Philippines. On July 1, 1941, the Extension Division was created and traveling libraries came into being a few years after that. In 1945 many libraries came into being providing free service, supported by public funds, to all residents of a province, city, municipality, community, or barrio. In 1949 the Municipal Libraries Act became a law, which called for the creation of 200 libraries every year for a period of 5 years. This act was never implemented due to the failure of the Legislature in subsequent years to appropriate the necessary funds. Thus, in 1971, there were fewer than 300 municipal libraries in the Philippines.

THE NATIONAL LIBRARY, ITS EXTENSION DIVISION AND THE PUBLIC LIBRARIES

Generally, a national library and a public library are certainly different in terms of their respective library functions, service, etc. However, the National Library in the Philippines (Figure 1) discharges the dual role of a public library and a national library very effectively. The role of a public library is performed by its Extension Division, while the major functions as a national library are performed

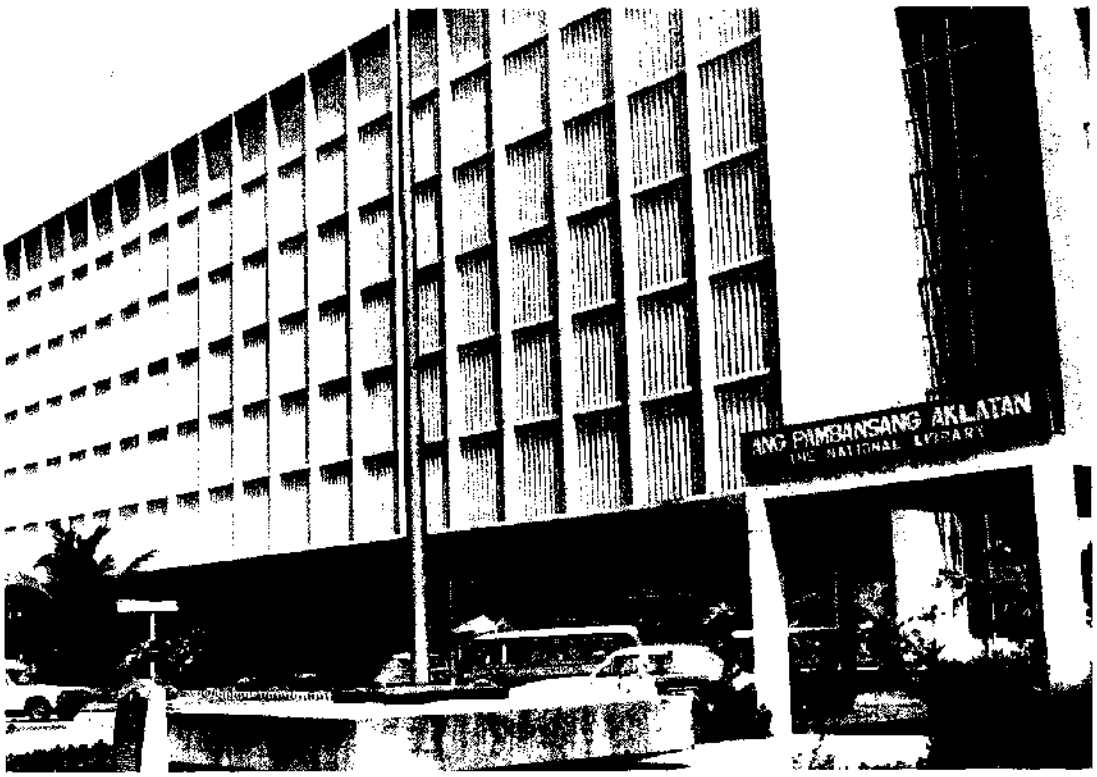

FIGURE 1. *The National Library of the Philippines.*

by other divisions such as the Filipiniana and Asia Division, Bibliography Division, Reference Division, Acquisition Division, Publication Division, Catalog Division, and Public Documents Division (see Figure 2).

It is clear from Figure 2 that the Extension Division performs the public library service of the National Library. It takes charge of the organization and supervision of provincial, city, municipal, barrio, and deposit station libraries all over the country with the purpose to serve all Filipinos regardless of age, religion, political affiliation, or social and economic status. The main objectives of the Extension Division are given as follows:

1. To make the library service in all provincial and far-flung regions responsive to their particular needs.
2. To build within each branch library an information center about the community—its resources, history, people, its customs and traditions, etc.
3. To organize three regional offices to take care of the existing branch libraries as well as those that will be established in the future.
4. To organize a children's collection in each of the branch libraries.
5. To train field librarians by preservice and in-service training programs.
6. To build the branch library collections and to promote library services.

With these objectives in mind, the Extension Division, operating on a budget about one-third of the annual budget of the National Library, has attempted to provide library services to more than 60 provinces, 60 cities, 1,430 towns, and 32,000 barrios. Although funding has been always a problem, the Extension Division has produced improvement and expansion of public library services, as shown by the statistics in Table 4.

In 1967 the 378 extension libraries had a combined collection of over 1 million volumes, and the collection size in 1973/74 was undoubtedly considerably larger. In 1973/74 it was reported that a total of slightly over 3 million readers were served by the 440 extension libraries in operation. During that year, about 3.7 million references were consulted and 1.3 million books were circulated. About two-thirds of the readers were comprised by out-of-school youth.

As stated earlier, pursuant to the provisions of the Municipal Library Act and the Revised Administrative Code, the Extension Division continues to set policies to organize, supervise, and administer provincial, city, municipal, and barrio libraries and deposit stations all over the country. The chief and the library supervisors of the division visit these libraries periodically. They attempt to help local librarians

TABLE 4

Number of Public Libraries Administered by the Extension Division

Year	Provincial libraries	City libraries	Municipal libraries	Barrio libraries	District libraries	Deposit stations	Total
1967	31	16	293	11	0	27	378
1973/74[a]	33	20	291	44	33	19	440

[a] Data were taken from the National Library *Annual Report* for Fiscal Year 1973/74.

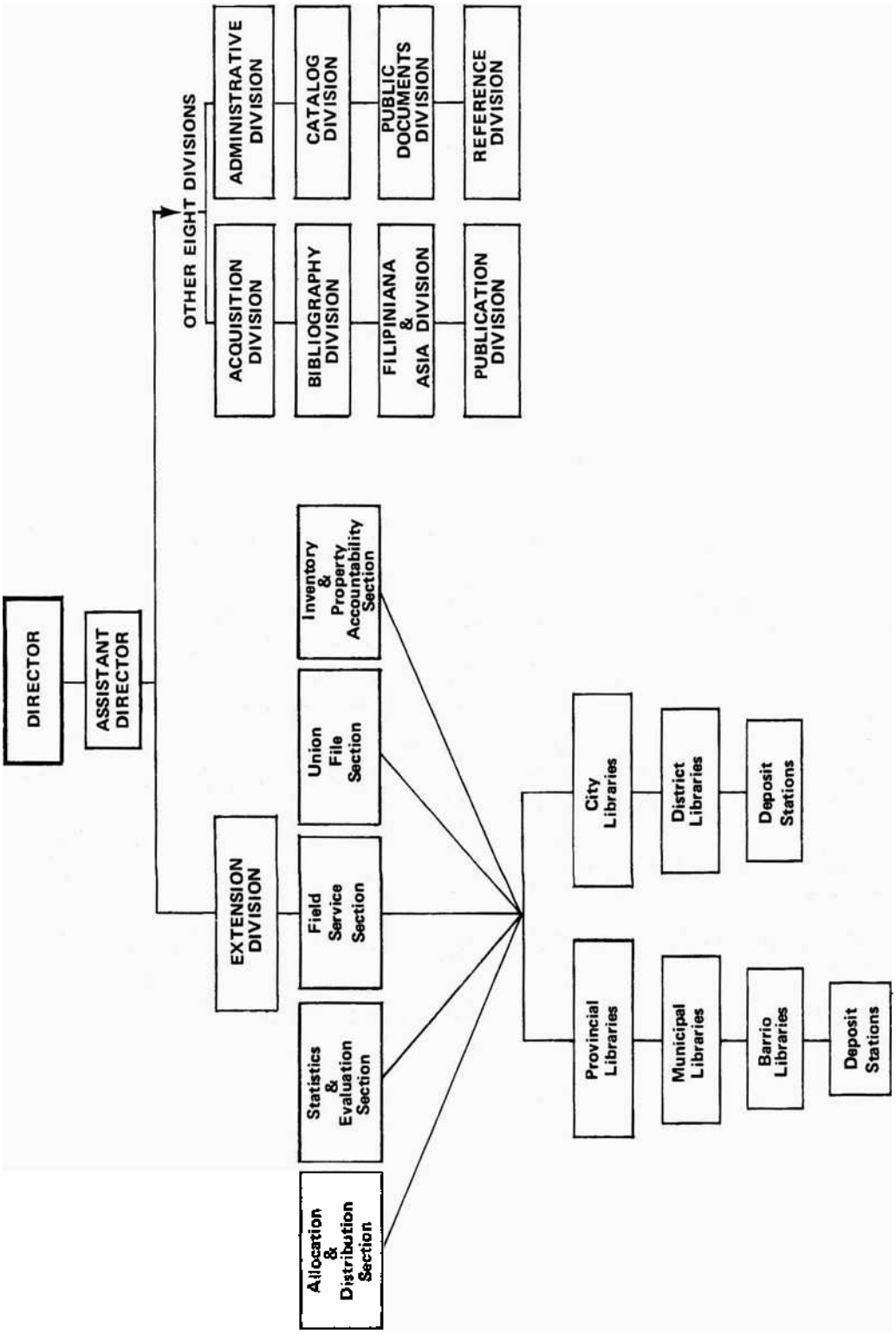

FIGURE 2. *The organizational structure of the National Library of the Philippines.*

to deal with their various problems and, most importantly, appropriate library fundings.

The arrangement between the National Library's Extension Division and the public libraries is that the National Library provides the initial collection and the library forms necessary in the operation of the service to readers. The technical processing of the books provided by the National Library is done in the National Library. But, before the Extension Division releases the initial collections of books, the province applying for the establishment of a provincial library must comply with the following requirements:

1. Library building
2. Library equipment, such as shelves, tables, chairs, etc.
3. Reasonable amount of annual appropriations
4. Salaries of a provincial librarian, assistant provincial librarians, supporting and maintenance staff, etc.

The same requirements apply to a city library, town library, or barrio library, although the amount set aside for the above items may be accordingly less than that appropriated by the provincial government. Also, the extension of library facilities to deposit stations has conditions similar to those imposed on barrio libraries. The National Library would consider accommodating a request for reading materials by any agency in a remote area if the requirements regarding a reading room, equipment, annual appropriations, and minimum personnel were met.

Until 1974 a newly organized provincial or city library was given an initial collection of 1,000 volumes, while a municipal library was given 300 titles. Due to the lack of funds, since 1974 the initial collection released by the National Library has been reduced to about 300 books to a newly organized provincial or city library, and 100 books to a new municipal or barrio library.

The books allocated by the National Library to all its branches do not become the permanent collections of the said branches. These books are rotated among the libraries and their interlibrary loan agreements. If a branch library (provincial, city, municipal, or barrio) fails to meet the requirements of the National Library, the Extension Division can withdraw its allocated collection and support. The only books which remain as the branch libraries' permanent collections are those that are purchased with the local funds.

Furthermore, it should be mentioned that the Extension Division staff also frequently visit, direct, and advise the local librarians. There are field librarians who are National Library staff. These field librarians are promoting the Extension Division's development program. The division has sponsored periodic seminars, workshops, and conferences. It also has sponsored regional workshops for field and local librarians, in cooperation with the Public Libraries Association of the Philippines.

PUBLIC LIBRARY SERVICES

As most public libraries in the Far East, they provide reference, circulation, and readers' services. The public libraries generally provide special reading areas for newspapers and magazines and reading for children.

Many public libraries attempt to provide library services to schools. Some provincial librarians even extend help to train and orient some school librarians.

In response to the developing needs of the public librarians in the country, the Public Libraries Association of the Philippines (PLAP) has played an important role. The PLAP proposed a decree with the Extension Division's concurrence to make it compulsory for all provinces, cities, and municipalities to set up libraries with funding from the local government and the National Library. The association holds its national conference and workshop once every other year. It promotes library support, provides opportunities for staff training and development, and encourages communication among public librarians. Thus, although the general condition of public libraries in the Philippines is still very inadequate due to the lack of funds and professionally trained librarians, the work of the Extension Division of the National Library and the PLAP has been encouraging.

Republic of China (Taiwan)

Library development in Taiwan since 1945 can be divided into three periods:

1. 1945–1952: The old libraries established during the Japanese occupation had been destroyed by the war, and new ones were to be built during this period. The blueprints for the library development in Taiwan were the "Rules and Regulations of the Provincial and City Public Libraries" and "Rules and Regulations for County and City Libraries in Taiwan," promulgated by the Chinese government. During the same period, the collections of the National Central Library had been moved from the Chinese mainland to Taiwan.
2. 1953–1961: This was the booming period of library growth and development.

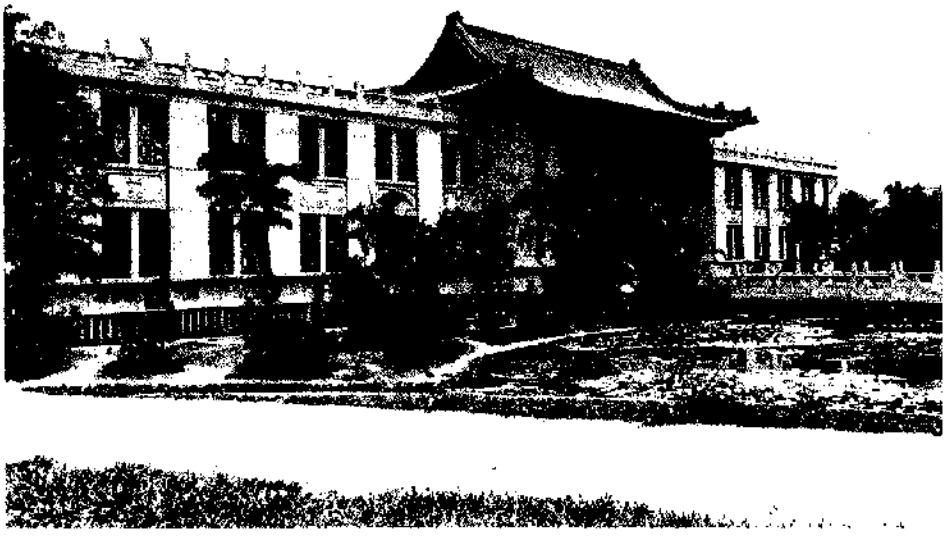

FIGURE 3. *The National Central Library of the Republic of China, Taipei.*

During this period, the National Central Library was reopened to the public, the Library Association of China (LAC) was founded, and the Library Standards were drafted by LAC.

3. 1962 to the present: The Library Standards were approved and put into effect, the National Central Library started the Union Catalog compilation project, and libraries started cooperative expansion.

CURRENT PUBLIC LIBRARY SITUATION IN TAIWAN

In 1974 it was estimated that in Taiwan there were: one national library and 20 public libraries, as compared to 99 college and university libraries, 951 high school libraries, and 90 special libraries. The detailed information (including history, organization, architectural plans, facilities, budget, collection, cataloging, future plans, etc.) on each of the public libraries can be found in the *Guide to Libraries of the Republic of China* (National Central Library, Taipei, May 1975; in Chinese). For the readers' convenience, an overview of the public libraries in Taiwan is provided in the following, with some descriptions given for three selected major public libraries.

NATIONAL CENTRAL LIBRARY

It was first established in Nanking in 1913 and began its services to the public in 1936. It was moved to Chungking several times during the Sino–Japanese War. It returned to Nanking at the end of hostilities in 1945. In 1949, when the Chinese Communists occupied the mainland, the library was once again moved, to Taipei, where it was not able to resume its services until 1954. (See Figures 3 and 4.)

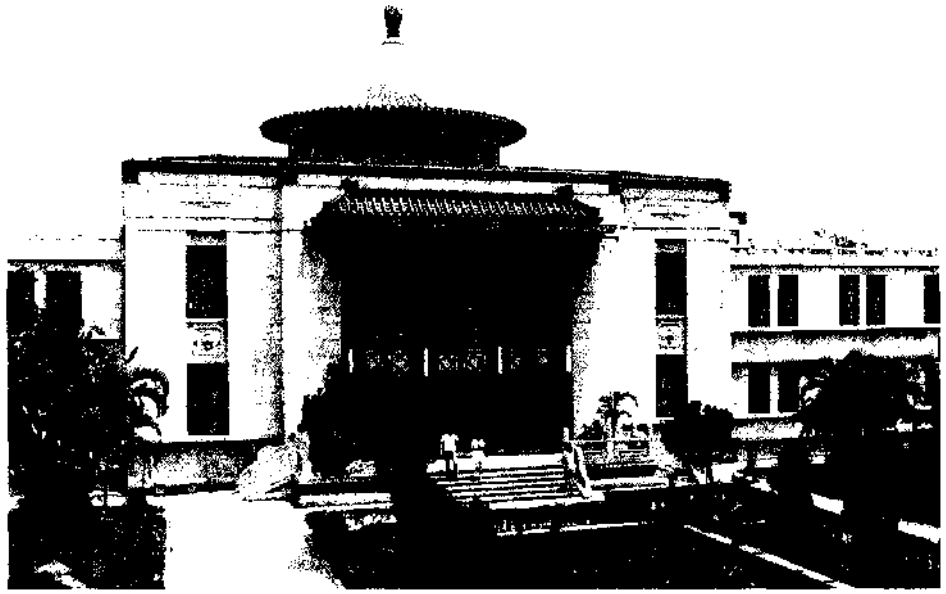

FIGURE 4. *The inner court of the National Central Library of the Republic of China.*

The library consists of one branch, five departments, one bureau, and two offices to handle acquisition and accession, cataloging, and reference and reader service. The Bureau of International Exchange of Publications, representing the Chinese government, is the central organization for exchange of publications between China and foreign countries.

When the National Central Library (NCL) moved to Taiwan in 1949, it had only 140,000 volumes, which were brought from Nanking. As of June 1975 the library collection had been increased to 485,000 volumes (leaflets and unbound volumes of serial titles not included). Of the holdings, 143,998 volumes are Chinese rare books.

SERVICES OF NCL

The NCL answers reference inquiries, mostly of a scholarly or research nature, by any requester from the general public. They may be submitted by telephone, in writing, or in person.

The library provides duplicating services at cost, and holds domestic and international book exhibits. Other activities include forums, meetings, concerts, and films. The library also has an active publication program. Several major bibliographical tools—such as *Chinese National Bibliography, Index to Chinese Periodicals, Catalog of Theses and Dissertations of the Republic of China, Guide to Libraries of the Republic of China,* and many others—are essential reference materials for bibliographic control, interlibrary loan, and other services.

It is particularly worth noting that the Interlibrary Loan Project has been underway since 1968 under the supervision of NCL. The Rules for Interlibrary Loan for Public Libraries were signed in 1968 by the NCL and several major provincial and city public libraries. Since then, it has been possible for the public libraries to encourage more resource sharing.

The Taiwan Branch of the NCL, formerly the Taiwan Provincial Library, became affiliated with the NCL as of July 1973, serving as the Taiwan Branch for public library functions. Besides its regular library functions, it is engaged in a project for building up a center of Braille materials in order to render services to the blind.

PUBLIC LIBRARIES

In 1974 it was reported that there were 21 public libraries in Taiwan—one provincial library in Taichung, one city library in Taipei, and 19 at the hsien (equivalent to county in the United States) and city (under hsien) levels, with a total of 350 reading rooms and 1,200,000 volumes. Of these libraries, the Provincial Taichung Library and the Taipei City Library have the best facilities and the strongest collections.

The Provincial Taichung Library was established in 1922. It employs over 50 staff members, holds close to 145,000 volumes, and occupies a large 10-story building with a seating capacity of 2,500. It has a community center which is used for adult education and various social and educational activities.

The Taipei City Library, established in 1953, has one main library and four branches. It is also in the process of building up more branch libraries in the city of Taipei. Besides regular public library services, it also provides special services for the blind, and sponsors various social and educational activities.

The collections of public libraries in other areas of Taiwan range from 20,000 volumes to 120,000 volumes. Most of the public libraries maintain a substantial Japanese collection, because a substantial percentage of people (mostly those who were in Taiwan under the Japanese occupation) prefer to read Japanese materials. For example, of the approximately 145,000 volumes available in the Provincial Taichung Library, about 30,000 volumes, or one-fifth of the total, are Japanese books. It is also worth noting that in Taiwan, the bookstores are numerous and prosperous and most books are comparatively inexpensive. Because of these factors, most people tend to purchase a great many books related to their interests, and do not seem to rely heavily on public libraries as sources of information. This could possibly contribute to the relatively slow progress in public library development in Taiwan. The Chinese Library Standards set as a goal the establishment of libraries in communities which have a population of 20,000 or more, and of reading rooms in areas which have a population of less than 20,000. The Standards also state that the standard book collection in a hsien public library should be one volume for every five citizens. Based on this formula, Taiwan—which has a population of almost 15 million—should have 600 to 700 public libraries and reading rooms with a total collection of 3 million volumes. Thus, it is clear that much is yet to be accomplished in Taiwan in order to reach the goals set by the Standards.

Republic of Korea

The history of Korean libraries can be traced back to 918 A.D. when the first royal library was founded, and to the period between 918 A.D. and 982 A.D. when the Central Royal Library, the Royal College Library, and several governmental, private, college, and Buddhist temple libraries were established.

Despite this early history, library development since the 10th century had not been spectacular prior to the mid-1960s. Naturally, due to the Korean War, many libraries and library collections were either destroyed or damaged, and many precious collections suffered great damage. It was estimated that one-half of the entire library collections in the Republic of Korea were lost during the war. Thus, the postwar planning, construction, and development programs for modern libraries were essential.

The following reported statistics seem to show that the postwar growth has been very substantial: In September of 1955 only 70 libraries reported their operation with a total collection of about 1.9 million volumes and a seating capacity of 6,504. Yet, in 1973 these figures changed greatly, to 3,361 libraries with 19.1 million volumes and 281,000 seats. Table 5 also shows the phenomenal growth pattern of Korean libraries during the 10-year period of 1964–1973.

It is clear, however, among the growth patterns shown in Table 5, that public

TABLE 5
Growth of Korean Libraries, 1964–1973

Type of library	No. of libraries		Collection size (million)		Circulation (million)		No. of users (million)	
	1964	1973	1964	1973	1964	1973	1964	1973
Central National Library	—	1	—	0.52	—	0.31	—	0.40
National Assembly Library	—	1	—	0.16	—	0.06	—	0.03
Public libraries	48	68	0.69	0.76	0.90	2.24	1.85	5.44
College and university libraries	101	165	3.63 [a]	6.53	3.82	5.74	4.69	6.54
School libraries	950	2,965	1.35	9.38	2.23	NA	9.99	40.68
Special libraries	72	161	0.54	1.79	0.83	2.06	0.81	1.69
Total	1,171	3,361	6.21	19.14	7.78	10.41 [b]	17.84	54.78

[a] Estimate.
[b] Plus school library circulation.

libraries were the most neglected ones in Korea and showed the smallest percentage of growth in terms of actual numbers of operating libraries and collection size.

The best source of information on public library development in Korea is probably the July 1974 issue of *KLA Bulletin* (Korean Library Association), which dealt with the topics in great detail. Four key articles were presented:

1. Conditions of the public library establishment and their problems.
2. On the problem of office regulations and a subordinate government office for public libraries.
3. The relation of the public library and village mini-library in Korea.
4. The function of the public library in coping with social change.

These articles were written in Korean and, unfortunately, due to the time restraint, this writer cannot benefit much from the information presented there. The government enacted the Library Law in 1967 and this law requires at least one public library for each county, and a 5-year blueprint for public library establishment was planned for the years 1968–1972. This blueprint projected either the construction of new public libraries or the expansion of existing ones, as follows:

Year	No. of libraries
1968	28
1969	42
1970	47
1971	40
1972	25
	182

Of these 182 libraries, 137 were planned to be county libraries, 27 city libraries, and 18 district libraries (smaller than city).

From Table 5 it is obvious that the 5-year plan was not a success. In 1973 the total number of existing public libraries was 68 instead of 182, as planned in 1967. In Seoul, the capital city of the country, there were only four public libraries in 1974 although eight more were planned in the following 5 years. The main reasons for the failure were considered to be the lack of knowledge about the functions and structures of public library systems, the lack of long-range planning, the lack of qualified personnel and leadership, and most of all, the shortage in overhead investment funds in both local and central government budgets.

Besides the general public libraries in Korea, it is necessary to discuss the two existing national libraries and the village mini-libraries, which seem to be unique to Korea.

NATIONAL LIBRARIES

Korea has two national libraries. One is under the legislative branch of the government and is named National Assembly Library (NAL). The other one is under the administrative branch of the government and is called Central National Library (CNL).

As shown in Table 5, in 1973 NAL had a collection of 164,000 volumes and

an annual budget of approximately U.S. $600,000. It provides legislative reference services and has an active publication program. One of its major publications is the monthly *Index to Korean Periodicals.*

CNL, although it had a smaller annual budget of about U.S. $270,000, had a larger collection than NAL with about 516,378 volumes in 1973. The collection has special emphasis on classical and genealogical literature. CNL provides reference services for research-oriented inquiries, promotes cooperative programs among libraries, and publishes several important bibliographical tools, such as *National Bibliography* (since 1965). In 1970 CNL initiated the long-awaited *National Union Catalog.* Effective January 1970, each library was asked to present one copy of main entry cards of all new acquisitions to CNL, and those libraries which have participated in the National Union Catalog program can join an interlibrary loan system initiated by the CNL. It was reported that, in 1974, 16 libraries in Seoul were in the system, and of these 16 libraries two were public libraries.

VILLAGE MINI-LIBRARIES

The mini-library program, also sometimes referred to as micro-library program, has been expanded greatly since its initiation in 1960.

In March 1974 it was reported that there were 35,000 mini-libraries existing, and all of them were initiated by the local villagers to fulfill their own needs. Each mini-library usually contains a couple hundred books and a few magazines, and most of the small collections are comprised of agricultural, horticultural, or fishing handbooks, with a few popular fiction items. The emphasis of the collection depends a great deal on the nature of the village where the library is situated. The finance of each mini-library is usually jointly shared by the Micro-Library Association and the village and/or certain villagers, with each party being responsible for half of the total cost.

From the Western, modern library system point of view, many of these micro-libraries are essentially the most basic units of the public library network. It is possible for these village mini-libraries to have book exchanges among themselves and to borrow needed materials from nearby public libraries. In fact, a model county libraries system, Kangjin County Library System with two branches in Cholla Province, is apparently an incorporated system of all micro-libraries within the county.

KOREAN LIBRARY ASSOCIATION

Finally, it should be noted that the Korean Library Association (KLA), first organized in 1945 (then Chosun LA), has five societies by type of library, and one of the five is that of public libraries. The association's objectives are "promoting and improving library services and facilities in Korea through mutual exchanges and cooperation among foreign and domestic libraries and librarians." The association holds workshops, sponsors seminars, and supports the training of personnel, etc.

In light of the shortage of qualified librarians in Korean libraries, particularly in public library settings, the importance of KLA to public library development in Korea should not be underestimated.

Singapore

Singapore is a small island country in Southeast Asia. It lies at the southern end of the Malay Peninsula. The geographical area is only one-fifth that of Rhode Island and is almost as big as the city of Chicago.

Singapore is a highly urbanized city-state. The heart of the country is the city of Singapore, which is one of the world's busiest ports. The city of Singapore has a population of about 2.1 million people, or about 91% of the country's total population. About 75% of the total population are Chinese and 15% are Malays; thus, the official languages are Chinese, English, Malay, and Taneil.

The island was controlled by Great Britain from 1824 to the mid-1900s. It became a part of the Federation of Malaysia in 1963 and became an independent country in 1965.

As for the public library development in Singapore, it is important to start with the National Library of Singapore. As stated in the discussion on Malaysia, legislation was passed in the form of the National Library Ordinance (No. 31 of 1957), and the previous Raffles Library was converted to the National Library in 1958 with Mr. L. M. Harrod as its first director. The National Library operates as a government department, at first under the Ministry of Education, and since 1959 under the Ministry of Culture. The differences between the National Library and other government departments are:

1. The National Library has an Advisory Board, whose chairman is appointed by the government but is a nongovernment employee. The board includes both government and nongovernment representatives, and its role is an advisory one to the director of the National Library.
2. Due to the nature of library service, the National Library is exempted from some normal government procedures, such as the waiver of tenders for book and serial purchases, etc.

The National Library central building was opened in November 1960. The library collection, including nonbook materials, was estimated to be over 150,000 volumes in 1958, 400,000 in 1968, and 750,000 in 1975. The annual acquisition is about 40,000 to 50,000 volumes per year.

The National Library plays a dual role of both public and national library. Singapore's geographical area is small and it has a highly centralized system of government. Because of these facts, the public library services are relatively very easily administered in comparison with the complex city and metropolitan library systems in places like Tokyo. There is no confusion of authority. All public libraries are administered by the National Library.

The National Library has been handsomely supported by the government. In

1969 it was reported that the library had a budget of about 60 cents per head of population. That was four times higher than that recommended in the Ceylon meeting for Asian countries. On the other hand, the library has also been heavily used by the public. In 1958 the library had a total circulation of 0.5 million, but by 1966 the total circulation had more than doubled.

As to the registered users of the library, it was reported that there were 145,196 at the end of 1968 and this is expected to be substantially more now. Of these registered users, the majority are children under 15. This reflects the great emphasis that Singapore has placed on educating the very young and shows that the educational program has been successful. In Singapore, top priorities have been given to providing quality library services to children. The children's library is often divided according to language. One should keep in mind that the percentage of children's membership of the library—which was 76.7% in September of 1965, and 70.27% in 1968—has dropped in recent years, and that the percentages of young adult and adult membership have increased.

Besides the home reading services, the reference and information services provided by the library to the public are extremely popular. On the average, more than 700 visitors a day are served.

The National Library had a large branch at Queenstown in 1969. At that time, it was planned to decentralize the home reading services, to expand the mobile library service, and to establish branch libraries. In 1964 there were only two service points for mobile library services, and in 1968 there were 11 service points. Since then, more have been established.

In 1968 plans were outlined for the establishment of three types of branch library:

1. Regional branches with 200,000 volumes or more at Queenstown, the Mountbatten/Joo Chait/Siglap area, and Toa Payoh.
2. Major branch libraries offering full-time service in new urban areas such as Bukit Panjang, Woodlands, Yio Chu Kang, and Jurong.
3. Community or neighborhood part-time branches.

Furthermore, the National Library has been concerned with improving the quality of its adult service and its services to children and teenagers, and with expanding its library services to institutions, such as hospitals, prisons, social welfare homes, etc.

On the whole, national public library development in Singapore has been successful since 1968. It should be noted that in 1968 the National Library (Amendment) Act provided for the National Library "to participate in national planning for all types of library service in Singapore." Thus, in Singapore, a total, national library network is in existence.

Thailand

Thailand is a tropical country which is largely rural and agricultural. About four-fifths of the Thai people live in agricultural villages and about 93.4% of the whole

population are Buddhists. The rate of illiteracy, on the average, is still fairly high, although it varies greatly in various sex and age groups. In 1970 the mean average rate of literacy was 28%.

In 1974 it was estimated that there were: one national library, about 335 public libraries, 2,800 school libraries, 11 university libraries, and numerous special libraries. As a whole, public library development in Thailand has been most neglected.

NATIONAL LIBRARY

The National Library of Thailand (NLT), originally established in 1905, is a division in the Department of Fine Arts, Ministry of Education. The NLT has a collection of over 800,000 volumes, with emphasis in the humanities, social sciences, and the history and geography of Thailand. About three-fourths of the NLT books are in Thai.

As most countries' national libraries, NLT is also responsible for several major bibliographical tools in Thailand, such as *Abstract on the Materials about Thailand*, etc. The National Library in Bangkok is a new institutional building, spacious and quiet. Since the general public and school library facilities are inadequate, the reading rooms and balconies of the National Library are crowded with schoolchildren and students making use, not of the bookstock, but of those other necessary facilities for study: space and peace.

PUBLIC LIBRARIES

The first public library in Thailand was established in 1916 by the Educational Section of the Ministry of Education. The main purpose of the library was to provide books for people and the library was named "The Reading Room for People." At that time there were three public libraries—Wat Sutat, the South of Wat Sam Chin, and Wat Prayoonwongsawas. In the year 1918 they were expanded to nine libraries. The book collections were mostly books donated by generous-minded people and most of these books were printed in Bangkok.

In 1925 a library section was established in the Division of Textbooks. The section's responsibility was to help to enlarge people's knowledge by providing books. Unfortunately, there was little library development until the establishment of the Section of Adult Education in 1940. Shortly after that year, the Changwad and Amphur Public Libraries were established, and in 1949 the Thai government started to set up many public mini-libraries, which enabled people to visit the libraries and to read newspapers, etc. Since then, there have been 335 public libraries under the Adult Education Section of the Department of General Education. Besides a small number of public libraries of larger municipalities—such as the Bangkok Municipality and the Dhonburi Municipality, which have adequate facilities—most Thai public libraries have only small reading rooms with an average of about 300 volumes. Naturally, most of them are not staffed by professionally trained librarians. Apart from the budgetary difficulties and the shortage of qualified

personnel, the other obstacle to smooth growth of public libraries in Thailand is due to the complexity of various kinds of governmental agencies which control the operations of their respective public libraries. These agencies are the Adult Education Division, Elementary and Adult Education Department of the Ministry of Education; the Bangkok Municipality; the National Security Command Community Development Department; and the Ministry of Interior. Although there is cooperation among various groups of public libraries, each agency has its own policy for operation of public libraries. Thus, adequate coordination and planning of public library development is hard to realize. As to interlibrary loan and exchange of materials, these activities are more noticeable among types of libraries other than public libraries.

THAI LIBRARY ASSOCIATION

With the great number of barriers to effective public library services in Thailand, as mentioned above, it is hoped that the Thai Library Association (TLA) can provide leadership to public librarians in that country.

TLA was founded in 1954 with the objectives to promote the establishment of libraries and to maintain them through trained staff, proper finances, and improved techniques. Fortunately, it is recognized by government agencies, and therefore it can and has played an important role in promoting library cooperative projects, interlibrary loan at various levels, and exchange programs. It also provides various workshops, training sessions, and forums for informal exchange among Thai librarians.

The association strongly endorses the library standards introduced by Thai librarians in 1968. These standards introduced guidelines for planning national library services, and their implications for public library development in Thailand are obviously significant.

Conclusion

From the above discussions, it is obvious that the current status of public library development in the Far East varies greatly from one country to another. Although each country has its own unique problems and obstacles, it is also easy to find some common difficulties; among them the obvious and frequently felt ones are:

1. Lack of overall planning
2. Lack of financial support
3. Lack of properly trained staff

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CHING-CHIH CHEN

CONTEMPORARY LIBRARIES IN WESTERN EUROPE*

General Introduction

The development of public libraries in Western Europe has been discussed in this encyclopedia in articles dealing with the library systems of individual countries. This article provides additional information on recent trends and new publications.

After the ravages of World War II in Europe, two organizations and two events were major forces in the development of public libraries and the recognition within their countries of their vital role for the welfare of the citizens. One organization is UNESCO, particularly its Division for the Development of Documentation, Libraries and Archives, which issued the pioneering *Public Library Manifesto*, first in 1949 and revised in 1972. The other is IFLA, the International Federation of Library Associations and Institutions, whose Public Libraries Section prepared the *Standards for Public Libraries*, published in 1973.

Western European nations are member states of UNESCO, and their libraries, particularly public libraries, have greatly benefited from UNESCO's support. The *Public Library Manifesto* proclaims UNESCO's faith in the public library as a

* The General Bibliography for this section begins on page 419. See also the Selected Bibliographies at the end of each subsection, by country.

vital force for education, culture, and information, and as an essential agent for the fostering of peace and understanding between people and between nations. The public library is described as a democratic institution for education, culture, and information, and areas outlined are resources and services, use by children and students, special consideration of the handicapped reader, and its role within the community. Thus UNESCO had established the general principles, upon which IFLA's Public Libraries Section could formulate the *Standards*.

Under the emerging concept of lifelong learning and the educational function of public libraries, UNESCO initiated a pilot program in Paraguay, in which libraries and educational documentation services are completely integrated in the education process. Results of this experiment may influence the future development of both school and public libraries in education.

IFLA's *Standards for Public Libraries* serve as guidelines for the development of public library services and provide a basis for the formulation of national standards appropriate to the situation in each country. Specifically, standards concern themselves with administration and service (size of administrative unit, housing, hours of opening, branches, and mobile units); collection (development, maintenance, types of material, binding); service to special groups (children, handicapped, hospitals, prisons, minorities); staff; library buildings (detailed planning for various service areas and other uses, such as exhibitions, staff rooms, and others); and cost of public library services.

In its "Medium-Term Programme," the International Federation of Library Associations and Institutions has isolated seven areas of future concern and planning activities: (*a*) the role of public libraries in adult education; (*b*) the promotion and extension of public libraries in developing countries; (*c*) public library work in rural areas; (*d*) the public libraries of a country as a cooperative network; (*e*) automation in public libraries; (*f*) handling and use of audiovisual materials in public libraries; and (*g*) establishment of national and regional centers for advice and technical assistance to public libraries. Except for point (*b*), which does not apply since the countries of Western Europe are considered developed, all other points are discussed in the professional literature of these countries with varied degrees of emphasis.

Rapid developments in the use of audiovisual materials in public libraries were the reason for the founding of a Working Group on Audiovisual Materials within the Public Library Section of IFLA in 1973. This group consists of participants from nine countries and has been gathering data in preparation for recommended guidelines and standards for the selection, processing, and use of these materials. Among its proposals is a clearinghouse for information and materials related to audiovisual services, to operate under IFLA auspices.

Several factors contributed to the present state of change within the public library system, particularly of Western Europe: the effects of new worldwide information technology on public libraries, the shifting role of the public library in relation to other municipal and national education and information services, and the developments and practices in the staffing and administration of public library services. Libraries are responding to social changes and look for new methods and techniques to provide effective service to a more demanding public. Increased com-

munication among libraries and establishment of cooperative networks are considered to be part of the solution.

In his speech to the Public Libraries Conference in Eastbourne, Frank Gardner pointed out that in all countries of Europe, the objective of a free, universal public library service is professionally recognized, but that progress toward it varies enormously. The most outstanding problem is the legislation base. In the economic reconstruction of Europe after World War II, legislation on public libraries did not have high priority. Library laws are needed for national library development and to establish guidelines for ideal public library service. The Scandinavian countries have been models in this respect, with early and continuously revised legislation. Only recently has library legislation been initiated in other countries of Western Europe. On the whole, the outlook is promising for continued progress. Holdings in public libraries have increased and so has use. However, there are common problems that stem from the economic situation caused by limited budgets and rising costs of material. Qualified staff is difficult to attract when salaries are low, and difficult to pay if salaries are high. All this poses problems in the acceptance of standards. Regular professional contacts among librarians, nationally and internationally, ideally under the auspices of IFLA, are needed to create a strong, united, and powerful public library service for Europe.

PROFESSIONAL ASSOCIATIONS FOR PUBLIC LIBRARIES

A recent survey found one international and ten national library associations for public libraries out of a total number of 361. But one has to remember that a large number of general library associations include public libraries, either completely integrated or assigned to a division, section, or committee. In contrast, academic and research libraries are organized in 27 international and national associations, including one for Western European research libraries, LIBER (Ligue des Bibliothèques Européennes de Recherche). Only one international association exists for large public libraries, the International Association of Metropolitan City Libraries (INTAMEL). IFLA maintains a Section for Public Libraries. INTAMEL was established in 1968 and has over 100 member institutions which are metropolitan city libraries serving populations of at least 400,000 people, and in some cases, national libraries. The association defines its aims as assisting the worldwide flow of information and knowledge by promoting practical collaboration in the exchange of books, exhibitions, staff, and information. This is carried out through annual meetings, studies to solve problems, and aid to developing countries.

The national associations for public libraries are discussed under individual countries.

PROFESSIONAL JOURNALS FOR PUBLIC LIBRARIES

The professional journals for Western European public libraries are given in the following annotated list.

Association des Bibliothécaires Français (ABF): Bulletin d'informations [Association of French Librarians: Information Bulletin], 1907–, quarterly.

Address: 65, rue de Richelieu, F 75002 Paris, France. Includes articles and news about public libraries, especially its Section des Bibliothèques Publiques [Public Libraries Section]. In French.

Bibliotheek en samenleving [Library and Society], Nederlands Bibliotheek en Lektuur Centrum [Dutch Center for Public Libraries and Literature], 1972–, 11 per year.

Supersedes *De openbare bibliotheek* [The Public Library], 1958–1972. Address: Postbus 2054, The Hague, Netherlands. In Dutch.

Bibliotheksdienst [Library Service], Deutscher Bibliotheksverband [German Library Association], 1949–, monthly.

Address: Fehrbellinerplatz 3, D 1000 Berlin 31, Federal Republic of Germany. On public and research libraries. In German.

Bok og bibliotek [Book and Library], Statens Bibliotektilsyn [State Directorate of School and Public Libraries], 1934–, bimonthly.

Supersedes *For folkeopplysning*, 1916–1933. Address: P. O. Box 8145, Oslo Dep., Oslo 1, Norway. In Norwegian.

Buch und Bibliothek [Book and Library], Verein der Bibliothekare an Öffentlichen Büchereien e.V. [Association of Librarians in Public Libraries], 1949–, 11 per year.

Address: Gartenstrasse 18, D 741 Reutlingen, Federal Republic of Germany. In German.

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Address: c/o Canadian Library Association, 151 Sparks Street, Ottawa, Ontario, K1P 5E3, Canada. In English.

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Address: c/o Società Umanitaria, Via Daverio 7, Milano Cap. N. 20122, Italy. In Italian.

IFLA Journal, International Federation of Library Associations and Institutions, 1975–, quarterly.

Address: Verlag Dokumentation, POB 711009, Pössenbacher Strasse 2, D 8000 München 71, Federal Republic of Germany. Contains articles on public libraries and reports on the work of the IFLA Section of Public Libraries. English, French, and German editions.

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Address: Notodden Bibliotek, N-3670 Notodden, Norway. In Norwegian.

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in Library, Information, and Documentation Science, and the Dutch Association of Business Archivists], 1969–, 11 per year.

Address: Dr. H. E. Wuite-Harmsma, Steynstraat 36, Hengelo (O), Netherlands. Published jointly with Nederlands Bibliotheek en Lektuur Centrum, and Nederlandse Vereniging van Bibliothecarissen [Dutch Center for Public Libraries and Literature, and Dutch Association of Librarians]. In Dutch.

PLA Newsletter, Public Library Association, 1961–, quarterly.

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Supersedes *REOL*, 1962–1967. Address: Telegrafvej 5, DK 2750 Ballerup, Denmark. In English.

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Address: Mirjam Montonen, Editor, Helsinki University Library, Unioninkatu 36, SF 00170 Helsinki K1 17, Finland. In Finnish.

Austria

Austrian library development is characterized by its rich heritage of international influences both from the Germanic-language area in the West and the Slavic proximity in the East. Austrian library services were pioneering in the establishment of national interlibrary loan in 1883 and a union list of current serials in 1898. The first professional library association was founded in 1896.

Today public libraries serve a stable population of about 7½ million people. Economic and political conditions had hindered modern public library developments until fairly recent times. Baumgartner reported in a study of a municipal library in Krems, originally founded in 1876, that with the construction of a new building in 1966 and the introduction of improved services—such as a children's library, open access, foreign-language collections—the number of users rose dramatically from 1,956 in 1966, to 3,963 in 1974 ("Die Kremser Stadtbücherei . . .").

The Vereinigung Österreichischer Bibliothekare (VÖB) [Association of Austrian Librarians] includes all professional librarians and with over 600 members is the strongest library association in Austria.

Public libraries are separately united in the Verband Österreichischer Volksbüchereien [Association of Austrian Public Libraries] which lists some 477 member libraries, with institutional membership only available. The combined book collections of these public libraries are 4 million items. In 1974/75 there were 635,000 users with nearly 10 million circulation transactions. In spite of the increased use, public libraries have to operate under reduced budgets and make efforts to economize on the administrative level without affecting the book budget. Since the Ministry of Education and Culture has the federal responsibility for libraries, appeals have been made for subsidies. In 1974 the Public Libraries Association, with the cooperation of the ministry, produced a 20-minute film about public library service, published a pamphlet on library staff training, and developed a basic course of study. Eighty-one candidates passed the examination for work in public libraries.

Current issues for public libraries concern the relationship between school libraries and public libraries as part of the whole cultural program.

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An example of early public library development in Austria, where 17 rural libraries were established in 1877 and a municipal library in 1876.

Baumgartner, Elisabeth, "Die Kremser Stadtbücherei nach dem zweiten Weltkrieg" [The Krems Public Library after World War II], *Erwachsenenbildung in Österreich* [Adult Education in Austria], **26,** 481–490 (1975).

Describes modernization through a new building in 1966 with a separate children's library, introduction of open stacks, and improved information services.

Biblos: Österreichische Zeitschrift für Buch- und Bibliothekswesen, Dokumentation, Bibliographie und Bibliophilie, Vereinigung Österreichischer Bibliothekare [Association of Austrian Librarians], 1952–, quarterly.

Address: c/o Österreichische Nationalbibliothek [Austrian National Library], A 1014 Vienna, Austria. In German.

Daten, Dienste, Dokumente: Wissenschaftliches Dokumentations- und Informationswesen in Österreich: Zielsetzungen, Beispiele [Data, Services, Documents: Scientific Documentation and Information Services in Austria: Goals, Models], Bundesministerium für Wissenschaft und Forschung [Federal Ministry for Science and Research], Vienna, 1975, 206 pp.

A thorough, scholarly overview on Austrian library and information services planning prepared for UNISIST.

Handbuch österreichischer Bibliotheken [Handbook of Austrian Libraries], Vol. 1: *Bibliotheksverzeichnis, Stand 1970* [Library Directory, 1970], Vienna, 1971, xxxix, 394 pp. (*Biblos-Schriften,* No. 62).

Lists some 1,300 libraries, with subject index.

Müller, Rudolf, "Der Büchereiverband 1974/75—Bericht des geschäftsführenden Obmanns" [Association of Austrian Public Libraries—Chairman's Report 1974/75]. *Erwachsenenbildung in Österreich,* **27,** 141–148 (1976).

Vetter, Gertrud, "Verband Österreichischer Volksbüchereien: Generalversammlung und Arbeitstagung 1976" [Association of Austrian Public Libraries: General Assembly and Conference 1976], *Erwachsenenbildung in Österreich,* **27,** 128–141 (1976).

Weimann, Karl-Heinz, *Bibliotheksgeschichte* [History of Libraries], Verlag Dokumentation, Munich, 1975, pp. 147–155.

The Federal Republic of Germany

GENERAL

Reconstruction of libraries after World War II provided the opportunity to create modern public library services in many new buildings to improve the organization of interlibrary cooperation, staff training, and professional education, as well as to strengthen the professional associations.

Uniform development of public library services has been slowed down by the

administrative complexity of the federation, which consists of eight states (*Länder*) and three city-states. These carry responsibilities for educational and cultural affairs within their boundaries, and thus support public library activities. Many states in addition maintain state libraries, which also serve research demands. There are about 24,000 communities, 9,300 of which have public library authorities. Progress in public library development has been remarkable since World War II, and the extensive professional literature is evidence of a vigorous library profession, which continuously plans for improvement.

The Selected Bibliography for the Federal Republic of Germany appears at the end of this subsection. Sources on particular aspects discussed below are included with the text.

LIBRARY COOPERATION AND PLANNING

In 1973 a remarkable document, the *Bibliotheksplan 1973* [Library Plan 1973], was published, an outline of a comprehensive national plan for a library network and pioneering document for the national planning of library services and strengthening of the cooperation among libraries. The plan was initiated by the Deutsche Bibliothekskonferenz [German Library Conference], a loose union of German library associations, and was supported by the Federal Ministry of Education and Science. One result of the *Bibliotheksplan 1973* was the consolidation of both public and research libraries into one professional association, the Deutsche Bibliotheksverband (DBV) [German Library Association]. This association now represents all types of libraries, thereby unifying the cause of libraries into one strong voice. The German Library Association maintains a center for library projects and services for all types of libraries in Berlin (Arbeitsstelle für das Bibliothekswesen—AfB), providing among others: documentation service for periodicals, Universal Decimal Classification adaptation for all types of libraries, compilation of library statistics, and implementation of interlibrary loan. It is financed by federal and state funds. Another center for technical services (Arbeitsstelle für Bibliothekstechnik—ABT) is mainly concerned with the application of data processing services in libraries. These two centers are to be combined into a German Library Institute (Deutsches Bibliotheksinstitut), but because of the complex structure of financial responsibilities, the opening planned for early 1977 has been delayed. Public libraries benefit greatly from these centralized services.

A national plan for resource sharing and the development of a network of subject collections has been set down in an important document produced by the German Research Society, *Überregionale Literaturversorgung*, 1975, and this will have far-reaching impact on library planning as a whole.

Bock, K., "Wissenschaftliche Stadtbibliothek und öffentliche Bücherei: Plaedoyer für den Zusammenschluss kommunaler Bibliotheken" [Scientific Municipal Library and the Public Library: A Plea for the Integration of Municipal Libraries], *Buch und Bibliothek*, **25**, 3–9 (1973).

Emunds, Heinz, "Zur Revision der kommunalen Sondersammelgebiete NRW (SSG)" [On the Revision of the Communal Subject Specialization Project NRW (SSG)], *Mitteilungsblatt Ver-*

band der Bibliotheken des Landes Nordrhein-Westfalen [Information Bulletin of the Library Association of the State of North Rhine-Westphalia], **26,** 90–121 (1976).

According to the *Library Plan 1973,* a subject specialization project has been developed in the state, in which public libraries are to be allotted areas for comprehensive coverage for the whole region.

Frasch, Werner, "Raumplanung zur Verbesserung der Infrastruktur" [Planning the Environment to Improve the Infrastructure], *Buch und Bibliothek,* **28,** 93–102 (1976).

Kluth, R., "Bibliotheksplan 1973 für die Bundesrepublik Deutschland" [Library Plan 1973 for the Federal Republic of Germany], *Libri,* **24,** 157–163 (1974).

Otto, Frieda, "Special Libraries and Library Plan 1973," *Inspel: Int. J. Special Lib.,* **10,** 48–60 (1975).

The planned comprehensive library network will include all types of libraries. Implications for special libraries are discussed.

Pawlack, Erna, "Realisierungsversuch der 'Empfehlungen zum Ausbau des Bibliothekswesens in Nordrhein-Westfalen 1973' im Arbeitsbereich der Staatlichen Büchereistelle Köln" [An Attempt to Realize the "Recommendations for the Expansion of the Library System in North Rhine-Westphalia 1973" in the State Public Library Office, Cologne], *Mitteilungsblatt Verband der Bibliotheken des Landes Nordrhein-Westfalen* [Information Bulletin of the Library Association of the State of North Rhine-Westphalia], **25,** 366–375 (1975).

Schmidt-Künsemüller, Friedrich Adolf, "The German 'Library Plan 1973'," *LIBER Bull.,* **4,** 91–95 (1974).

Süberkrüb, Hans-Jörg, "Ergebnisse der Bibliotheksplanung im Lande Nordrhein-Westfalen aus der Sicht der öffentlichen Bibliotheken" [Results of Library Planning for Public Libraries in the State of North Rhine-Westphalia], *Mitteilungsblatt Verband der Bibliotheken des Landes Nordrhein-Westfalen* [Information Bulletin of the Library Association of the State of North Rhine-Westphalia], n.s., **24,** 27–34 (1974).

Discusses the new structure of library planning for the state.

Wassner, Hermann, "Das Deutsche Bibliotheksinstitut—eine Hoffnung?" [The German Library Institute—a Hope?], *Buch und Bibliothek,* **29,** 116–118 (1977).

Discusses the problems causing the delay in the establishment of the institute.

BIBLIOTHEKSANTIÈME [LIBRARY FEE]

A public lending right legislation, Bibliotheksantième [Library Fee] was enacted in 1973 with implications for all libraries open to the public. They would have to pay a fee for each act of lending a book or other material. The practical execution involves long negotiations. Authors' leagues plan to use 50% of their share for social security benefits. One problem is the agreement as to who will pay: the state, the municipalities, or libraries. If this burden falls on libraries, it would have a disastrous effect on library budgets. Moreover, small libraries with high circulation figures would suffer most.

Fohrbeck, Karla, and Andreas Johannes Wiesand, *Bibliotheken und Bibliotheksantième* [Libraries and Library Fee], Materialbericht und Erhebungen zu Bestand, Ausleihe und Entwicklungstendenzen in den Bibliothekssystemen der BRD [Report of Investigations of Collections, Circulation and Trends in Library Systems of the Federal Republic of Germany], Institut für Projektstudien [Institute for the Study of Special Projects], Hamburg, Verlag Dokumentation, Munich, 1974, 152 pp.

Analyzes all types of libraries, including public libraries.

LIBRARY LEGISLATION

On December 16, 1975, a historic event took place, when the legislature of the state of Baden-Württemberg passed the first law in the Federal Republic of Germany concerning the development of public libraries. Other states are expected to follow this model. Since the 1960s, library associations have urged the governments of the states *(Länder)* to determine the legal status of public libraries, to bind administrators by law to provide and maintain libraries, and to fix allowances from the states to ensure financial security. Public libraries in this new law are envisaged as part of the continuing education program. One disappointment for libraries is the fact that this law does not legally bind the state to provide and maintain libraries, but leaves this as a voluntary provision. The law does define satisfactorily the tasks and functions of the public library. It is difficult to provide a more concrete law because of the current financial situation. But for the first time libraries are legally recognized as an integral part of education facilities and have equal rights. Three levels of public library service are identified: (*a*) library centers for small communities, cooperating closely with schools; (*b*) municipal libraries, dealing with regional requests and loans, supporting the smaller centers and providing bookmobile services to areas where no libraries exist; and (*c*) central libraries, to coordinate library services and to have overall responsibility for periodical holdings and information services.

Dörffeldt, Siegfried, "Das erste deutsche Bibliotheksgesetz—Chance oder Enttäuschung? Bemerkungen zum Büchereiteil des baden-württembergischen Weiterbildungsgesetzes vom 16. Dezember 1975" [The First German Library Law—Opportunity or Disappointment? Observations on the Public Libraries' Section of the Baden-Württemberg Law on Further Education, December 16, 1975], *Buch und Bibliothek*, **28**, 240–243 (1976).

Extracts from the law are printed in the same issue, pages 233–239.

Kaspers, Heinrich, *Bibliotheksrecht* [Library Laws], Deutscher Bibliotheksverband [German Library Association], Berlin, 1976, 67 pp. (*Schriftenreihe der Bibliothekar-Lehrinstitute* [Series of the Library Science Institute], No. C. 1).

Lansky, Ralph, comp., *Bibliographie zum Bibliotheksrecht* [Bibliography of Library Laws], Verzeichnis von Büchern, Aufsätzen, Gesetzen, Verordnungen, Erlassen und Entscheidungen ab 1900 zum Recht der öffentlichen Bibliotheken und Büchereien in Deutschland [List of Books, Articles, Laws, Decrees and Decisions Affecting Laws for Public Libraries in Germany Since 1900], Klostermann, Frankfurt am Main, 1970; Supplements, 1971, 1974, and 1976.

Lansky, Ralph, comp., *Bibliotheksrechtliche Vorschriften* [Directives on Library Laws], prepared for the Verein Deutscher Bibliothekare und Verein der Diplom-Bibliothekare an Wissenschaftlichen Bibliotheken [German Library Association and Association of Certified Librarians at Research Libraries], 2nd ed., Klostermann, Frankfort am Main, 1976.

Walter, Raimund-Ekkehard, "Bibliotheksförderungsgesetz in Baden-Württemberg verabschiedet" [Library Development Bill Passed in Baden-Württemberg], *Bibliotheksdienst*, **5**, 248–251 (1976).

Walter, Raimund-Ekkehard, *Untersuchungen zu einem Bibliotheksförderungsgesetz: Finanzielle Förderung und Strukturpolitik, insbesondere im Bereich öffentlicher Bibliotheken im Lande Nordrhein-Westfalen* [Investigations into a Library Development Law: Financial Assistance and Structural Policy, Especially with Regard to Public Libraries in North Rhine-Westphalia], Deutscher Bibliotheksverband, Arbeitsstelle für das Bibliothekswesen, Berlin, 1974, 115 pp.

An annotated survey of legislation in the state and other states, and comparisons made with public library legislation currently in force in Great Britain, Finland, Denmark, Canada, and Eastern Europe.

HISTORY

The social history of German libraries since 1945 may be divided into four major periods: The first lasted from 1945 to the early 1950s, during which the effects of National Socialism and war destruction were being repaired and models searched. During the second period, 1950s to 1960, the role of public libraries in the reeducation of the people was stressed. In the third period, 1960 to late 1960s, the concept of the "information library" emerged. The last period, late 1960s to 1975, with rising social consciousness, created the idea of the library as a center of communication, serving all segments of society.

Andrae, F., comp., *Volksbücherei und Nationalsozialismus* [Public Libraries and National Socialism], Materialien zur Theorie und Politik des öffentlichen Büchereiwesens in Deutschland, 1933–1956 [Materials on the Theory and Policies of Public Libraries in Germany, 1933–1945], Harrassowitz, Wiesbaden. 1970, 200 pp.

Brown, Eileen, "War Damage, 1939–1945, and Post-war Reconstruction in Libraries of the Federal German Republic and England: A Comparison," *J. Librarianship*, **7**, 288–308 (1975).

Chaplan, M. A., "American Ideas in the German Public Libraries: Three Periods," *Lib. Quart.*, **41**, 35–53 (1971).

AIMS AND OBJECTIVES

The aims and objectives of German public libraries and their roles in an industrial society as part of other cultural institutions—such as theaters, museums, galleries, and archives—are being investigated, and the need for intensified cooperation is stressed. The contributions of libraries to a general cultural policy can be categorized under five functions: (*a*) as media centers providing a whole range of book and nonbook materials; (*b*) as integral parts of cultural community centers; (*c*) as resources for continuing education; (*d*) as enrichment for school library services; (*e*) as providers of services to special groups, such as children, young adults, the elderly, the handicapped, immigrant workers, and others.

Sauberzweig, Dieter, "Informationsversorgung am Ort: Aufgabenverteilung und Zusammenarbeit" [Information Provision in the Community: Distribution of Responsibilities and Cooperation], *Mitteilungsblatt Verband der Bibliotheken des Landes Nordrhein-Westfalen* [Information Bulletin of the Library Association of the State of North Rhine-Westphalia], **26**, 10–21 (1976).

Analyzes aims and objectives of public libraries.

FINANCES

Financial support for expenditures of public libraries is usually linked with the general cultural budget. In the past, especially in urban areas, 75% of such budget was used for theaters and orchestras, and 25% for everything else, including adult

education and libraries. Gradually, local authorities are allocating a larger proportion of their budget to adult education and libraries, but a new definition of cultural priorities is desirable, and treatment of public libraries varies from state to state. Unfortunately, with the tight economic situation, not much change in this situation is expected in the near future.

Frasch, Werner, "Ein Silberstreifen am Bibliothekshorizont? Statistisches zum Thema 'Kulturetat-Bibliotheksetat'" [A Glimmer of Light on the Horizons of Librarianship? Statistical Material on the Subject of Cultural and Library Budgets], *Buch und Bibliothek*, **27**, 920–926 (1975).

On the relationship of finances for public libraries with cultural expenditures.

CULTURAL AND SOCIAL ROLE

To fulfill their cultural role as a means of communication, German public libraries strive to become socially effective bodies, whose sociopolitical functions are to satisfy demands for knowledge and to guarantee free expression of opinion, without political or commercial pressures. The increasing use of various types of media has established public libraries in the role of media centers, and solutions are sought to make the best utilization of resources, such as combining cooperative service to a number of neighboring libraries and using media centers for schools during the day and for adult education classes during evenings and weekends.

Heidtmann, Frank, *Zur Soziologie von Bibliothek und Bibliothekar: Betriebs- und organisationssoziologische Aspekte* [The Sociology of the Library and the Librarian: Sociological Aspects of Management and Organization], Deutscher Bibliotheksverband, Arbeitsstelle für das Bibliothekswesen, Berlin, 1973, 438 pp. (*Materialien der Arbeitsstelle für das Bibliothekswesen*, No. 6).

Considers libraries and librarians from a sociological point of view.

Henning, W., "Zur gesellschaftlichen Funktion der öffentlichen Bibliothek" [Function of the Public Library in Society], *Buch und Bibliothek*, **24**, 395–402 (1972).

Ochsner, Friedrich, "Wieviel ist uns die Demokratie wert? Die Rolle der Bibliothek in der modernen Gesellschaft" [How Much Do We Value Democracy? The Role of the Library in Modern Society], *Buch und Bibliothek*, **27**, 913–919 (1975).

"Öffentliche Bücherei und wissenschaftliche Stadtbibliothek: Fusion, Kooperation oder strikte Trennung; Diskussionsbeiträge aus elf Instituten" [Public Libraries and the Municipal Scientific Library: Merger, Cooperation or Strict Separation . . .], *Buch und Bibliothek*, **25**, 9–23 (1973).

Rogalla von Bieberstein, Johannes, "Informationsversorgung am Ort: Bibliothek und Archiv" [Information Provision in the Community: Libraries and Archives], *Mitteilungsblatt Verband der Bibliotheken des Landes Nordrhein-Westfalen* [Information Bulletin of the Library Association of the State of North Rhine-Westphalia], **26**, 21–31 (1976).

Relationship with other cultural institutions such as museums and archives.

Stadtbibliothek und Regionalbibliographie [Municipal Library and Regional Bibliography], Festschrifft für Hans Moritz Meyer (Hedwig Bieber, Siegfried Kutscher, and Valentin Wehefritz, eds.), Deutscher Bibliotheksverband, Berlin, 1975.

Dedicated to the director of the City and State Library of Dortmund on different aspects of city libraries and regional bibliography in the Federal Republic of Germany.

Süle, Tibor, ed., *Die gesellschaftliche Rolle der deutschen öffentlichen Bibliothek im Wandel 1945–1975: Ein Lesebuch* [The Changing Role of Public Libraries in Society, 1945–1975: A

Reader], Deutscher Bibliotheksverband, Arbeitsstelle für das Bibliothekswesen, Berlin, 1976, 207 pp. (*Materialien der Arbeitsstelle für das Bibliothekswesen*, No. 15).

A social history of public libraries since 1945.

Use of Media

Kullman, Werner, "Die Mediothek als Aktivitätszentrum für möglichst viele Bürger: Information, Unterhaltung, Kommunikation" [The Media Center as an Activity Center for the Greatest Number of Citizens: Information, Recreation, Communication], *Buch und Bibliothek*, **26**, 797–807 (1974).

EDUCATIONAL ROLE AND RELATIONSHIP WITH SCHOOL LIBRARIES

The function of German public libraries continues to change from that of a recreational institution to an active center for the community and continuing education. Much attention is given today to the concept of combined school and public libraries, of which the Bremen Public Library system is the most advanced thanks to the efforts of Werner Mevissen, its chief librarian. Thus libraries are utilized to serve both schools and the general public outside school hours. A number of experimental approaches to this concept are carried out in various parts of Germany. This requires intensified cooperation between teachers and librarians, and also serves to bring the community together.

Andrae, Friedrich, "Laudatio auf Werner Mevissen: Gehalten anlässlich der Verleihung der Medaille für Kunst und Wissenschaft der Freien Hansestadt Bremen" [A Tribute to Werner Mevissen as He Was Presented with the Medal for Arts and Sciences by the Free Hanseatic City of Bremen], *Buch und Bibliothek*, **28**, 63–67 (1976).

Honoring the chief librarian of Bremen Public Libraries since 1947, who developed Bremen's service to its present size of 6 million items in 42 libraries, and who pioneered the concept of combined school and public libraries.

Andresen, Wiebke, "Integrierte Schul- und Stadtteilbücherei, Salzgitter" [An Integrated School and Public Library in Salzgitter], *Buch und Bibliothek*, **26**, 889–892 (1974).

Describes the system, integrated since 1968.

Dankert, Birgit, "Modellversuch 'Schulbibliothek-Mediothek-Schulbibliothekar' im Landesteil Schleswig" [Model Experiment "School Library-Media Center-School Librarian" in the Schleswig Region], *Buch und Bibliothek*, **27**, 208–218 (1975).

Holst, Arne, "Public Libraries and School Libraries in the Federal Republic of Germany," *Schulbibliothek Aktuell*, **3**, 26–29 (1975).

Jahrmann, Werner, "Berlins Schulbibliotheken: Kritische Anmerkungen eines Konferenz Teilnehmers" [Berlin's School Libraries: Critical Observations by a Conference Participant], *Schulbibliothek Aktuell*, **3**, 9–10 (1975).

There is a need in West Berlin for centralized services and for a work center to build up a school system connected with the general library network.

Seume, Ursula, "Öffentliche Bibliothek in der Schule—Schule in der öffentlichen Bibliothek: Eine Zwischenbilanz des Weinheimer Integrationsmodells" [The Public Library in the School—The School in the Public Library: An Interim Report on the Integrated Model at Weinheim], *Schulbibliothek Aktuell*, **1**, 5–17 (1976).

The merger of school and public library shows promising results.

Süberkrüb, Hans-Jörg, "Öffentliche Bibliothek und Volkshochschule" [Public Library and Evening Colleges], *Mitteilungsblatt Verband der Bibliotheken des Landes Nordrhein-Westfalen*

[Information Bulletin of the Library Association of the State of North Rhine-Westphalia], **22**, 33–37 (1972).

SERVICES TO SPECIAL GROUPS

Greater social awareness has identified specific needs for various types of users. Delivery services to the sick, physically handicapped, or elderly, as well as to prisons, have been installed, often involving the work of volunteers. It is emphasized in the literature that such services should be integrated with the general library service as far as possible so that, for instance, old people will not feel isolated from society. Particular attention has been given to library services to the blind, one of the reasons being the large number of blind war veterans—in Bavaria alone, 10,000. The Federal Ministry for Education and Science supported a project between 1974 and 1975, which analyzed the present state of talking libraries for the blind in Germany and West Berlin, and which established criteria for a model system and practical guidelines for management of audio libraries.

The leading braille library in the Federal Republic of Germany, the Zentralbibliothek für Blinde [Central Library for the Blind] in Hamburg, celebrated its 70th anniversary by issuing a Festschrift in 1975. Talking books are on the increase and the Bavarian Talking Library for the Blind has a collection of some 14,000 talking books. It is hoped that a union catalog of talking books will be prepared to facilitate cooperation and interlibrary loan among these libraries.

Peters, Marianne, "Altenbücherdienst Bonn: Ein Zustelldienst für alte und kranke Menschen" [Library Services for Old People in Bonn: A Delivery Service for Elderly and Sick People], *Buch und Bibliothek*, **28**, 410–413 (1976).

Describes services to the physically handicapped.

Röttcher, Günter, "Büchereiarbeit mit alten Menschen: Versuch einer Orientierung am Befund wissenschaftlicher Forschungsergebnisse" [Library Work with Old People: An Attempt to Assess the Findings of Scientific Research], *Buch und Bibliothek*, **28**, 366–378 (1976).

Schwetlik, Christine, *Dienste der öffentlichen Bücherei für Behinderte* [Public Library Services for the Disabled], Deutscher Bibliotheksverband, Arbeitsstelle für das Bibliothekswesen, Berlin, 1974, 61 pp. (*Schriftenreihe der Bibliothekar-Lehrinstitut*, Reihe A).

Recommendations made on how public libraries can further help the disabled, particularly in matters of publicity.

Wassner, Hermann, "Die Blinden und ihre Bibliotheken: Eine neue Festschrift und ein alter Buss-Aufsatz" [The Blind and Their Libraries: A New Festschrift and an Old Penance], *Buch und Bibliothek*, **28**, 407–410 (1976).

Surveys current library services to the blind.

Wassner, Hermann, Gustav Rottacker, and Konrad Ackstaller, *Gutachten zum Ausbau und zur Förderung der Blindenhörbibliotheken in der Bundesrepublik Deutschland und in West-Berlin* [Expert Evaluation on the Development and Promotion of Talking Libraries for the Blind in the German Federal Republic and in West Berlin], Deutscher Bibliotheksverband, Berlin, 1975, 192 pp. (*Materialien der Arbeitsstellen für das Bibliothekswesen*, No. 11).

RURAL LIBRARIES

Differences in educational opportunities between rural and densely populated areas have drawn new attention to the development of rural libraries, which, together with schools, are culturally important since rural areas lack the cultural

facilities available in cities. The Bavarian State Government, for instance, has committed itself to a program of improving rural library services in order to provide equal educational opportunities in all areas. Special training in rural library work for library assistants is planned.

Maier, Hans. "Zur Entwicklung des ländlichen Büchereiwesens—zum Beispiel Bayern" [Development of Rural Library Services—for Example, in Bavaria], *Buch und Bibliothek*, **28**, 1–4 (1976).

The author, the Bavarian state minister for education and culture, describes plans for improvement of rural library services.

Mentzel, Joachim. "Raumordnung, Landesentwicklung, Regionalplannung: Zielvorstellungen für die Literaturversorgung in offenen Siedlungsbereich" [Planning, Land Development, Regional Planning: Proposed Aims for Provision of Literature in Thinly Populated Areas], *Buch und Bibliothek*, **28**, 7–14 (1976).

Unified planning and cooperation between librarians and local government is essential for rural library services.

BOOKMOBILES

The use of bookmobiles for thiny populated rural areas—which are usually less affluent than densely populated towns—is one solution for bringing library services to people. Bookmobiles are further used for special projects, such as the multilingual traveling library which visits immigrant communities in Duisburg. Bookmobiles serve schools, factories, old-age homes, and other urban and rural communities. In 1974 there were 101 vehicles in service, of which 75% were used in urban areas. They had a circulation figure of 10 million.

"Dr. Erhard Schulte, Bundesministerium für Bildung und Wissenschaft: Rede in München am 24. April 1975 anlässlich der öffentlichen Vorführung des Films 'Fahrbibliotheken' " [An Address by Dr. E. Schulte of the Federal Ministry of Education and Science, at a Public Showing of the Film "Mobile Libraries" in Munich on April 24, 1975], *Bibliotheksdienst*, **6**, 313–316 (1975).

"Fahrbibliotheken: Die Bücherei kommt zum Leser" [Bookmobiles: The Public Library Comes to the Reader], *Bibliotheksdienst*, **3**, 128–131 (1976).

["Mobile Libraries in Dortmund"], *Bibliotheksdienst*, **4**, 161–163 (1976).

Describes services and gives statistics for bookmobile services in Dortmund.

USERS AND USER STUDIES

Studies of the users of public libraries are a fairly recent development. A large percentage appear to be in the young age group. Three types of users were identified in such studies: those wishing to extend their cultural activities, those requiring specific information, and those whose information requirements are not fully met by their schools or colleges. Restrictive opening hours, imposition of fines, and lack of visible guides to the collection may deter some readers from using the public libraries. Large metropolitan areas show rapidly increasing use with increased and more specialized demands on a staff that was not increased proportionally.

Frings, H., "Die öffentliche Bücherei und ihre Leser: Unsystematische Auskünfte zur Benut-

zerforschung" [Public Libraries and Their Users: Nonmethodical Information on User Studies], *Buch und Bibliothek*, **24**, 891–900 (1972).

Heidtmann, Frank, "Neue Aufgaben für die öffentlichen Bibliotheken auf dem Bereich Lesen für den Beruf?" [New Challenges for Public Libraries in the Area of Professional Reading], *Bibliotheksdienst*, **10**, 518–524 (1976).

There is still lack of reliable information for public libraries concerning continuing adult education.

Schöfer, Erasmus, "Wie kommt die nicht-öffentliche Arbeitswelt in die öffentliche Bibliothek? Überlegungen zur demokratischen Nutzbarkeit einer Kultur Institution" [How Can the Nonuser Working Classes Be Brought into the Public Library? Reflections on the Democratic Usefulness of a Cultural Institution], *Buch und Bibliothek*, **27**, 307–315 (1975).

Libraries should undertake more active promotion to reach nonusers, in order to help the self-development of the educationally underprivileged.

Schwartz, Alfred, "Die Öffentlichkeit der öffentlichen Bibliothek" [The Public and the Public Library], *Buch und Bibliothek*, **26**, 925–929 (1974).

Discusses possibilities of improving relationship with users.

MANAGEMENT

Scientific management for public libraries has been advocated to increase efficiency within the organization and regarding services. In 1973 a comparison of management operations in public libraries, representing a cross-section of German public libraries, was conducted, detailed analysis of cost-efficiency relationships presented, and cost-influencing factors identified. Seminars are being conducted on these topics.

Beyersdorff, Günter, and Gabriele Grigo, *Kosten-Leistungs-Analyse in öffentlichen Bibliotheken des Bundesgebietes* [Cost-performance Analysis in Public Libraries of the Federal Area], Deutscher Bibliotheksverband, Berlin, 1974, 255 pp. (*Materialien der Arbeitsstelle für das Bibliothekswesen*, No. 10).

Report on a study conducted in 1973.

Briegleb, Jochen, "Library Management Research in the Federal Republic of Germany: A Survey, *INSPEL: Int. J. Special Lib.*, **11**, 45–55 (1976).

Klaassen, Uta, "Probleme der Betriebsführung in der öffentlichen Bücherei" [Management Problems in Public Libraries], *Buch und Bibliothek*, **28**, 54–55 (1976).

Süberkrüb, Hans-Jörg, "Funktionsgliederung in öffentlichen Bibliotheken" [The Functional Division in Public Libraries], *Mitteilungsblatt Verband der Bibliotheken des Landes Nordrhein-Westfalen* [Information Bulletin of the Library Association of the State of North Rhine-Westphalia], n.s., **26**, 285–294 (1976).

A thorough examination of present problems.

Thun, Hans-Peter, "Moderne Managementformen für öffentliche Bibliotheken" [Modern Management Methods in Public Libraries], *Buch und Bibliothek*, **26**, 984–985 (1974).

Points out the need for scientific management of libraries.

PERSONNEL

Problems of effective personnel management are discussed in the literature, as well as the particular needs in education for librarianship in public libraries. Pro-

fessional education and continuing education are approaching each other more and more until we have the concept of "permanent education."

Professional development is an imminent necessity caused by introduction of new media, developments in society and the sciences, new techniques, increasing user needs for information, and increasing numbers of users with increasing demands on library personnel. German public libraries are still striving to meet the changes in teaching and practice and to adapt foreign experiences, developments, and research for their particular needs. High quality and well-coordinated programs for continuing education of librarians are greatly desired. Manpower projections for public libraries are very difficult to determine, because the ideal figures given in the *Bibliotheksplan 1973* do not take into consideration the unstable economic situation.

Funk, Robert, and Ellen Branthin, eds., *Personalwirtschaftliche Probleme in öffentlichen und wissenschaftlichen Bibliotheken* [Personnel Management Problems in Public and Research Libraries], Deutscher Bibliotheksverband, Berlin, 1975, 249 pp. (*Materialien der Arbeitsstelle für das Bibliothekswesen*, No. 9).

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Wassner, Hermann, "Wie viele Bibliothekare brauchen wir? Überlegungen zu einer Bedarfsprognose für den Dienst an öffentlichen Bibliotheken" [How Many Librarians Do We Need? Thoughts on Manpower Projections for Public Libraries], *Buch und Bibliothek*, **28**, 598–604 (1976).

TECHNICAL PROCESSES

Technical operations of public libraries have been greatly assisted by the Central Buying Agency [Einkaufszentrale für Öffentliche Büchereien—EKZ], whose director since 1946, Herbert Eisentraut, retired at the end of 1975 after developing it into an effective and economically sound service for public libraries, offering a wide range and good quality of material.

Allgemeine Systematik für öffentliche Büchereien [A General Classification Scheme for Public Libraries] (Verein der Bibliothekare an Öffentlichen Büchereien, ed.), 2nd rev. ed., Verlag Dokumentation, Munich, 1977, 192 pp.

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Mevissen, Werner, "Sein Lebenswerk—Die Einkaufszentrale für öffentliche Bibliotheken [*sic*]: Herbert Eisentraut geht in den Ruhestand" [His Life's Work—The Supply Center for Public Libraries: The Retirement of Herbert Eisentraut], *Buch und Bibliothek*, **28**, 60–62 (1976).

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LIBRARY COPYING

German publishers have recently submitted a proposal for remuneration for all types of copying in libraries, regardless of use. This proposal is strongly rejected by librarians, who point out the restriction it would impose on the flow of information for research and the heavy burden on the user of libraries or whoever would be responsible for the charges. Admittedly, this problem requires further discussion for a mutually satisfactory solution.

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Arguments for a uniform system of cataloging for efficient use of the computer.

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Paper presented at the IFLA General Council Meeting, Oslo, August 1975, translated by F. Veit. An expert analysis of the repercussions of installation of automation in libraries.

RESEARCH

Much of the currently ongoing research in librarianship originated in public li-

braries, such as reading research, social psychology of reading, bibliographies, and planning.

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Describes the state of the art of academic and research libraries, but points out that much of the research originated in public libraries.

PROFESSIONAL ASSOCIATIONS

Libraries and librarians of the Federal Republic of Germany are well organized in some 24 associations, of which two are distinctly concerned with public librarianship. They are the Deutscher Bibliotheksverband [German Library Association] and the Verein der Bibliothekare an Öffentlichen Büchereien e.V. [Association of Librarians in Public Libraries].

The Deutscher Bibliotheksverband (DBV) was founded in 1949 as Deutscher Büchereiverband e.V. [Association of German Public Libraries] and assumed its present name in 1973, when it expanded its membership to include research libraries. Its members consist of some 500 institutions and groups supporting libraries. Among its activities are a very extensive publications program and support of planning and improvements of library services. Its monthly journal *Bibliotheksdienst* [Service to Libraries] and the biannual *Handbuch der öffentlichen Büchereien* [Handbook of Public Libraries] are excellent current-awareness tools.

Since the DBV has institutional members only, librarians at public libraries belong to the Verein der Bibliothekare an Öffentlichen Büchereien e.V. (VBB) [Association of Librarians in Public Libraries]. Founded in 1949 as Verein Deutscher Volksbibliothekare [Association of German Public Librarians], it was reactivated in 1949 and assumed its present name in 1968. Its aim is to represent the interests of librarians and to promote public librarianship. Students are included among its 3,000 members. It sponsors conferences and coordinates related professional associations and institutes. Through various activities and an informative professional journal, *Buch und Bibliothek* [Book and Library], the association has become a major voice and forum for public librarians. The theme of its 1976 annual conference was "Bucheinkauf—Buchangebot in Öffentlichen Bibliotheken" [Book Purchasing—Book Promotion in Public Libraries] and discussions ranged from political censorship to the relationship of literature to subject collecting, problems with reduced budgets, and book reviewing. Both library associations were involved in the preparation of the *Bibliotheksplan 1973* [Library Plan 1973], a major document outlining a national library network.

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CONCLUSION

The concept of free public library services has become increasingly accepted in Germany. To serve the growing specialized needs of the users most effectively, public libraries face the future continuing their efforts for bibliographic aids, better information retrieval techniques, and cooperative services.

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An annotated list of works published by or about city libraries in the Federal Republic of Germany.

Deutsches Bibliotheksadressbuch [Directory of German Libraries], Verzeichnis von Bibliotheken in der Bundesrepublik Deutschland einschliesslich Berlin (West) (Deutsche Bibliothekskonferenz [German Library Conference], ed.), 2nd ed., Verlag Dokumentation, Munich, 1976, xi, 498 pp.

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Belgium

Public libraries in Belgium have the difficult task to serve a population of various language groups, the Dutch-, French-, and German-speaking communities. Belgium

is politically a young country, which gained independence at the beginning of the 19th century, but it has an old and rich history of culture and civilization. Public libraries, depending on the language group, are now under the supervision of two different Ministries of Culture, and each ministry is advised by a Council on Public Libraries. New legislation has been in preparation, which should help in solving some of the major problems facing public libraries: reform of tax laws to ensure financial support of libraries, protection of ideological minorities, and strengthening of resource sharing and library cooperation.

Ideological and political struggles in the 19th century led to the development of different kinds of libraries, Catholic and liberal, and in the early 20th century, socialist libraries. A Library Act was passed in 1921, defining the responsibilities of local authorities for establishing and maintaining libraries. This led to the founding of a large number of independent libraries, each depending on the goodwill of the local authority. This situation retarded movements toward coordination of library services, and new, revised legislation is urgently needed to modernize the public library structure.

Since 1970 Belgium has operated under the principle of cultural autonomy, which enabled the two linguistic communities to develop their own cultural policies. A bill was presented to the ministry in 1972, which will reorganize public library services in the Dutch-speaking part of the country, but due to the complexity of the situation, progress in realization is slow. There are 1,391 public libraries in five provinces belonging to 308 independent municipalities. Under the proposed bill, a Dutch-speaking National Center for Public Libraries, seated in Antwerp, will coordinate public library services through regional centers, and within 10 years all public libraries are expected to be incorporated into this general network. Another development has taken place, namely, the concept of cultural centers, in which the libraries form a central part. Thirty such centers are now in existence. A Flemish Library Center was founded in Antwerp in 1976, which provides centralized technical services to public libraries in the Dutch-speaking part of the country.

A total of 1,221 public libraries serve a French-speaking population of over 4 million. The Ministry for French Culture and the Cultural Council of the French Cultural Community are working on plans to develop the public library services.

The professional library associations reflect the dual system, serving either the French- or Dutch-speaking librarians, or both. The Vlaamse Vereniging van Bibliotheek-, Archief- en Documentatiepersoneel (VVPADP) [Flemish Association of Librarians, Archivists and Documentalists], established in 1921 in Antwerp, has 500 members and represents the professional concerns of the Dutch-speaking librarians from all types of libraries. It publishes an official journal, *Bibliotheekgids*, with articles and professional news. Since 1974 the association has conducted special training programs for librarians in small public libraries. French-speaking librarians belong to the Association Professionelle de Bibliothécaires et Documentalistes (APBD), which was established in 1975 after the death of Louis Baltus, the founder (1964) of its predecessor, Association Nationale des Bibliothécaires d'Expression Française (ANBEF).

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France

Librarians in France were greatly concerned when their central government agency, the Direction des Bibliothèques et de la Lecture Publique [Agency for Research- and Public Libraries] was dissolved by the government in summer 1975 so that libraries came under the jurisdiction of two different ministries: public libraries under the Secretariat of Culture, and research libraries under the Secretariat of State for Universities. This separation divided formerly mutual areas of cooperation. An exception was made for library education, which continues to be the same for all types of library work. The impact of these events on library development and services cannot be foreseen yet.

The secretary of state for the universities, J.-P. Soisson, discussed the future pattern of French public libraries at a Conference on Public Libraries in Nice in May 1975. He outlined his viewpoints, upon which future government decisions affecting public libraries will be made: Libraries are part of the social strategy; they must participate fully in local cultural life. Librarians must rethink their role in more

dynamic terms. New types of libraries are required, which will be more inviting and wider-ranging in their offerings. The new public reference library in Paris will be a prototype for other libraries. More libraries are needed, and a national loan service, with regional cooperation, is to be created ("Colloque sur la lecture publique").

An important development is the reorganization of public library services into a system of "sector" libraries, each serving a population of 80,000 to 150,000 inhabitants, and generally covering the area of an *arrondissement* ("district"), combining the services to several small towns. The sector library would consist of an administrative center and central library in the chief town of the district; branches in suburbs, smaller towns, schools and other institutions; and bookmobiles for rural areas and smaller elementary schools. The sector libraries are grouped into 21 regions. A regional library would operate a program of training and inspection and provide bibliographical services. A national committee would determine overall policy. The passage of a public library law has been urged for setting up the principles and provisions for the establishment of such sector libraries, a regional authority, and a national library council.

Francis Gueth, president of the Public Library Section of the Association of French Librarians [Association des Bibliothécaires Français] has urged a gradual approach to the long-term aim of creating sector libraries. In the transition period until full realization, attention should be given to improving existing services, with financial aid by the state to local authorities. Furthermore, the responsibilities of Bibliothèques Centrales de Prêt [Central Lending Libraries] should be more clearly defined, particularly their bookmobile services to small towns.

A reorganization of public library services has been taking place in the city of Paris, which is in the unusual situation of not having a central library. Up to 1960 the public library system consisted of a number of inadequate district libraries, with hardly any coordination, and six subject reference libraries. The city's Library Department plans a network of 56 new libraries, 14 of which have already been built, and 12 more are due by 1978. In 1971 the Technical Service was founded to provide public libraries with centralized services for ordering, cataloging, staff library, and printing. Circulation figures have risen by 21% since 1965. The creation of a large literature and philosophy reference library is under consideration, so that subject libraries would cover all disciplines and be equivalent to the otherwise more common single central library. Since 1960 a long-term program for the development of public library facilities in Paris has been prepared, which includes the construction of a large central library in each *arrondissement* and the replacement of neighborhood libraries by sector libraries serving about 35,000 inhabitants. This constitutes an unprecedented financial investment in the public libraries of Paris.

In 1967 the lending of gramophone records was introduced and proved extremely popular. The record library has gained acceptance in France, and although currently it is mostly a specialized department, integration into the library collection is under consideration.

Grants-in-aid to public libraries by the French government have risen from 6.5 million francs in 1965, to 65 million in 1975. The Bibliothèques Centrales de Prêt, which are wholly government financed, cost over 25 million francs and number 70

services. The government further subsidizes bookmobiles (167 units compared to 128 units in 1965).

Mr. Gueth took further issue with the so-called Granet Committee Proposal. Paul Granet, the government minister heading a committee of inquiry into the book world, submitted a proposal to help writers, publishers, booksellers, and librarians. Gueth charged Granet with lack of knowledge of public libraries and failure to consult with the professional association. The proposals criticized are: the promise of state aid to the book trade but not to libraries, the recommendation that towns use an incredibly low 0.1% of their budgets for libraries, that libraries use more volunteer workers, and that publishers' remainders be channelled to libraries ("Pour un plan de développement des bibliothèques publiques françaises").

In a historical survey of public libraries in France, "Histoire de la lecture publique en France," Noë Richter reemphasized the basic functions of public libraries: conservation, information, documentation, education, and recreation.

Two professional associations support the endeavors of librarians in public libraries: The Association Nationale pour le Développement des Bibliothèques Publiques (ANDBP) [National Association for the Development of Public Libraries], founded in 1971, aims to give all French people easier access to information, culture, and lifelong education by promoting the development of networks of modern public libraries. The Association des Bibliothécaires Français (ABF) [Association of French Librarians] brings together all librarians regardless of type of libraries. With a membership of 1,800 individual and 600 institutional members it is the largest library association in France. Its official journal, the *Bulletin d'informations*, with national and international professional news and reports, appears quarterly. Another important library journal is the monthly *Bulletin des bibliothèques de France*, which is published by the two ministries in charge of libraries and edited at the Bibliothèque Nationale [National Library] in Paris. It contains informative articles, accounts of modern libraries, yearly statistics on various types of public libraries, and an extensive book review section.

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Italy

The effective development of a public library system in Italy has been restricted by social, economic, and political factors. The need for surveys and studies to support national planning is emphasized in the professional literature, in order to create an efficient library network through centralization of some operations; improvement of services to individual readers; and reform of legislation in communities and regions, to ensure greater financial support and to permit greater resource sharing of books and other library material. Since many public libraries, especially those in large cities, have to support the care and maintenance of valuable collections in their holdings from their rich cultural heritage, a considerable amount of

their efforts has to be devoted to conservation and care of these materials. They are also of value for research and thus a different relationship and closer association between academic and major public libraries has existed, and improved bibliographic control of these materials is highly desirable. Carpenter observed in his study of Italian libraries that, if a nation is to enjoy superior library services within severe economic restrictions, it is important to maximize cooperation in terms of policy toward patrons, in sharing resources, in acquisition and control of resources, and in education and maintenance of staff. Innovation in public libraries could combine the work of the specialized, computerized information centers (especially social science data banks) which have developed in Italy, and could bring academic and public libraries together in a union beneficial to all.

Contributing to the development of public libraries is the work of the Italian Libraries Association, the Associazione Italiana Biblioteche (AIB), whose 900 individual and 400 institutional members combine all types of libraries in one organization. Through its various activities it has been instrumental in improving library services throughout Italy and strengthening professional commitment.

Although no national library legislation for public libraries exists, the legislative power regarding libraries has been delegated to the regions since 1972, and is no longer centralized in the state. There has been progress in public library development through the creation of regional library systems, but now a coordination of these regional laws to ensure uniformity in standards is under preparation. The number of public libraries has more than doubled in the last decade, from about 1,000 to over 2,000. The greatest efforts will now be spent to overcome the economic and cultural inequities in the various regions of Italy in order to create an efficient public library service.

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Netherlands

The existence of three types of public libraries—general, Catholic, and Protestant—has been a unique characteristic of the Netherlands. However, cooperation between denominational libraries locally, and between religious organizations on higher levels, has led to a consolidation of such libraries in many places. Yet the new Library Act, submitted in September 1972 and enacted on July 1, 1975, does not abolish these types of public libraries, but, as a compromise, adds a fourth type, a so-called joint library. The arguments given by the ministry are that the standards of the new law are so high that counties and municipalities could not possibly consider anything but a joint library. The new law also provides increased financial subsidies by the government, and will allow 15 years for the standards to be achieved. The Library Act states that public libraries should have their general collections available to all segments of the community, and in accordance with the concept of the "open school," the government sees libraries as the bridge between school and lifelong education.

Public library activities have grown considerably, based on a survey for 1967 to 1974, especially in the number of users, with youth membership growing faster than adult use. Readers in the Netherlands pay a fee for library services. The sizes of collections and number of staff have not grown in proportion to increased use. The new Library Act, which provides financing for salaries, will hopefully improve this situation.

Public libraries are aided by the Nederlands Bibliotheek en Lektuur Centrum (NBLC) [Dutch Center for Public Libraries and Literature]. Founded in 1972, it provides a Service Center to improve the efficiency and quality of library work. It has 1,969 individual and 659 institutional members. An active publication program produces a number of review journals for various types of public libraries. Its official journal, ***Bibliotheek en samenleving*** [Library and Society], has a circulation of 4,000. The support for the passing of the Library Act of 1975 was perhaps its most important accomplishment.

Bibliotheek en samenleving is jointly published with the Dutch Association of Librarians [Nederlands Vereniging van Bibliothecarissen—NVB], which includes librarians from all types of libraries and has a membership of over 2,200 individuals and 230 institutions.

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Switzerland

Of great impact for the development of public libraries was the founding of the Schweizer Bibliotheksdienst [Swiss Library Service] in 1969. This central agency, modeled after the successful Danish example, is an example of the cooperative efforts of librarians belonging to a public library system characterized by a number

of problems. Switzerland is divided into four distinctive language areas. The political division in cantons created different levels of cultural development and historically emphasized individualism. There are marked religious differences. The large number of small communities (over 3,000) of roughly 2,000 inhabitants assure Switzerland's political stability, but are unable to carry the financial burdens for support of strong libraries. There are a large number of commercial enterprises competing for the library market. In view of these difficulties, the achievements of this central agency are remarkable, and thus centralized technical services are available to all public libraries.

Librarians from all types of libraries are united in the Vereinigung Schweizerischer Bibliothekare (VSB) [Association of Swiss Librarians], whose official title is in German, French, and Italian and to which 725 librarians and 184 libraries belong. Public librarians are further organized in Schweizerische Arbeitsgemeinschaft der Volksbibliotheken [Swiss Working Group for Public Libraries], a subdivision of the general library association. The official journal *Nachrichten/nouvelles/notizie VSB/SVD* appears bimonthly and covers all areas of library activities. The Association of Swiss Librarians aims for effective cooperation among all types of Swiss libraries and furthering the professional development of its members. Its latest publication, *Bibliotheken in der Schweiz* [Libraries in Switzerland], documents the high standing of library development and professional commitment of librarians in a culturally rich country.

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Conclusion

From these brief highlights of some of the recent developments in public library services one is impressed by the vigor and devotion with which librarians in these parts of Europe pursue their professional commitment to give the user the best service and to be prepared for the continuous social, economic, and technical changes.

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JOSEPHINE RISS FANG

CONTEMPORARY LIBRARIES IN LATIN AMERICA*

Introduction

The vast portions of land between the Rio Grande and Tierra del Fuego—commonly designated as Latin America—encompass 18 Spanish-speaking nations in the Caribbean and in North and South America; and Portuguese-speaking Brazil, French-speaking Haiti, and Spanish-speaking Puerto Rico, because of unique historical and cultural ties. In its broadest sense, Latin America could also include the newly independent English-speaking nations of Jamaica, Guyana, Trinidad and Tobago, and Barbados. In this study we have excluded the English-speaking ter-

* The References for this section appear on page 442, and the Bibliography begins on page 443.

ritories and Haiti. Our purpose is to give a panoramic view—and some highlights—of the development of public libraries in 20 American nations, and this article will focus on the history, progress, specific functions, and current status of these social agencies. Because a detailed evolution of public libraries in each nation is not feasible within the scope of this article, we offer an annotated bibliography, one which will lead readers to further documentation and more in-depth information. We also offer, in Appendix 1, a chronology of general library developments in Latin America.

Latin America: The Setting

Many people think of Latin America as a homogeneous, monolithic whole where everyone speaks Spanish; eats tortillas with chili; dances the samba and the tango; exports Latin lovers, sugar, and bananas; indulges in revolutions; and where the indigenous population has all but vanished. This is hopefully a Woody Allen, tongue-in-cheek picture of an otherwise complex conglomerate of countries with a population which fluctuates between 250 and 280 million people who speak Spanish, Portuguese, French, English, and many languages of the Indian inhabitants, particularly Quechua and Aymará (from Ecuador to Argentina). Statistics suggest that between 27% and 30% of this population cannot read the alphabet.

From Mexico to Tierra del Fuego, nature offers some of the world's highest ranges of mountains; extensive and still unexplored jungles; great portions of deserts, pampas, and glaciers; fertile valleys and virgin forests. In an area of almost 19,000,000 square kilometers the population is distributed so unevenly that it has caused major problems in the material and spiritual development of its people. Enormous distances, lack of good roads and highways, antiquated transportation and communication facilities, and the concentration of the population in the capitals have been detrimental to each nation's economy. Dramatic shifts from rural to major urban areas have taken place in the last few decades and are particularly noticeable in such cities as Lima and Mexico City. One solution was the foundation of Brasilia, in 1960, as the best example of government and political decentralization. But in general, the capitals of most Latin American countries are the cultural, educational, economic, political, and bureaucratic centers and the hearts of the nations, leaving the rest of the population, and particularly the peasants in the provinces, to fend for themselves. Similarly, there exists a formidable cultural schism between a learned minority and the illiterate and semieducated masses. Within this disproportionate picture—which combines high birthrates and low life expectancy, a low per capita income (some estimate about one-fifth that of the United States and less than one-half that of Western Europe), and a 65% illiteracy rate or more in such countries as El Salvador, Paraguay, Haiti, Guatemala, Honduras, and Bolivia—we find nations rich in natural and human resources. Brazil occupies nearly half of the South American continent, has a population of almost 100,000,000, and is, in itself, a country of powerful social and cultural contrasts; Argentina boasts a world renowned opera house in its sophisticated, European-like capital; Chilean and Guatemalan authors have given to the world three Nobel Prizes for Literature; Mexico is the cradle of 20th-century mural paintings with Rivera,

Orozco, and Siqueiros; Venezuela possesses a formidable petroleum industry. Since their independence, Latin American nations have wavered between governmental stability and chaos, between long periods of progress and prosperity and times of natural disasters and violence, and have endured chronic inflations that run as high as 20% to 30% a month. And they have endured the corruption and obstructionism of well-entrenched bureaucracies and a climate of widespread social inequality. All of this seems to offer no other alternatives but Marxism, a democratic socialism, or some kind of dictatorship.

In the midst of such geographic, socioeconomic, cultural, and political diversity and extremes, the nature and role of education cannot be clearly assessed. Despite ideal pronouncements, a myriad of well-intentioned decrees, lofty essays, and the pioneer work of a few, education remains a low priority concern among Latin American governments. In this context, library resources and services have received less attention than they deserve. Indeed, many educational authorities are still not aware of the importance of libraries in the development of an enlightened citizenry. One suspects that beyond strict economic considerations, the ruling classes have always been aware of the power that information yields and have been reluctant to allow the masses to participate fully in the decision-making processes of a nation. While analyzing the historical roots and surveying the general progress of librarianship in all Latin American nations, it is also possible to infer that public libraries—to a greater or lesser degree—have developed along parallel or similar lines.

The Colonial Period: Historical Background

The Spanish language, a racial heritage basically the same except for the indigenous population, Catholicism, and Spain's and Portugal's peculiar institutions provided the framework in which much of Latin America's political, social, and educational development took place. Between 1492, when Columbus discovered the so-called Indies, and the heyday of independence movements during the first decades of the 19th century, Spain and Portugal stood fairly unchallenged.

The Holy Roman Empire of Charles V marked the end of the medieval age and foreshadowed the cultural and political revolution caused by scientific discovery and the rise of nationalism. It was characterized by the Ptolemaic universe just on the threshold of considering the ideas of Copernicus, the Catholic universe before the Protestant revolt, and a more vigorous middle class beginning to undermine the power and influence of the aristocracy. Reason was resisted by Faith.

> In this great cultural crisis Spain chose to maintain orthodoxy in social, intellectual, and religious matters. . . . Thus a medieval civilization, revering intellectual and spiritual as well as political authority, acquired a new lease on life and became the heritage of modern Hispanic America *(1)*.

This reverence toward authority points to the most important difference between the cultural and political development of Hispanic America and the English colonies. From the very beginning, the Pilgrim Fathers worshiped according to their

own conscience. They had come in pursuit of freedom of worship and they concluded by worshiping freedom. Not so in the Spanish colonies. Absolute monarchy and the Catholic faith were safeguarded for more than three centuries by the diligent supervision of the viceroys and the Church. Their dominance was further assisted by the Indian population, which became the serfs of the conquistadores and thus facilitated the continuance of an aristocratic feudal system. Spain's strong control over her colonies made it difficult for the Hispanic possessions to become independent. And even after the American and French revolutions—when the winds of freedom and insurrection had caught the imagination of Francisco Miranda, José de San Martín, Bernardo O'Higgins, and Simón Bolívar; long after 1810 when several countries declared their independence—Spain would remain the most important shaping factor of Hispanic America's intellectual, economic, and social values. Between 1500 and 1800, when the world witnessed far-reaching scientific discoveries which brought the Western Hemisphere to the dawn of the modern era, Spain's tutelage of Hispanic America made it almost impossible for the colonies to profit from these new trends.

> In North America democracy was able to thrive with the gradual rise of a people who considered themselves equals and had only to scale economic class barriers. In Hispanic America, on the contrary, the totally dissimilar cultures of the conquerors and the conquered and the semifeudal order established through the institution of the *encomienda* accentuated caste differences *(2)*.

The expulsion of the Jesuits from the Spanish territories in 1767 only set a further precedent for absolute power. Although the Spanish and Portuguese monarchies have been characterized as orthodox and dogmatic, they did nevertheless allow for expressions of cultural growth among their colonies, which would set the stage for important historical and bibliographical developments.

Little is known about recordkeeping among the indigenous population of the New World. Documents have been preserved in the form of bas-relief, pictographic script or hieroglyphics, and inscriptions—particularly on maguey and agave bark. The civilizations of the Mayas, Aztecs, and Incas developed sophisticated methods of land technology, produced an enormous body of art and architecture, and had advanced notions about mathematics and astronomy. Unfortunately, most of the records of these cultures were destroyed during natural disasters, sudden resettlements, or wars.

We know that the first printing press about which sufficient and reliable information exists was set up in Mexico City in 1538 and that the first pamphlet, printed by a Juan Pablos, appeared in 1539. In South America, the first city to possess a printing press was Lima, capital of the Viceroyalty of Peru, the richest and most cultivated Spanish colony in that southern area. The first product of the printing press in South America appeared in 1584, the work of the Italian typographer Ricardo Antonio.

Education in the Spanish and Portuguese colonies was largely initiated and supported by the Church, which also controlled the curricula, provided nearly all the teachers, and built the universities, seminaries, and elementary and secondary schools [*colegios*]. There was no attempt to extend the benefits of education to all

the people. Higher education eventually played a more important role in the colonies since there was a nucleus of prosperous Spaniards and Creoles who wished their sons to become royal officials or churchmen. The first university established in the Spanish colonies was founded by a papal bull in 1538 when a Dominican college in Santo Domingo was authorized to call itself the University of Santo Tomás de Aquino. But the two most prestigious universities were those of Mexico City, established by the Emperor Charles V in 1551 and opened in 1553, and the University of San Marcos, in Lima, founded by a royal decree of September 21, 1555 (*3*). From its inception, the latter became the center of learning in the South American colonies and has not experienced any significant interruption in its development since then. Twenty-six universities were founded in Hispanic America during the 18th century.

The humanistic role played by the Society of Jesus in the cultural development of the Spanish colonies cannot be overemphasized. During the 17th century the Society of Jesus had become the "foremost cultural organization and one of the strongest economical and political forces in the whole colonial world" (*4*). The Jesuits' social and political thinking was dangerously ahead of their times. Some of the most important scientific works produced in Hispanic America were the products of the inquisitive minds of the Jesuit fathers. Members of the Society of Jesus founded schools and missions from Mexico to Chile; they taught thousands of Indians to read and write, and trained them in the manual arts. Their dispersion in 1767 weakened the Catholic monarchy in Hispanic America and contributed substantially to the final defeat of the Spanish conqueror decades later.

As we have noted above, education in Latin America was addressed to a small segment of the population and was supervised exclusively by religious orders. There existed no clear-cut distinction between their evangelical, educational, and social motives. The first libraries in Latin America were established during the 17th century by the Jesuits, Mercedaries, Franciscans, Dominicans, and Augustinians, for the support of secondary education. The following Latin proverb was used in relation to the colonial monasteries: *Claustrum sine armario, quasi claustrum sine armentorio*, signifying that "a monastery without a library is like a bastion without an arsenal." The subjects taught in these monasteries did reflect the formalism of the medieval curriculum which gave little if any impetus at all to scientific investigations. The pursuit was hindered not only by political and religious censure but also by difficulties in obtaining books and in distributing the rare original studies which circulated among a small intellectual elite in manuscript form.

One activity in particular, the smuggling of books and manuscripts into the Spanish colonies during the 18th century, helped to change this situation. The contraband trade in printed matter—including much fiction—seems to have been more influential than was formerly assumed. Francisco Antonio de Rojas, "one of the forerunners of Chilean independence . . . had the audacity to have the Inquisition itself stamp the boxes in which he was importing, bound under religious titles, the writings of Voltaire, Rousseau, and the much feared Encyclopedists. But his case was certainly not unique in the last days of the colony. The virus of reading had already infiltrated into American habits" (*5*).

In general, reading materials during the colonial period were supplied by the

Church, the foreigners, the Creoles who could travel abroad, and through contraband. In conclusion: intellectual growth in Latin America was reflected in the monasteries and in the private libraries of the high-ranking government officials, lawyers, and clergymen, who filled their bookshelves with legal, theological, and philosophical treatises, although the spectrum of reading by the end of the 18th century included works of fiction as well as art and science.

First Antecedents of Public Libraries in Latin America

The wars of independence against Spain and Portugal, during the first decades of the 19th century, led the new republican governments to grasp the necessity of education in the formation and consolidation of a nationality. But the ideals of some of the learned and influential citizens of the period confronted a major obstacle in the Creole bourgeoisie, who emerged with the same political and economic power their Spanish ancestors had possessed prior to their political independence. Where the liberal ideas of Voltaire led part of Europe and the United States to a democratic bourgeois revolution, in Latin America they merely led to political independence from Spain. During a period when the parish, social, and semipublic libraries in the United States were having a great impact upon the education and democratization of that nation, the progressive military leaders and intellectuals in Hispanic America were trying to formulate and put into practice new educational policies. The majority of the public documents, letters, and essays penned by the founding fathers of the Latin American nations seem to agree that a solid education leads to the development and understanding of such values as liberty, justice, and equality, which form the basis for a stable and democratic process in any civilized nation.

Some of the first steps taken by the newly independent countries and their political regimes were to establish freedom of the press, to consolidate religious academies and universities into national institutes of higher learning, and to create national libraries with the volumes confiscated from the religious orders or donated by the patriots. This confiscation and donation of books and manuscripts resulted in the creation—mostly through special legislation—of the first national and/or public libraries in Latin America. At the present time all the nations, except the Dominican Republic and the Associated Free State of Puerto Rico, possess a national library. Their background, creation, organization, progress, sometimes dismissal, and frequent reorganization have been documented in innumerable articles, essays, books, and dissertations, many of which are mentioned in the selected annotated bibliography included with this article. See also Appendix 2, which lists the national libraries with dates of foundation.

The Public Library During the 19th Century: Domingo Faustino Sarmiento

The Argentinian politician, pedagogue, and writer Domingo Faustino Sarmiento (1811–1888) was the first South American intellectual to fully grasp the potential

of the public library as an instrument for the continuing education and self-development of the people. He was a man of strong convictions, and throughout his life he laid special stress on education, particularly while he was in charge of the Departamento de Escuelas del Estado de Buenos Aires [High Schools Department of the State of Buenos Aires] and later, as president of Argentina, 1868–1874. His influence was felt throughout Latin America, but his legacy was strongest in Chile and Argentina. During the cultural renaissance which followed Chile's independence and after the demise of the Argentinian dictator Juan Manuel de Rosas, in 1852, no one influenced both nations' attitudes toward elementary and secondary education more than Sarmiento. Of particular interest was his role in introducing in Chile and Argentina the North American concepts of universal education and public libraries, which brought to the former Spanish colonies the ideals of a Protestant society which believed that all men were endowed with unlimited rational capacity and possessed the right of access to all kinds of publications in order to acquire knowledge.

Sarmiento read with passion. According to autobiographical and biographical sources, two books in particular were influential in shaping his thoughts and attitudes toward education and libraries in the United States: Alexis de Tocqueville's *Democracy in America* and Benjamin Franklin's *Autobiography*. From the latter he learned about the existence in England of reading clubs which loaned books to their members. Franklin had transferred the idea to the British Colony by founding the Library Company of Philadelphia in 1731. When Sarmiento arrived in the United States for the first time, in 1847, public libraries were not yet in vogue but he was impressed by the conglomerate of social libraries—the Athenaeum, the subscription and proprietary, Sunday school, school district, mechanics, mercantile—which played a substantial role in the enlightenment of the citizens. He became convinced that the most immediate remedy for Hispanic American weaknesses was primary and secondary instruction for everyone and that the creation of public libraries was a necessary complement to education. This first brief visit to the United States was to be Sarmiento's most important experience in forming his pedagogical and educational programs. In great measure, this was a result of his encounter with Horace Mann, then secretary of the Massachusetts State Board of Education, a lawyer who combated slavery with fiery speeches, proposed (for the first time in the United States) general education for every individual, and instigated some of the most farsighted educational legislation the United States had ever experienced. Two days together in the small village of East Newton, near Boston, were sufficient for each of these two minds to understand and admire the other. Although they would not meet again, it is certain that "few friendships have had a more transcendental effect on the cultural life of this hemisphere. Mann in the North and Sarmiento in the South were to effect a triumph of popular education" (*6*).

The second visit of Sarmiento to the United States would further influence his ideas on popular education and the role of public libraries. The creation—by a group of concerned citizens and the local government—of the Boston Public Library, in 1850, followed by a proliferation of similar institutions across the nation, astonished him. Furthermore, he became aware of several developments which were

related to each other: the abundant availability of printed materials; the beginnings of a strong, unified library movement; the participation of citizens in the support of libraries; the concept of the library as the "people's university"; and the influence that the public library had on the civic education of the citizens of the United States (*7*).

During Sarmiento's presidency (1868–1874), Argentina became the site of some of the most innovative educational experiments in Hispanic America. He began the systematic distribution of reading materials to every corner of his country through the creation of nearly 2,000 libraries. He was convinced that no school should function without a library and that no social progress was possible without schools. Sarmiento stated as early as 1877 that:

> It is not without reason that we place schools and libraries on the same footing, for the latter follow the former, and have developed simultaneously with the development of education. Thus the public library has become incorporated in the machinery and material of public education; for the first time, it forms part of the social organism, in the same way as the free and compulsory school *(8)*.

Sarmiento published *De la educación popular* [On Popular Education] in 1848, an official report to the government of Chile about his experiences and observations in Europe and the United States. This publication, and Sarmiento's ideas about popular libraries, led the administration of Chilean President Manuel Montt to establish—through decree of January 16, 1856—public or "popular libraries" in the capitals of every Chilean province and other cities as well. Each was generally organized as an adjunct to some high school. In a speech given during the opening session of the National Congress, on June 1, 1858, Manuel Montt said that "the establishment of popular libraries, however modest, is destined to exercise in the future a great influence in the enlightenment of the masses" (*9*). The fiscal budget for the year 1859 allocated funds for the support of these popular libraries and for the publication of textbooks and well-known literary classics. A decree of November 24, 1860, concerning primary instruction, did provide funds for the further development of these libraries; however, it would take another three decades before every municipality was required by a decree of December 22, 1891, to open public libraries in order to serve the educational, recreational, and intellectual needs of their constituencies. In general, their meager and badly kept collections did not survive very long.

In Argentina, Law 419, entitled *Ley de protección a las bibliotecas populares* [Law for the Protection of Popular Libraries], was promulgated September 23, 1870. This decree, issued during the presidency of Sarmiento, legalized the so-called public or popular libraries already in existence and provided new mechanisms for any interested group of neighbors to establish local libraries. At the same time this law created a commission for the promotion and inspection of these agencies. The commission proved ineffectual and was reestablished by decree of July 3, 1908. Unfortunately, by 1910 Argentina had only 191 popular libraries left in all its territory (*10*).

Scholars of the past and present have often discussed the role of this sudden

proliferation of libraries in Argentina. It is widely believed that their influence was negligible, because very soon they were scattered to the four winds. Yet, the concept of the public library had been brought to the South American continent, especially to Chile and Argentina. There is no doubt that Horace Mann's idea that a nation's growth depends upon the high quality of its citizens, something which can only be achieved through universal education, greatly influenced several South American countries, especially Argentina, for Sarmiento once stated that from the United States "came the spark that lit the lamp of our schools" (*11*).

Sarmiento sought to transplant to Latin America the public library model and structure from the United States rather than from Europe. In spite of his influence and perseverance, new educational currents—particularly from France and Germany—during the last decades of the 19th century undermined the remaining influence of this enlightened Argentinian and his disciples. In most cases, national and public libraries in Latin America adopted European library models—including aspects of cataloging and classification—some of which have survived to the present day, to the detriment of a more dynamic flow of information.

Another figure of international stature, comparable to Sarmiento in the area of educational reforms and their impact on the creation of libraries, was the Mexican José Vasconcelos (1882–1959). This statesman, educator, writer, and librarian was an extremely successful minister of education (1921–1924) and introduced important educational reforms with the help of such figures as the Dominican linguist and literary critic Pedro Henríquez Ureña (1884-1946), and the Chilean educator, poet, and 1945 Nobel laureate Gabriela Mistral. In 1922 Vasconcelos established a Departamento de Bibliotecas [Library Department] within the General Office of Higher Education and Investigation, a subdivision of the Secretariat for Public Education. The Uruguayan educator José Pedro Varela (1845–1879) should also be mentioned as a contributor to the development of school and public libraries, inspired not only by his visit to schools in the United States, but also influenced by Sarmiento.

From the most southern part of the Western Hemisphere to Mexico, the idea of popular or public libraries as essential agencies for the support of the education of the masses was preeminent in the minds of several Latin American political and intellectual leaders. Nonetheless, its impact—particularly during the 19th century and the first decades of the 20th—never transcended the verbal pronouncements of highly placed government officials or the farsighted attempts of a minority.

Toward a Definition of Public Libraries in Latin America

A great amount of confusion exists when one tries to define the concept of *public libraries* in Latin America. A realistic definition of these very unique educational agencies will largely depend upon an author's perception of how the society he is describing works. If we survey the historical, cultural, and educational progress of Latin America, we find that public libraries have been defined so loosely that in most cases ambiguity has hidden reality while purporting to clarify it. The authors

who have written about this topic have either adopted the labels given by Latin American historians or librarians, or have borrowed foreign models—mostly from the United States and Western Europe—and have adapted them, consciously or unconsciously, to their own needs. In almost every case, no attempt has been made to define the nature and meaning of public libraries *in Latin America*. Probably the greatest source of confusion in this area stems from the fact that in the United States the public library has a definite purpose and structure—tax- and community-supported, governed by its own authorities—and plays a very unique role among different types of libraries. In Latin America, the dearth of library resources for purposes of education, information, and entertainment has led to a different pattern. Any agency in Latin America which can boast a readily available, or even a badly organized, collection of books and other materials becomes by default a so-called public library. Since the foundation of the first libraries after independence, Latin American library administrators—many of whom were political appointees or writers—have faced the constant dilemma of trying to manage academic, national, special, or government libraries and archives which must also serve the needs of high school students and the adult population. This situation remains largely unresolved. The more concerned and militant contemporary Latin American librarians have espoused their strong belief that since governments do not encourage the creation of public libraries in sufficient quantities, existing book collections, no matter what type, should be made accessible to all, especially the poor. It is not extraordinary to find that even bank libraries in almost every Latin American republic serve a public of various ages. For example, one of the best public libraries in Latin America—the Biblioteca Luis-Angel Arango, in Bogota, Colombia, which contains approximately 170,000 volumes—is financed and operated by the Banco de la Republica [Bank of the Republic].

A comprehensive picture of the variety of agencies considered "public libraries" in 20th-century Latin America has been given in a study which analyzes the present status of public libraries in Mexico (*12*). *Bibliotecas públicas* [public libraries] are those maintained by public or private funds and opened to the public. Six categories are enumerated:

1. *Biblioteca pública general* [general public library], open to children, adolescents, and adults in search of all types of materials and information.
2. *Biblioteca pública especializada* [specialized public library], open to specialists. This type would include libraries supported by private associations or binational or multinational institutes.
3. *Biblioteca pública universitaria* [university public library], dependent upon a university or higher education institution and which also assumes the responsibilities of a general or special public library.
4. *Biblioteca pública escolar* [school public library], a type which operates as an annex to a high school [*escuela*] and offers services to the general public with direct access from the street.
5. *Biblioteca pública juvenil o infantil* [children's or juvenile public library], organized to serve this young group.
6. *Biblioteca popular* [popular library], which can be included in the category of the general public library.

Before independence the foundation of every major library had been accomplished through the merger of the eclectic book and manuscript collections held by the Jesuits before their expulsion from the colonies in 1767 and the collections of other religious orders, plus the donations of wealthy merchants and educated patrons. The consolidation of all these materials led to the creation of every national library and public library in Latin America. Because of the broad nature of these collections, national libraries became not only the repositories of the nations' intellectual heritage but their first public libraries as well. This dichotomy—preservation and service—led to the inevitable mishandling of important historical materials and the disruption and inefficiency of library services (*13*). It should be noted, however, that public libraries, in the sense of serving several types of patrons and even having borrowing privileges, existed prior to independence. A few examples will suffice. The *cabildo* [town council] of Santa Fe, Argentina, decreed in 1774 the creation of the first public library in that country. In Colombia, the Biblioteca de la Real Audiencia [Library of the Royal Court] opened a collection to the public on January 9, 1777, at the old Jesuit seminary. In Ecuador, the University of Santo Tomás made its collection available to the general public on May 25, 1792. In Cuba, the Sociedad Económica de Amigos del País [Economic Society of Friends of the Country] established an open collection in a private home.

Maybe the most ambiguous term here is the word "public," for it implies (as in the United States and Western Europe) open access for every citizen, regardless of social status, race, or religion. In Latin America, however, most public libraries before and immediately after independence had been patterned after the lending, social, or athenaeum library, where books were loaned to members only. A picture emerges from the earlier development of the public library in Latin America of a reading room which occasionally offered loan privileges and with holdings consisting mainly of newspapers, weeklies or journals, and books of a recreational nature. Public libraries also implied any collection open, however irregularly, for public use. And, irregular hours they were! Sometimes a couple of hours, once or twice a week; sometimes several hours a day, divided between morning and late afternoon hours; in a few cases, evening hours; and almost never on weekends. In many instances, schedules were left to the whim of the functionaries in charge. For example, the director of the Biblioteca Pública de Buenos Aires determined in 1812—despite strong criticism from the local press—that his library would be open from 8 A.M. to 12:30 P.M., 5 days a week. He explained that to open during evening hours was impossible because he lacked personnel and because of his poor state of health. Moreover, he stated that reading in the early afternoon was detrimental to a good digestion (*14*).

Although many documents of the 19th century declared the right of *every* individual to use public or popular libraries, only the middle and upper class made good use of and supported them. Library regulations at the Biblioteca Nacional, in Santiago, Chile, specified that only the librarian and his aide could take books and handle them in the closed stacks, and that once the patron had finished reading a book, he "should return it personally to the same attendant who gave it to him" and that "the patrons will keep silent and quiet, and there should not be disturbing

conversations nor disputes in the Library and . . . no servants can enter Library rooms where books are shelved, and the master who came accompanied by them, will leave them outside" (*15*).

Along with the ambiguity of the term "public" or "popular" library (coined by leaders eternally shifting between idealistic dreams and the contemporary realities of economic and political pressures) there existed severe problems related to the physical maintenance of the collections and public services of these libraries. Only a mediocre service could be expected in humid, cold, poorly lighted places run by a small and inefficient staff, with a budget so meager that it could barely maintain—the term "collection expansion" was unknown—the existing holdings. And rodents in Latin America must be among the most educated little animals in the world: they do not read books, they eat them! Public services, to say the least, were primitive and slow. This situation was aggravated by the inflexibility of the European classification systems which weighed so heavily on all types of Latin American libraries during the 19th and well into the 20th century: the French classifications of Brunet, d'Alambert, and Ampere; that of the English philosopher Jeremy Bentham; and also classifications imported from Spain and Germany. In Chile, Ramón Briseño, director of the Biblioteca Nacional between 1864 and 1886, had been influenced by L. A. Constantin's *Bibliotheconomie ou noveau manuel complet pour l'arrangement, la conservation et l'administration des bibliothéques* (Paris, 1841) and decided to apply in his library the same methods used by France's Bibliothéque Nationale. Every cabinet or bookcase was marked with a capital letter and each shelf numbered. The books were stacked by size (the small ones above, the regular ones in the middle, and the larger ones below). On the spine of each book appeared a label with the following information: number of volumes of the work, letter of the cabinet, number of the shelf, and a continuous cipher which designated the place of the work on that shelf. The system remains much the same today (1975). For example, a typical catalog card gives the following locating information: 10(627–13), which means the book may be found on the tenth floor in stack or bookcase number 627 and in space number 13. In other words, it is a system of closed stacks and fixed location. Newly acquired volumes or sets are located, again by size, where space is available, without concern for subject continuity.

The so-called popular or public library in 19th-century Latin America remained merely a symbol. Its nature and purpose were never clearly defined. Beyond vague philosophical principles was the need for a fundamentally new structure and mission.

The 20th Century: Reevaluation of Public Libraries in Latin America

Between 1810 and 1902, when Cuba finally obtained its total independence, Latin American nations laid the foundations of their democratic institutions. To achieve this goal, more than goodwill and vision were necessary. Fostering the democratic process, fighting poverty, upgrading education, weathering political up-

heavals, and waging wars with their neighbors impeded the countries' cultural and social processes. Probably the bloodiest of all wars was waged by Brazil, Uruguay, and Argentina against tiny Paraguay. Between 1866 and 1870, Paraguay was devastated: of a population of about 525,000 in 1865, only 220,000 survived the war and few of them were men. The Chaco War (1932–1935), a conflict between Bolivia and Paraguay, laid further waste and death in the latter nation. Latin America had not gone through the classic stages of the Old World, but had "passed directly from primitive indigenous communities to the incipient capitalism introduced by Spanish colonization. The Latin America that gained its independence from Spain was governed not by a feudal oligarchy, but by a bourgeoisie that through its independence on the world market . . . contributed to the backwardness of the continent. This bourgeoisie [was] incapable of fulfilling the aims of democracy" (*16*).

It is significant that at the end of the 19th and in the first decade of the 20th century, a distinctive middle class began to play an ever increasing role in the political and social transformation of several Latin American nations. From Chile's postwar economy after the War of the Pacific (1879–1883), which was followed by a parliamentarian—but sometimes chaotic—republic (1891–1924); through the emancipation of the remaining 700,000 slaves in Brazil on May 13, 1888, and the overthrow of the empire and creation of the first Brazilian republic (1889–1930); to Mexico's struggle toward modern capitalism starting with the Porfirio Díaz regime (1876–1911), a growing social differentiation became evident. Although it led to the attainment of a higher status quo for the middle class, it did little or nothing to provide educational or economic opportunities for the agricultural populace and low income urban masses. Despite several factors—the rise of a strong middle class; the conflict between the church and the state, which led to the secularization of several institutions; and the first attempts toward massive industrial development, which allowed some Latin American nations to invest more heavily in education—the profile of public libraries remained low; and their influence on the life of the people and their impact on the cultural development of Latin American communities remained negligible.

This situation changed rather drastically after the first decade of the 20th century, when a more active intellectual exchange took place between Latin America and Europe, and more significantly, between Latin America and the United States. Library economy courses began to be offered as early as the summer of 1909/1910 in Buenos Aires and in 1910 in Rio de Janeiro. The Dewey Decimal System had made its debut; but probably the greatest impact of all in the modernization of library administration, techniques, services to readers, and professional attitudes came with the training of Latin American librarians in the United States and Europe, and the library science courses offered by North American librarians in Latin America. The rise of a library profession during the late 1930s and the 1940s heralded a new era in the development of all types of libraries south of the Rio Grande, and its full impact has not yet been fully assessed. While prior to the 20th century, the administration of libraries was the prerogative of priests, political appointees, hungry teachers, and celebrated bibliographers, historians, or writers, now it became the responsibility of an almost totally unknown professional group in Latin America:

the librarians. Library associations were established and professional journals issued at erratic intervals. New library laws were enacted. The impact of a Latin American library profession was beginning to be felt and its influence continued to increase considerably during the 1950s, 60s, and 70s. Through extraordinary efforts—in an almost miraculous fashion—Latin American librarians had made governments and educational leaders aware of the need to offer library facilities which would reach the largest number of people *at their reading level and according to their needs.* In this regard it is also important to emphasize that many of the present-day national libraries and most successful public libraries in Latin America are headed by women. It is a point worth mentioning, for librarianship in Latin America is mostly a women's profession and their role at the upper and middle management levels has been by far more influential than in the United States or Western Europe.

During these last three decades, Latin American librarians have done much to press the point that a dynamic educational process which seeks to reach the masses requires the support of a well-balanced and organized collection of print and nonprint materials, and that this process ultimately contributes to the improved social, cultural, and economic development of a nation. That which has been accomplished and that which still remains to be done depend also upon the continuous expertise of foreign consultants and economic aid from several international organizations. The role of these agencies cannot be overemphasized. Among the major forces which have helped shape modern librarianship in Latin America, including the creation of highly successful public libraries, are the Organization of American States and UNESCO, followed by such institutions as the Carnegie, Rockefeller, and Ford Foundations, the British Council, and the United States Information Service.

International library congresses such as the First Assembly of Librarians of the Americas, held in Washington, D.C., May 12–June 6, 1947; the Conference on the Development of Public Library Services in Latin America, held in São Paulo, October 3–12, 1951; the Meeting on the Education and Development of School and Public Libraries, held in Santiago del Estero, Argentina, September 5–9, 1965; and the innumerable national and regional *jornadas bibliotecarias* [library congresses] held in many Latin American nations have also been instrumental in disseminating new approaches to library techniques, national planning for library services, and the participation of public libraries in literacy programs. Among these national meetings, one of the most impressive was the Eighth Brazilian Congress of Librarianship and Documentation held in Brasilia, July 20–25, 1975, with the participation of more than 1,600 librarians. Some of the working papers and proceedings published after these national or regional meetings are mines of information regarding the status of public libraries in Latin America. Unfortunately, the distribution of this conference material is limited and, with rare exceptions, it remains unindexed.

The most fundamental change in a "public library philosophy" in Latin America has been from that of the creation of institutional collections, mainly for the sake of preservation during the 19th century, to the creation and organization of agencies which provide informational and recreational services, during the present century.

Approximately 2,500 public libraries were reported to exist in all Latin America in 1966. Today, statistics indicate that Brazil alone supports more than 3,000.

Several library observers still insist that the concept of a public library has no place in Latin American thinking. This, of course, is far from being the truth. Superb public libraries—including services for children, the blind, and the elderly—are available in Brazil, Cuba, Colombia, Chile, Mexico, Argentina, Venezuela, Peru, and other countries. The United States provided a few initial models: the Artigas–Washington Library in Montevideo, Uruguay; the American Library in Managua, Nicaragua; and probably the most successful of all—and still alive, well, and located in Mexico City—the Benjamin Franklin Library. No matter how many examples are given, the number of public libraries in Latin America is relatively limited and cannot be compared to the abundance of similar agencies which exist in North America and Western or Eastern Europe. Due to the peculiar socio-economic, political, and cultural structure and traditions of the Latin American republics, statistical comparisons and correlations among people and numbers and types of libraries—or between numbers of city inhabitants or students and volumes or seating capacity, or literary percentages versus population growth—are not pertinent or not as important as the simple fact that librarianship—particularly public librarianship—exists and sometimes even progresses.

Other important factors which influenced the increased role of public libraries in Latin America were the massive literacy programs such as the famous 1944 "National Campaign of the Alphabet," launched by the Mexican government and which required each literate citizen between the ages of 18 and 60 to teach at least one illiterate adult to read and write Spanish. About 4 million Mexicans acquired some reading and writing skills as a result of this campaign. In Brazil, the Movimento Brasilerio de Alfabetização (Mobral), started in 1970, has made it possible for approximately 3 million adults to achieve basic literacy; that number is expected to quintuple by 1980. To reach Brazil's estimated 15 million illiterates (about 26% of the population), Mobral has established 65,000 centers throughout the nation. At another level, the government of Peru, in 1975, reinstated Quechua—a language spoken by about 4 million people of the Andean plateaus—as a national language along with Spanish, a decision which poses new burdens and challenges for public libraries. It becomes clear that public libraries in Latin America operate under the constraints imposed by processes of national integration not fully completed and within a framework of ethnic, class, and regional differences.

Some noteworthy attempts at integrating public libraries into the total educational picture of the country have occurred from time to time. Four examples come readily to mind. Education Law No. 47 of 1946 assigned to the National Library of Panama the functions of a Department of Libraries and Exchanges under the Ministry of Education, in charge of coordinating countrywide public library organization and management. In Argentina a Commission for the Promotion of Popular Libraries was established by a decree of April 11, 1946, whose first antecedent was Law 460, promulgated in 1870 by President Sarmiento. In Brazil the Instituto Nacional do Livro [National Book Institute] has been supplying public and school libraries with reading materials since 1937. On a more contemporary

note, the Dirección General de Bibliotecas, Archivos y Museos [General Division for Libraries, Archives, and Museums], created in Chile in 1929, has become the Ministerio de Educación y Cultura [Ministry of Education and Culture], and is charged—among its many commissions—with the creation and supervision of public libraries in all the territory.

Another dramatic change regarding library services in Latin America has occurred in Cuba since the sweeping revolution of 1959. Reports indicate that privately supported libraries have been merged and centralized to allow for the state control of library services, that attempts are made to reach the more distant rural sectors, that illiteracy in Cuba has allegedly been stamped out, and that there has been a noticeable decline of United States library methods in favor of East European and Indian techniques.

One suspects that public libraries in Latin America will have to take an active part in the educational process of the citizens if their existence is to be justified. Their major tasks will have to be the provision of educational materials which will give the new literate an opportunity to further his or her newly acquired knowledge and skills. In the United States, the public library has been a creation of, and has mainly served the needs of the middle class. That model, instituted in Latin America during the 19th century, will not be able to survive amidst the increasing social polarization presently taking place. More than the barometer of their culture, more than the simple transmitter of reading and writing skills, public libraries in Latin America will have to become government, public, and/or privately supported agencies capable of giving the people a minimal amount of information related to such concrete needs as family life, health, social organization, and popular culture: in other words, values that give significance to human life.

Conclusion

The development of public libraries in Latin America during more than 150 years has been largely affected by the work and thoughts of two Argentinians: Domingo Faustino Sarmiento, the statesman who envisioned the public library as an integral, vital part of the educational process; and Carlos Víctor Penna, the librarian who has championed the idea—together with several other colleagues—of the national planning of library services. While most of Sarmiento's practical achievements faded away after his death, it is doubtful that this will happen with the foundations laid by Penna and others. They have been supported by powerful educational organizations such as UNESCO and have worked with highly sophisticated professionals who are realistic enough not only to grasp the full significance of the national planning of library services, but have also earned the respect of many influential political leaders.

Latin America in the 1970s can pursue the planning of library services at the national and international levels because of a minimal language barrier (19 out of the 20 nations included in this study are Spanish-speaking), because of a greater interdependence and need for scientific and technical information, and because of

the standardization of technical services brought about by the influence of Anglo-American practices. Already in process are the first attempts at standardizing and centralizing national bibliographic efforts (in the humanities, social sciences, and sciences), together with the introduction of machine-readable cataloging, being developed in close collaboration with the United States Library of Congress by Brazil, Mexico, and a few other nations. These positive aspects and developments are to some extent offset by strong nationalistic currents, by a professional library training which does not reflect the real information needs in Latin America, and by the political vicissitudes and economic hardships under which librarians have to function. There is a tendency among many writers to emphasize the impact of the new worldwide information technology on public library systems and the shifting role of the public library in relation to national educational and information services. This emphasis views the public library as a unique agency, which can operate successfully and *objectively* without undue political or social pressure. This ideal has been achieved with a great degree of success in North America, in Western and Eastern Europe, and in a few other parts of the globe, but in the developing nations, the rigidity of function by type of library is unrealistic.

Presently, public libraries in Latin America oscillate between two positions: one, which is a derivative of European and United States models, sees education as the crucial factor toward achieving social equality—with public libraries playing a supportive, mostly static role in this process. Another position seeks the creation of a fundamentally new library prototype able to identify the changing needs of a community while working more closely with school libraries, which will become a classroom-literacy center capable of bridging the different stages of formal education, an agency for social activities and referral information. The latter model for a public library seems improbable unless Latin America recognizes the need for a mission, a set of principles, a clear understanding of library objectives. In 1966 it was forcefully stated that the functions of libraries in Latin America are "tied to obsolete patterns, structures and operational forms. . . . The currency in Latin America of certain already antiquated conceptions of librarianship and the lack of drive and ability to keep pace with the needs of the community on the part of most of the libraries make a complete review of their functions imperative" (*17*).

It is fair to hope that as Latin American governments increase their efforts to eradicate illiteracy and extreme social imbalances, the public library may become a dynamic social force ready to help people "to see themselves in perspective, to acquire the qualifications needed to act on the reality of their condition through work, and to play a conscious and creative part in public life" (*18*). When the Brazilian educator and sociologist Paulo Freire writes about "education as practice of freedom" or about "the placing of man within nature and society," or when he states that "true education is a dialogue" and proposes "total changes and transformations," he implies that it is not possible "to give lessons about democracy and at the same time consider absurd and immoral the participation of the people in the power" (*19*).

The public library in Latin America is in crisis, in search of a doctrine and a mission. If Latin American librarians continue to address themselves with passion,

imagination, and professional integrity to the dramatic social problems confronting their societies, then there is a good chance that they may develop a fundamentally new library concept capable of meeting the pressing needs and the challenges posed by the 21st century.

APPENDIX 1

Chronology Highlighting Some Library Developments in Latin America

1847–1848	The Argentinian Domingo Faustino Sarmiento visited the United States for the first time and met Horace Mann, among other educational leaders. It was during this visit that Sarmiento fully grasped the potential of the public library as an instrument for the people of Latin America.
1886	First international agreement on the exchange of publications was the Brussels Convention for International Exchange of Official Documents and Library Publications. Among the first signatories were the United States, Brazil, Argentina, and Chile.
1909–1910	Library courses were instituted in Buenos Aires, Argentina, at the Escuela Normal de Professores No. 2 "Mariano Acosta," and at the Brazilian National Library in Rio de Janeiro, Brazil.
1942	Under a contract with the Office of the Coordinator of Inter-American Affairs, the American Library Association created and administered, from 1942 to 1944, the Benjamin Franklin Library in Mexico, the Biblioteca Artigas–Washington in Uruguay, and the American Library in Nicaragua.
1942	The United States introduced the "open shelf" library system and liberalized book borrowing in Latin America with the opening of the Biblioteca Benjamin Franklin in Mexico City.
1947	The First Assembly of Librarians of the Americas was held in Washington, D.C., May 12–June 6, 1947, organized by the U.S. State Department and the Library of Congress, in cooperation with the Pan American Union and other bodies. The 1947 assembly considered a wide range of library problems, including public library development.
1947	By 1947, 18 library schools already had been founded among 11 countries of Latin America, with an enrollment of 415 students.
1951	The Conference on the Development of Public Library Services in Latin America was held in the Biblioteca Publica Municipal of São Paulo, Brazil, October 3–12, 1951. The meeting was convened to consider basic public library problems in Latin America and to draft plans and recommendations for the development and extension of public library services in the region. Seven countries and six international organizations were represented by 119 librarians, of whom 63 were observers from Brazil. Proceedings were published as UNESCO *Public Library Manual*, No. 5, entitled "Development of Public Libraries in Latin America: The São Paulo Conference" (UNESCO, 1952).
1955	Primeras Jornadas Bibliotecarias Chilenas held in Santiago, Chile, sponsored by the Chilean Association of Librarians, December 19–21, 1955. Three other Chilean national library congresses have convened since then:

in 1961, 1964, and 1966. The role of public, popular, and municipal libraries was discussed in all the congresses.

1961 The Alliance for Progress was established by the American republics at Punta del Este, Uruguay, on the occasion of a Special Meeting of the Inter-American Economic and Social Council at the Ministerial Level. It was recommended that each country adopt an overall education plan for the attainment of precisely defined goals within the next 10 years for the purpose of raising the cultural level of the peoples of Latin America. Among the goals proposed for the Alliance for Progress in the field of education, the following should be mentioned: "Development of public and school libraries as one of the most effective means of supplementing and strengthening education and of enriching and disseminating knowledge of the artistic and cultural heritage."

1962 A Conference on Education and Economic and Social Development in Latin America was held in Santiago, Chile. The extent of illiteracy in Latin America, surveyed at that time, brought clearly into focus the need to relate libraries to the general educational process and to formulate an overall library policy.

1965 Working Meeting on the Function and Development of School and Public Libraries and their Relation to the National Programme for Literacy and Adult Education. This reunion was held in Santiago del Estero, Argentina, September 5–9, 1965, with the collaboration of UNESCO.

1966 A meeting of experts on National Planning of Library Services in Latin America, sponsored by UNESCO, was held in Quito, Ecuador, February 7–14, 1966.

1966 A Seminar on the Participation of Youth Movements in the Development of School and Public Libraries was held in Quito, Ecuador, April 25–30, 1966.

1967 The Interagency Book Committee was asked by Assistant Secretary of State Charles Frankel to study President Johnson's statement in the light of the book and library needs of developing areas of the world, and to prepare a memorandum on what the government of the United States should do regarding legislation or appropriations. A *Task Force Report on Latin America* followed, which dealt mainly with objectives and recommendations concerning the motivation of public opinion in favor of the use of books and textbooks as well as libraries, moral commitment of the United States government to book and library programs, improvement of the publishing industry, development of libraries and literacy programs, receipt of books from Latin America, and policy and organization of the book programs of the government of the United States. The document also recommended that books be put into the framework of indispensable tools for the economic and social development of Latin America and not treated merely as items in support of specific U.S. government projects.

1968 A Meeting of Experts on the Development of School Libraries in Central America and Panama, organized by UNESCO with the cooperation of the Guatemala Ministry of Education, was held in Antiqua (Guatemala), July 29–August 2, 1968. Among some of the topics discussed were the present state of the Experimental Project on School Libraries and Training of School Librarians for Central America which UNESCO and Hon-

duras had undertaken as a 5-year plan. The meeting also considered that by 1972, Central American countries should be able to provide library services for 50% of their secondary schools and 25% of their primary schools, at a cost of $3,698,691. Total budget for education for both Central America and Panama in 1972 was to be in the region of $20 million. The proposed expenditure represents only 1.5% of the total budget for education.

1972 An Inter-American Seminar on Integrated Information Services of Libraries, Archives, and Documentation Centers was held in Washington, D.C., November 6–17, 1972, organized by the former International Relations Office of the American Library Association with financial support from UNESCO. The current situation of libraries in Latin America and the Caribbean was discussed, with some emphasis on the integration of public and rural libraries in Colombia. A *Final Report* was adopted; it included a "Declaration" which stated among other things that "The right to information is the heritage of all persons . . . governments must assume their unavoidable responsibility to make information available to all members of society, thus protecting and strengthening the culture of their people."

1975 There were approximately 50 library schools in operation in Latin America: more than 20 in Brazil, about 10 in Argentina, 3 in Colombia, 2 in Mexico, 2 in Chile, 2 in Cuba, and 2 each in 10 other countries.

APPENDIX 2

National Libraries in Latin America

Because every National Library in Latin America served initially not only as a repository of the intellectual riches of the newly independent nations but also as a public library—some with more, some with less success—we offer this brief list for comparative purposes. Some of the dates given for the establishment of these libraries are still debated by scholars. The reader is also made aware that these dates are based on government or personal decrees enacted during or after the wars of independence, and that many of these libraries already functioned as public libraries under Spanish and Portuguese domination.

Argentina	Established September 7, 1910. Opened to the public on March 16, 1812.
Bolivia	June 30, 1838. Located in Sucre. (Other date given: 1836.)
Brazil	Established in 1810. Opened to the public in 1811.
Chile	Established August 19, 1813. Closed in October 1814. Reestablished in 1818.
Colombia	Established December 25, 1823.
Costa Rica	Established September 13, 1888.
Cuba	Established October 18, 1901.
Dominican Republic	National Library under construction.
Ecuador	Established 1869. Decreed by the National Convention of 1869.
El Salvador	Established July 5, 1870.
Guatemala	Established October 18, 1879.
Honduras	Founded February 11, 1880, and dedicated August 27, 1880.
Mexico	A presidential decree of October 24, 1833, established a National Library but it only became a reality in 1857.

Nicaragua	Established 1881.
Panama	Established February 2, 1942.
Paraguay	Established September 21, 1887. (Other date given: 1896.)
Peru	Founded by a decree of José de San Martín, August 28, 1821.
Puerto Rico	No National Library.
Uruguay	Established January 10, 1814.
Venezuela	Established April 19, 1841.

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Because this article does not include specific and detailed accounts of the development of public libraries in each of the countries, we offer this annotated bibliography (compiled and edited by Juan R. Freudenthal and Alice C. Keefer), which should lead students to further documentation and more in-depth information. This list, as the title indicates, is selective, but many of the items included herein contain further—sometimes exhaustive—bibliographies on specific topics. No attempt has been made to include a separate bibliography for each country. To a great extent this has been accomplished by several authors, including those who have surveyed the Latin American countries for this encyclopedia. We did not fully annotate the "General Sources," which are comprehensive in nature and provide a historical, political, cultural, social, and economic framework for the better understanding of Latin America. Among the major reference sources consulted for the compilation of the bibliography were *Library Literature, Library and Information Science Abstracts,* the card catalog of the Library of Congress, the *Handbook of Latin American Studies,* and Simsova-Mackee's *A Handbook of Comparative Librarianship* (1975).

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The library should be a cultural center in the community, not only in the role of preserver,

but as promoter. Ferreira presents suggestions to librarians/library administrators on building a good relationship with the community and on types of services.

Flores, Raquel, Rosario Domínguez, and Eva de Sagastume, "Guatemala, Libraries in," in *Encyclopedia of Library and Information Science* (A. Kent, H. Lancour, and J. E. Daily, eds.). Dekker, New York, 1973, Vol. 10, pp. 237–246.

Very brief mention of public libraries.

Fonseca, Edson Nery da, "Libraries in Brazil," *Lib. J.*, **86**, 3890–3895 (November 15, 1961).

Surveys national, public, school, children, university libraries, as well as professional organizations, congresses, cataloging, and classification. He states that "economic development has not always coincided with cultural development, just as economic underdevelopment does not necessarily imply cultural underdevelopment."

Freudenthal, Juan R., "Current Status of Libraries and Librarians in Chile," in *Papers: 18th SALALM, Port-of-Spain, Trinidad-Tobago, April 29–May 3, 1973*, Secretariat, SALALM, Amherst, Mass., 1975, Working Paper No. B-4, pp. 341–361.

Includes an overview of school, public, and municipal libraries and offers a summary of contemporary developments at the National Library.

Freudenthal, Juan R., "Development and Current Status of Bibliographic Organization in Chile," unpublished Ph.D. dissertation, University of Michigan, 1972, 367 pp.

Surveys the colonial archives in Spain, education and library development in Chile after independence, the National Library, Chilean bibliography, the current status of libraries and documentation, education for librarianship, legal deposit, and library legislation in Chile.

Freudenthal, Juan R., "Librarianship in South America: A Kaleidoscopic View," *Wilson Lib. Bull.*, **50**, 784–791 (June 1976).

Library impressions during a trip to Colombia, Ecuador, Peru, Chile, Argentina, and Brazil in June, July, August 1975.

Freudenthal, Juan R., "Library Legislation in Chile," *Int. J. Law Lib.*, **2**, 71–74 (July 1974).

Summary of the most important decrees and laws that comprised the library legislation in Chile after its independence in 1810.

García Payón, José, *La biblioteca pública central del Estado de México*, Talleres Gráficos de la E. de A. y O., Toluca, 1934, 40 pp.

In the wake of the reforms of the revolution, the author presents a brief history of the "vicissitudes" through which the library had passed since its beginning in 1827. Interesting account.

Gregol, Lourdes Catharina, "Bibliotecas gerais, bibliotecas públicas: Histórico e situação atual," in *V Congresso Brasileiro de biblioteconomia e documentação*, São Paulo, 1967, 15 pp.

History of public libraries from the Biblioteca Nacional do Rio de Janeiro, 1810, and the history and descriptions of collections of other major libraries from the 19th century to the present. Includes the responses to questionnaires on statistics from the various public state libraries.

Gropp, Arthur E., *Inter-American Action for Public Library Development*, Pan American Union, Washington, D.C., 1951, 24 pp. (*Bibliographic Series*, No. 35).

Gropp, Arthur E., "The National Library in Latin America," in *Comparative and International Librarianship: Essays on Themes and Problems* (Miles M. Jackson, Jr., ed.), Greenwood Publishing Corp., Westport, Conn., 1970.

Good survey of the role played by national libraries in 19 Latin American nations.

Groussac, Paul, *La biblioteca de Buenos Aires: Noticia histórica*, Buenos Aires, 1901, 63 pp.

Speech given on the occasion of the move into a new building; this is an interesting historical account of the public library which was later to become the Biblioteca Nacional [National Library] in Argentina.

Guatemala, Ministerio de Educación, Oficina de Planeamiento Integral de la Educación, *Plan nacional de educación para la República de Guatemala (Cuadrienio 1969–1972)*, Editorial "Jose de Pineda Ibarra," Guatemala, 1969.

The plan's "Project No. 7" includes as its main goals the organization of the Department of Public Libraries, an increase in bibliographic and audiovisual materials, and increased support for bookmobiles.

Guía de bibliotecas de America Latina: Edición provisional, Pan American Union, Washington. D.C., 1963, 165 pp. (*Bibliographic Series*, No. 51).

Guide to all types of libraries in Latin America. It is presently (1977) being updated by a SALALM committee.

Guttentag Tichauer, Werner, "Survey of the Library Situation in Bolivia," in *Papers: 18th SALALM, Port-of-Spain, Trinidad–Tobago, April 29–May 3, 1973*, Secretariat, SALALM, Amherst, Mass., 1975, Working Paper No. B-5, pp. 365–371.

Overview includes comments on libraries, library legislation, and professional library education.

Hurtado M., Julialba, "Primer plan regional para el Oriente Antioqueño, 1963–1970," *Revista del Colegio de Bibliotecarios Colombianos* (Medellín), **4**, 5–27 (1966).

Taken from Chapter 2 of the *Primer plan*. Prepared by the Instituto Colombiano de Planeacion Integral and the Corporacion Social de Desarrollo y Bienestar. Although designed for the region of Oriente Antioqueño, the format can be applied to other areas as well. This chapter of the plan is based on the belief that public libraries should take an active role in fundamental education, being the most logical setting for adult education. The plan advises setting up a regional system with a central library serving the entire region through branches and a mobile unit. Article includes proposed organizational chart—breakdowns for services, technical processes, equipment, etc.

Jackson, William Vernon, *Aspects of Librarianship in Latin America*, distributed by the Illinois Union Bookstore, Champaign, Ill., 1962, 119 pp.

"Public Libraries," pp. 11–16: brief descriptions of specific libraries from accounts of his trips to Latin America.

Jackson, William Vernon, "Bolivia, Libraries in," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1969, Vol. 2, pp. 655–659.

Brief mention of public libraries.

Jackson, William Vernon, "Brazil, Libraries in," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1970, Vol. 3, pp. 166–237.

Section on public libraries, pp. 205–215, in which Jackson discusses specific libraries, their history, and statistics. Illustrations. Excellent bibliography.

Jackson, William Vernon, "Colombia, Libraries in," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1971, Vol. 5, pp. 282–315.

Excellent survey. Public libraries are mentioned in pp. 292–297. Includes a useful, up-to-date bibliography.

Jackson, William Vernon, "Cooperation in Latin America," *Lib. Trends*, **24**, 379–397 (October 1975).

Review of current trends in library cooperation in Latin America (including the Caribbean, Central America, the Andean countries), education for librarianship, and the Library Development Program of the OAS. Up-to-date references.

Jiménez de León, Carmen Hernández, *Legislación bibliotecaria en Puerto Rico: Sus implicaciones en la adquisición de materiales y en el desarrollo general del programa*, Sociedad de Bibliotecarios de Puerto Rico. Humacao, 1970, 13 pp., mimeographed (*Cuadernos bibliotecológicos*, No. 1).

Library legislation in Puerto Rico and its implications in the acquisition of materials and general library development.

Juarroz, Roberto. *Guatemala: Plan para el desarrollo de las bibliotecas públicas y escolares*, Biblioteca Central, Universidad Nacional de Tucumán, Tucumán, 1968, 65 pp.

Study and evaluation prepared for UNESCO.

Knight, Phyllis, "Patterns of Library Service in Latin America and the Caribbean." *Lib. Trends*, 8, 209–228 (October 1959).

Overview of libraries with highlights of the more innovative services. She deals mainly with national and public libraries. Includes the English-speaking Caribbean.

Litton, Gastón L., *La biblioteca pública*, Bowker Editores Argentina, Buenos Aires. 1973, 210 pp. (*Prevarios del bibliotecario*, No. 14).

This is a thorough presentation of all aspects of modern librarianship for public libraries—philosophy, administration, organization, etc.—borrowing from American Library Association standards and guidelines and North American library models. This is a general guide, not aimed specifically at the situation in Latin America, though obviously written for a Latin American market.

Mantecón Navasal, José Ignacio, "Sobre las bibliotecas populares," *Bol. Biblioteca Nacional* (Universidad Nacional Autónoma de Mexico), **16**, 51–58 (January–June 1965).

Speech given in commemoration of the 19th anniversary of the founding of the National School of Librarians and Archivists. Stresses the need for popular libraries to tie into national libraries and their role in adult education. Since they don't serve as broad a clientele as school or public libraries, popular libraries should address themselves to a specific goal, e.g., adult education.

Mayol, Josefina, and Jerrold Orne, "Cuban Libraries," *Lib. Quart.*, **22**, 92–124 (April 1952).

"Public libraries," pp. 99–104: Critical of the Cuban public library system, though noting the accomplishments of Fermín Peraza as the director of the Biblioteca Municipal in Havana. Also notes active role of the Masons, Lions, and Rotary Clubs in providing public library service in some areas. Mentions some of the more important public libraries and their services.

McCarthy, Cavan, *Developing Libraries in Brazil, with a Chapter on Paraguay*, Scarecrow Press, Metuchen, N.J., 1975, 207 pp.

Based on a year of work and travel in Brazil, this is a personal, witty account of the overall library scene in that country. The author discusses specific public libraries. It is one of the most readable books on Latin American librarianship ever published.

Medellín, Colombia, *Biblioteca Pública Piloto de Medellín para la América Latina*, Medellín, 1954, 14 pp.

On the occasion of the opening ceremonies, this document gives a brief commentary on the goals, administration, etc., of this UNESCO-supported project, the first public library in Colombia with open stacks and home lending privileges.

"Meeting of Experts on the National Planning of Library Service in Latin America: Report, Quito, 7–14 February, 1966," *UNESCO Bull. Lib.*, **20**, 278–295 (November–December 1966).

Summary of the main topics covered at the meeting, jointly sponsored by UNESCO and the Ecuadorian government. On public libraries: they are too few to meet the growing needs of the population, for the most part badly organized and lacking in resources, isolated from the community, not linked to school libraries. Some recommendations for services: provide free library service, to take active part in implementation of cultural programs of the community, to provide library service to schools without libraries, to participate in adult literacy campaigns. Administration ideally under a national library center, with centralized technical services on a national level. A projected cost and financing scheme is included. During this

meeting guidelines for the planning of library services in Ecuador were also submitted. Includes tables.

Mettini, Italo, *Bolivia: Plan para le desarrollo de las bibliotecas públicas y escolares, setiembre-noviembre 1970*, UNESCO, Paris, 1971.

A plan for the development of public and school libraries in Bolivia, prepared for UNESCO.

Mexico, Departamento de Bibliotecas, *La biblioteca rural*, Talleres gráficos de la nación, Mexico, D.F., 1929, 17 pp.

A library operations manual within a political context. As a product of the revolution, workers can benefit from the knowledge to be available to them in the rural libraries. The book gives practical suggestions for setting up and operating a library and includes a list of 100 basic books. Of historical interest.

Mexico, Departamento de Educación Pública, *Departamento de Bibliotecas: información general*, Talleres gráficos de la nación, México, D.F., 1926, 133 pp.

An interesting book which reveals a rather wide range of information on libraries of its time. The introduction addresses the philosophy of public libraries, and the volume includes special services offered, organization and structure of libraries in Mexico, a listing of all libraries, budget breakdown for libraries, copy of revelant decrees, etc.

Modesto, Federico J., *Planes para el desarrollo de un programa de cooperación interbibliotecaria en Puerto Rico*, Departamento de Instrucción Pública, Hato Rey, January 27, 1968, 13 pp.

A prerequisite for educational development is adequate public and school libraries to serve the reader—children and adults equally. The library's responsibility is to cultivate the desire to read in all. The author speaks of the need for coordinated library services to make up for the shortage and underdeveloped state of libraries in Puerto Rico. His first priority would be to set up a union catalog for the island.

Modesto, Federico J., "Plan en desarrollo para organizar un programa de acción en el servicio de bibliotecas de Puerto Rico," in *Planeamiento nacional de servicio bibliotecario*, Pan American Union, Washington, D.C., 1969, Vol. 2, Part 2, pp. 19–54 (*Estudios bibliotecarios*, No. 8).

Discussion of school and public libraries, their history, structure, and plan for the future. Notes important period for libraries from 1950 to 1960, when the Department of Public Instruction was given the responsibility for designing, planning, and developing public library services.

Moreno Martínez, Olga, "Algunas consideraciones acerca de la importancia social de las bibliotecas en Mexico," thesis, Universidad Nacional Autónoma de México, 1963, 95 pp.

Discusses the importance of libraries in the cultural development of the country; historic antecedents of libraries in Mexico; the "salas populares de lectura," which was a program to fight illiteracy in the 1940s; a listing of all libraries in the Federal District, etc.

Moreno Rusos, Laura Garcia, *A biblioteconomia brasileira, 1915–1965*, Instituto Nacional de Livro, Rio de Janeiro, 1966 (Coleção B2: *Biblioteconomia*, No. 5).

A detailed book on library school organization but includes a superb bibliography of 659 items.

Moushey, Eugene W., "Dominican Republic, Libraries in," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1972, Vol. 7, pp. 293–296.

Mentions that public libraries are small and do not lend for home use.

Musso Ambrosi, Luis Alberto, *Indices de la legislación bibliotecaria del Uruguay, 1830–1969: Principales leyes, decretos, resoluciones, tratados, y convenios internacionales, ordenanzas, reglamentos y estatutos, con una bibliografía auxiliar*, Montevideo, 1969, 24 pp.

Library legislation in Uruguay, 1830–1969.

Ortiz de Zevallos, Carmen, and Antonieta Ballón, *La biblioteca pública en acción*, Biblioteca Nacional del Perú, Fondo San Martín, Lima, 1964. 142 pp.

This book proposes to serve as a practical manual to help answer some of the problems facing library administrators on a daily basis. The volume contains norms and guidelines for the organization and operation of a public library in Peru. Includes illustrations on different types of library equipment and materials.

Papers: Seminar on the Acquisition of Latin American Library Materials, SALALM Secretariat, in the Benson Latin American Collection, Univ. of Texas, Austin, Texas.

Final Reports and *Working Papers* have been published for the 21 meetings held between 1956 and 1976. Among these papers there is a wealth of information about libraries in general, and some public libraries in particular. In 1971 the Organization of American States published the second revision of Sammy Kinnard's *Working Papers of SALALM: List and Index*, covering the years 1956–1970. Sue A. Burkholder did a research paper (unpublished) for the Department of Library Science of the University of Missouri–Columbia, in 1972, entitled "An Index to SALALM Volumes I to XV (1956–1970)." Volumes XVI to XX have been indexed by Matthias G. Newell, School of Library Science, Simmons College, 1976 (unpublished).

"Participation of Youth Movements in Library Development in Latin America," *UNESCO Bull. Lib.*, **20**, 296–302 (November–December 1966).

This article summarizes the conclusions of a seminar held following the meeting of experts on the National Planning of Library Services in Latin America, Quito, February 1966. This seminar focused on ways to utilize youth movements in the planned development of library services. In line with UNESCO's manifesto on library services, the seminar called for public libraries, as a living force at the service of society, to work with the national public educational system. Young people can work in building up existing libraries by applying modern methods of publicizing services, as well as working on building functional libraries where none exist, by mobilizing the human and economic resources of the community, and arousing interest in the library.

Penna, Carlos Víctor, "Inter-American Seminar on Integrated Information Services of Libraries, Archives, and Documentation Centres in Latin America and the Caribbean," *UNESCO Bull. Lib.*, **27**, 152–154 (May–June 1973).

The report includes a "Declaration" consisting of eight points, which outlines the responsibility of the government to make "access to information a reality . . . [priority should be given] . . . to the support of those books which constitute the infrastructure of information, from school and rural libraries to the most complex information services."

Penna, Carlos Víctor, "Library Development in Latin America and the Caribbean: Achievements and Handicaps," *Lib. Quart.*, **24**, 169–177 (April 1954).

Historical note on library development prior to the 20th century, proceeding up to the present, including in his discussion factors, both external and internal, which influence library progress. Compares the roles of some national libraries in the development of public library service: "Until the end of the nineteenth century Latin American libraries had rarely enjoyed the opportunity to influence the life of the people or to take a large part in the cultural development of Latin American communities."

Penna, Carlos Víctor, *The Planning of Library and Documentation Services*, 2nd ed., rev. and ed. by P. H. Sewell and Herman Liebaers, UNESCO, Paris, 1971.

A "classic" textbook on the topic.

Penna, Carlos Victor, "Planning Library Services," *UNESCO Bull. Lib.*, **21**, 60–92 (March–April 1967).

Good article which views the planning of library services as "one specific aspect of educational planning within the social and economic planning of a country." Public and school libraries are seen in role of combating illiteracy. Discusses planning techniques, etc. Good bibliography.

Peñalosa, Fernando, "The Development of Libraries in Mexico," *Lib. Quart.*, **23**, 115–125 (April 1953).

Historical review from colonial times to the present. Attention to the federal government's contribution to popular library development since the 1920s. Mentions relevant legislation, and library services are presented within a historical/political perspective.

Peraza y Sarausa, Fermín, "Bibliotecas populares; necesidad nacional," Asociación Cubana de Bibliotecarios, *Boletín*, **2**, 3–5 (March 1950).

The famous Cuban bibliographer discusses the need for "popular libraries."

Piña Soria, Antolín, *El libro, el periódico y la biblioteca como elementos de cultura popular, en función de servicio social*, Mexico, D.F., 1936, 107 pp.

The role of libraries within a revolutionary context—the need for libraries to support the revolutionary ideology in the fight against capitalism. Suggests creation of 5,000 popular libraries, the intervention of the working class in building collections, reorganization of classification and distribution of public library services. Suggested titles for small libraries are included.

Piñeiro, Miguel Angel, "UNESCO and Library Service in Latin America," *UNESCO Bull. Lib.*, **20**, 245–251 (September–October 1966).

Public libraries are included in the general discussion of library service, which stresses the need for national planning and more international cooperation. The author states that the concept of a public library has no place in Latin American thinking.

Planeamiento nacional de servicios bibliotecarios, Secretariat General, Organization of American States, Washington, D.C.; Vol. 2, *Por países*, 1966–(in progress): Part I, *Chile y México*, 1966; Part II, *Colombia y Puerto Rico*, 1968; Part III, *Brasil*, 1970.

"Plano para a instalação e organização de uma rêde de bibliotecas no Estado de São Paulo," in *VI Congresso Brasileiro de Biblioteconomia e Documentação, Belo Horizonte, Julho 1971*, 20 pp.

Appears as Annex I to Celia Andreotti Atienza et al., "Bibliotecas e centros de documentação: Estudos e observações para planejamento e instalação." Part of an earlier plan for a state network of public municipal libraries—principal objective being to unite and centralize the technical and administrative aspects of library work.

Puerto Rico (Carnegie Library), *State Plan for the Further Extension of Public Library Service to Rural Areas*, San Juan, Puerto Rico, 1961, n.p.

Puerto Rico, Departamento de Instrucción Pública, Servicio de Bibliotecas, *Ayuda estatal para bibliotecas públicas municipales y bibliotecas de sociedads culturales*, San Juan, Puerto Rico, 1961, 18 pp.

Focuses on government support for municipal and private public libraries.

Quesada, Vicente G., *La Biblioteca Pública de Buenos Aires: Projecto de reorganización*, M. Biedma, Buenos Aires, 1879, 43 pp.

Plan for the reorganization of poorly maintained and controlled public libraries, using as models the most advanced libraries of the United States and Europe. Discussion reveals the difference between "public" and "popular" libraries. Library philosophies and practices in the United States, England, Germany, Belgium, and Spain are briefly mentioned. Of historical interest.

Ramos, Sidroc, "Twelve Years' Work at the National Library of Cuba," *UNESCO Bull. Lib.*, **26**, 210–213 (July–August 1972).

The National Library became a public library following the revolution in 1959 and has undertaken cultural information programs and instituted new services designed to attract and instruct new users. The library has also taken an active leadership in the national network of public libraries, advising them on standards and structure.

Reipert, Herman José, *Historia da Biblioteca Pública Municipal Mário de Andrade*, Secretaria de Educação e Cultura, Divisao de Bibliotecas, São Paulo, 1972, 72 pp.

The history of the library to the present, mentioning specific directors.

Rojas Rojas, Efraím, "Costa Rica, Libraries in," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1971, Vol. 6, pp. 207–214.

This general discussion touches briefly on public libraries.

Rooney, Eugene M., "Jesuit Libraries Go Public," *Catholic Lib. World*, **42**, 487–491 (April 1971).

The Jesuits develop free public library services. They first opened a collection they owned in Santiago, Chile, in 1960, but it was rather specialized—theology and philosophy. Now they intend to broaden scope of holdings, plan to develop a union catalog covering all Jesuit libraries in the country, and will be offering free circulation and open stacks in their libraries.

Round Table on International Cooperation for Library and Information Services in Latin America, *Final Report and Documents*, Pan American Union, Washington, D.C., 1966, 2 vols. (*Reuniones bibliotecológicas*, No. 10–11).

Rovira, Carmen, "Cuba, Libraries in," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1971, Vol. 6, pp. 312–332.

Includes library survey before and after 1959.

Russo, Laura Garcia Moreno, *Estado de São Paulo: Bibliotecas públicas municipais, situação e sugesões*, Federação Brasileira de Associacões de Bibliotecarios, São Paulo, 1973, 90 pp.

Research to determine the status of municipal libraries in the state of São Paulo. Includes statistics on population and libraries by municipality. Author supports the creation of a state Central Library Service.

Russo, Laura Garcia Moreno, "O planejamento de bibliotecas públicas," *Revista acrópole*, **329**, 19–35 (1966).

One of the first important articles in Brazil to discuss the planning of public libraries.

Sabor, Josefa E., "Argentina, Libraries in," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1968, Vol. 1, pp. 520–529.

Brief mention of public libraries in the overall library structure.

Sabor, Josefa E., "Reconsideration of the Concept of Library Functions in Latin America," *UNESCO Bull. Lib.*, **20**, 108–116, 135 (May–June 1966).

Critical discussion of the role of libraries in Latin America. She observes that "our libraries have not always met local needs or community requirements . . . what is most striking is the lack of impact of the activities of many of them, not because of the poverty of their equipment, collections and staff resources, but mainly because of the absence of a doctrine, a set of principles, a clear understanding of their aims." The article considers school and public libraries. Still a "classic" statement.

Sabor Riera, María Angeles, *"Contribución al estudio histórico del desarrollo de los servicios bibliotecarios de la Argentina en el siglo XIX: Parte 1: 1810–1852*, Universidad Nacional del Nordeste, Dirección de Bibliotecas, Resistencia, Chaco, 1974, 148 pp.

This carefully documented volume surveys the creation and development—within their political and cultural context—of libraries in Argentina during the Spanish domination as well as during the first few decades of independence. An important bibliography of 152 primary and secondary sources follows the main text and conclusions.

Sabor Riera, María Angeles, *"Contribución . . . Parte 2: 1852–1910*, Universidad Nacional del Nordeste, Dirección de Bibliotecas, Resistencia, Chaco, 1975, 166 pp.

The author pays great attention to the cultural progress in Argentina between 1852 and 1910, with special emphasis on the impact of Domingo Faustino Sarmiento's farsighted ideas about education, libraries, the need for books, and reading habits. Other topics survey the work of bibliographers and the development of the National Library, as well as the creation of libraries

for the workers, the first two Argentinian library congresses and education for librarianship. Includes an impressive bibliography of 276 primary and secondary sources.

Salazar, Isaura E., "The Public Library System in Panama," *UNESCO Bull. Lib.*, **12**, 80–81 (April 1958).

Describes very briefly the regional system of public libraries, which is supported by the National Library.

Santoro, Maris Isabel, Sonia Maria Trombelli, and Albertina Wellichan, "Planejamento e instalação: Padrões mínimos para installação de bibliotecas públicas nos municipios," in *VI Congresso Brasileiro de Biblioteconomia e Documentação, Belo Horizonte, Julho 1971*, 17 pp.

This study outlines the need for municipal public libraries, explores their functions, and presents patterns for setting up a library.

Sarmiento, Nicanor, *Historia del libro y de las bibliotecas argentinas*, Imp. Luis Veggia, Buenos Aires, 1930, 153 pp.

Traces legal background of Argentina's "popular" libraries and touches on public libraries through the years.

Shepard, Marietta Daniels, *Public and School Libraries in Latin America*, Pan American Union, Washington, D.C., 1963, 155 pp. (*Estudios bibliotecarios*, No. 5).

Public and school library needs and proposed plan of action within the Alliance for Progress. Planning for improved public and school library services in Latin America. Brief definition and historical survey of public libraries. Statistics and standards for service. Includes bibliography.

Shepard, Marietta Daniels, "Report on Latin American Libraries," *Wilson Lib. Bull.*, **40**, 538–542 (February 1966).

An overview of problems and programs of libraries in Latin America.

Shepard, Marietta Daniels, "State of Library Planning in Latin America," *Missouri Lib. Assoc. Quart.*, **30**, 307–325 (December 1969).

Stresses the importance of national planning and gives a summary of activities along these lines in different countries. (Much of national planning by the national libraries involves the coordination of public library services.)

Siekierski, S., "Biblioteki publiczne na Kubie" [Public Libraries in Cuba], *Bibliotekarz*, 41(11–12), 337–341 (1974).

Tarr, Terence S., "The Organization of the Royal Public Library of Santa Fe de Bogotá," *J. Lib. History*, **5**(1), 20–34 (January 1970).

History of the library from 1767 to 1822, focusing mainly on Manuel del Socorro Rodríguez, the library's director from 1790 to 1819. Detailed account.

Thompson, Lawrence S., and Jorge Rivera Ruiz, "The Libraries of Puerto Rico," *Lib. Quart.*, **16**, 225–238 (July 1946).

The Sociedad Economica de Amigos del País opened a public library and scientific museum in 1836. Municipal libraries and reading rooms [gabinetes de lectura] were established during the latter part of the 19th century. The Biblioteca Municipal de Mayaguez became the first true public library. Founded in 1873, it opened its doors to the public on March 15, 1874.

Velázquez, Gonzalo, *Los servicios bibliotecarios públicos en Puerto Rico*, Departamento de Instrucción Pública, San Juan, 1961, 89 pp.

In 1950 public library service was transferred to the Department of Public Instruction. This is a summary and review of the programs including bookmobiles, priority to rural areas, rotating collections of 100–150 books lent to communities without regular library service, etc. Discusses legislation behind library programs. Includes the "Puerto Rico State Plan for the Further Extension of Public Library Services to Rural Areas, 1961," which was submitted to Congress for federal funding, and the annual report for 1959/60.

Velázquez, Luis H., "Popular Libraries in Argentina," *UNESCO Bull. Lib.*, 10, 105–106 (May–June 1956).

Historical discussion of legal basis for the development of "popular" libraries, and a description of the present Commission for the Promotion of Public Libraries, its origin and functions. Some statistics included.

Velásquez de Doumakis, Rosa, "El Salvador, National Library in," in *Encyclopedia of Library and Information Science* (A. Kent and H. Lancour, eds.), Dekker, New York, 1972, Vol. 8, pp. 1–14.

The administration of national libraries and archives consists of three units: National Library, National Archives, and bookmobiles, with brief mention of the last.

Vera del Carpio, Adolfo, *Las bibliotecas en Potosí: Estado actual y sugerencias de realización*, Editorial Universitaria, Potosí, Bolivia, 1965, 30 pp. (*Publicaciones del Departamento de Cultura de la Universidad Tomás Frías*).

Discussion, covering both public and private libraries, lists holdings and enumerates needs of libraries. Includes bibliography.

White, Carl, *Mexico's Library and Information Needs: A Study of Present Conditions and Needs*, Bedminster Press, Totawa, N.J., 1969, 106 pp.

Discusses libraries' needs within context of national goals, emphasizing the need for national planning. Urges more legal framework for public libraries. Although Mexico already has in its Constitution an instrument for providing for public library service, White sees the need for the law to stipulate the role that each level of government should play in organizing public libraries. He suggests standards for assigning responsibility in this area, by fostering local initiative and responsibility, and by legalizing the linking of public libraries within a region into networks.

Williamson, William L., *Assistance to Libraries in Developing Nations, Papers on Comparative Studies*, Univ. of Wisconsin, Library School, Madison, Wisc., 1971, 67 pp.

Of special interest are the papers on "Social Change and Library Development," "Library Development in Latin America. A Scalogram," and "Cross-Cultural Aspects of Assistance to Developing Countries."

Zanetti, Juan E., *La bibliotecas públicas de Latinoamerica al servicio de la educación popular*, Federación Argentina de Bibliotecas Populares, Córdoba, Argentina, 1951, 33 pp.

Sparked by the 1950 UNESCO seminar on the function of libraries in public education, this paper discusses the demographic, social, and cultural structure of areas in Latin America, and the role of libraries therein.

JUAN R. FREUDENTHAL

CONTEMPORARY LIBRARIES IN GREAT BRITAIN*

It is generally agreed that the Public Libraries Act of 1850 under the sponsorship of William Ewart provided a major impetus for the development of public libraries in Great Britain. With the growing importance of general education, especially in the area of adult education, the public library was seen as an "opportunity for bringing all classes together, and uniting them in the common bond of literary pursuits" (Luckham, *The Library in Society*, p. 4).

Early legislation provided for towns and parishes to raise taxes to support these

* The Bibliography for this section appears on page 457.

libraries, but it was not until 1919 that county councils were empowered to develop countywide systems. Many of the more developed town libraries refused to join such a system, retained their own authority, and raised their own rates. The pattern of library organization in Britain, therefore, varied greatly until the 1964 Museum and Library Act of England and Wales, and the local government reorganization in 1973–74.

Reference services assumed major importance for libraries from the beginning. Early developers saw the need for information and "betterment" as an overriding commitment. Industrial centers such as Liverpool and Birmingham developed especially strong reference departments in science. Other cities strengthened collections in history and fine arts. Home lending libraries sometimes operated as a special department within the library, providing popular literature, both fiction and nonfiction, but this activity was often viewed with suspicion.

Janet Hill cites early efforts in providing materials for children as significant in the development of the whole concept of public services. From its beginning in Nottingham in 1880, service to children provided many of the extension activities that libraries still view as important. Lectures, discussion groups, exhibits, and/or publicity for library services have become increasingly integrated into public library programs.

Two major pieces of legislation have recently drastically affected the patterns of development of public library service. The year 1964 saw the passage of the Museum and Library Act for England and Wales, which provided for library authorities that were separate from other local or regional boards. Advisory Councils to the Department of Education and Science were established. The 1964 act suggested that governmental authorities provide "comprehensive and efficient library service" and with this somewhat vague mandate, British libraries foresaw a golden age. The London Government Act of 1963 had provided public libraries in the city with an opportunity to review policy, appoint specialists, and reconsider general service areas. Other cities and districts saw a chance to review and renew their position, and the *Library Association Record* noted a significant increase in bookstock, service points, and library staffs, with a large increase in new and replacement branches and central and headquarters libraries from 1965 to 1975.

Scotland, Northern Ireland, and Wales did not fare as well, however. In Scotland, for instance, there was no direct legislation and staffing was very poor. Wales, although mentioned in the legislation, also had staffing standards well below those requested by the Working Party for the 1964 act, and the Hawnt Report of *Public Library Service in Northern Ireland* (April 1966) described chaotic conditions there.

On the other hand, the second major piece of legislation affecting libraries, the Local Government Act 1972 (effective 1974), has caused some serious problems. These problems developed not only because of drastically changed economic policy but also because public libraries were forced to split and recombine; because libraries, like other service agencies, had widely differing patterns in staff and services; and because the local governmental authorities which provided financial support were sometimes merged.

There is a different structure for England, Scotland, Northern Ireland, and (to a lesser degree) Wales. Northern Ireland provides for regional concerns such as roads,

water, planning, etc., to be transferred to central government departments while personal health and welfare services, including libraries and education, are assigned to area boards. This means that in Northern Ireland there are regional library boards which appoint a librarian and at least attempt to define policy. In Scotland the district pattern is followed, but libraries are related to leisure, recreation, or "amenities," divorcing the service from education. There is a similar pattern in England and Wales, where many libraries are part of a general "arts" committee. This creates a definite problem of visibility for a librarian on a large, multifaceted committee. In a 1975 survey by the Library Association, it was shown that 60% of public libraries in the United Kingdom are now part of the leisure, recreational, or amenities service.

The Library Association recognizes this problem of definition of service as a major one for the future. This definition has been complicated by the development of the British Library Lending Division, which provides nearly three-fourths of all interlibrary loans in the United Kingdom with obvious overlaps in the holdings of major public and university libraries. Furthermore, a review of the goals and objectives of public libraries is seen as essential by the Library Association.

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MARGARET MARY KIMMEL

CONTEMPORARY LIBRARIES IN AFRICA*

There are only a few observations which can be made about Africa that characterize the continent as a whole. It is the world's least densely inhabited continent and at the same time the world's fastest growing continent. Fifty-five to sixty percent of the African population is under 20 years of age. It terms of production and income Africa is the world's poorest continent. The average gross national product amounts to $160 per capita compared to $2,071 in Europe, $4,246 in North America, $430 in South America, and $200 in Southeast Asia. Africa is largely a rural world and one in which the geological structure and topography have created difficult access not only between countries but also in many instances within countries.

* The Bibliography for this section begins on page 461.

Accompanying the isolation between and within nations are communication traditions which are principally oral.

In addition to the geographic characteristics which separate the people of the continent from one another there are also the language and cultural distinctions which are both indigenous and superimposed by colonial occupation.

At various times in modern history Africa has been colonized by the English, French, Portuguese, Spanish, Germans, Belgians, Turks, and Italians. The major transnational linguistic communities are Arab-, French-, and English-speaking.

Consequently Africa is a continent of many languages, influenced by at least eight colonizing countries, isolated by its landscape, and rural and oral in its tradition. It is not possible to talk about public libraries in Africa without taking all of these factors into account.

The public library development which has taken place generally in Africa reflects the various library systems of the colonizing powers. In different countries there have been various rates of growth in public library systems, and they have taken diverse directions.

North Africa has the oldest tradition of libraries but as they were originally established for the use of the scholars, priests, and royalty, they cannot be compared to what the Western world refers to as public libraries. Alexandria, the greatest and most famous library of the ancient world, was operating in 295 B.C. Roman libraries also existed in areas of North Africa, and Christian libraries succeeded them. The Islamic libraries of North Africa were the great depositories of books and manuscripts in the ninth century and because of their collections these libraries were the centers of learning in that period.

The northern part of Africa was known to the ancient world but the other coastal areas of the continent were not significantly explored or settled until the European powers took an interest in them in the 1800s. As major colonization of these parts took place, libraries were gradually established.

Among the first libraries organized were subscription libraries founded by and for the use of European special interest groups. Membership dues and fees allowed these libraries to finance themselves. Some subscription libraries remain but many with local or national enabling legislation have become public libraries. The subscription or club society libraries are only one of several forms of quasi-public libraries which are referred to in the development of African public libraries.

One of the other major types of library that preceded, and in some places still accompanies, free public libraries is the foreign government cultural library. In many places in Africa the United States Information Service, the Alliance Français, the German Cultural Institute, and the British Council offer substitute or ancillary public library facilities.

The Republic of South Africa had the earliest and most rapid development of a public library system following Western concepts. As early as 1818 South Africa had public libraries. These libraries were conceived and set up to serve the needs of the European population, and like their counterparts in other places in Africa they were the work of transplanted foreigners who quite naturally operated them on the basis of their experience in their homelands. In 1928 the library movement

was extended to non-Europeans in South Africa and by 1974 library services in the country were integrated.

Between North Africa—now encompassing Morocco, Algeria, Tunisia, Egypt, and Libya—and the Republic of South Africa lie 35 countries, many of which are newly independent. These countries in sub-Sahara or Black Africa are the developing nations of the continent. It is to developing nations that the UNESCO Public Library Manifesto addresses its standard:

> The public library is a practical demonstration of democracy's faith in universal education as a continuing and lifelong process, in the appreciation of the achievement of humanity in knowledge and culture.
>
> The public library is the principle means whereby the record of man's thoughts and ideas, and the expression of his creative imagination, are made freely available to all.
>
> The public library is concerned with the refreshment of man's spirit by the provision of books for relaxation and pleasure with assistance to the student and with provision of up to date technical, scientific and sociological information.
>
> The public library should be established under the clear mandate of law, so framed as to ensure nation-wide provision of public library service. Organized cooperation between libraries is essential so that total national resources should be fully used and be at the service of any reader.
>
> It should be maintained wholly by public funds, and no direct charge should be made to anyone for its service.
>
> To fulfill its purposes, the public library must be readily accessible, and its doors open for free and equal use by all members of the community regardless of race, colour, nationality, age, sex, religion, language, status or educational attainment.

The Ghana Library Ordinance of 1950, which formed the basis of later library acts passed in Nigeria, Sierra Leone, and Tanzania, stipulated that effective legislation for libraries in developing nations should encompass the principals of: (*a*) being simple and general, allowing for development; (*b*) being above accidents of political change; (*c*) that the law should be compulsory and not permissive; (*d*) that the financial scheme should be flexible in order to permit a certain amount of local variation; and (*e*) the law should prescribe that "public" libraries should be free and accessible to all categories of people.

It is helpful in dealing with the developing nations of the continent if they are separated in geographic units. A few observations can be made about the public library facilities in a random selection of countries.

Northeast Africa

The area includes Ethiopia, the Sudan, Somalia, and Afars and Issas.

Ethiopia's national library serves as a public library in the capital, Addis Ababa. Outside of Addis Ababa there are a few public library services in the provincial capitals and in half a dozen municipalities where they are operated by local groups.

The main public library in the Sudan is the Central Library in Omdurman. There

is a network of six public libraries with a total stock of 23,000 volumes. Sudan illustrates the difficulty of providing public library services. There are over 100 languages spoken in the country, and although Arabic is the official language it is spoken by only a little over half of the people. While there are substantial publications in Arabic, only 12 other languages have any printed literature, and in most of those fewer than 50 titles have ever been published. The literate population constitutes 17.1% of the total population.

Central East Africa

The nations of this area are Kenya, Uganda, Tanzania, Rwanda, and Burundi.

Kenya and Tanzania have national library headquarters in their capital cities of Nairobi and Dar es Salaam. They have fully organized public reference and lending services for both adults and children and they each operate regional libraries, mobile libraries, and books by mail programs for people in regions without library service.

Southern Africa

This area includes Angola, Zambia, Rhodesia, Mozambique, Swaziland, Botswana, Nambia, Lesotho, Malawi, and the Republic of South Africa.

The Republic of South Africa has been discussed earlier as following the development of the Western concept of public libraries. Rhodesia, under similar circumstances, used the South African example.

Zambia's library service is administered from Lusaka and operates direct mobile units, rural center libraries, and a book postal service. In addition there are several small local libraries in the copperbelt towns of the country.

The Botswana national library was established in 1967 and its main collection is in Gaberones. At the time of its establishment a 5-year plan was begun for setting up branch libraries in major population areas.

In Lesotho in 1970 the British Council Library served as the Public Library. In addition to 18,000 volumes and audiovisual material the library gave such special service as supplying teaching aids to Lesotho, Botswana, and Swaziland.

West Africa

West Africa comprises the nations of Mauritania, Mali, Senegal, Togo, Guinea-Bissau, Guinea, Niger, Chad, Nigeria, Sierra Leone, Ghana, Ivory Coast, Gambia, Dahomey, Liberia, Upper Volta, and the Cape Verde Islands.

Liberia has five public libraries. The first was founded in Monrovia in 1826.

The Ghana Library Board provides book service for people "up country," in addition to administering five regional libraries.

Nigeria, the largest of the West African countries, was early to recognize the role of public libraries in the national scheme for development. The concern for adult educational programs, training of librarians, and the willingness to experiment with nonbook materials put Nigeria in the forefront of public library development in emerging African nations.

The early stage of public library development in which these countries find themselves can be partially explained by the following conditions which exist in most of these nations.

Decolonization has involved eliminating the colonial models that are in conflict with new national goals and retaining those that contribute to these goals. The public library often finds itself facing contradictions. It has to accommodate to colonial culture in the hope of participating in the new technology which might produce a higher standard of living, and it has to implement methods and materials which facilitate the cultural rebirth of traditional practices and values.

Libraries stock books, but books and print are still not the major form of communication in many countries. Another factor which separates public libraries from public use is that the major purchases of these libraries are books in a foreign language. Even though these books may be written in the second language of the country, the books are likely to contain ideas and literature alien to the general public.

Two centuries of contact with the Western world have not done much to generate vernacular publishing. There is little publishing activity within many developing countries, so even if more citizens were able to read in their own language there is very little available. Literacy rates vary throughout the continent. Although it is difficult to come up with meaningful statistics it is generally accepted that literacy figures, like the gross national product figures, are among the lowest in the world. It has therefore been suggested that perhaps reading should not be the first function of public libraries in developing nations.

Public library service is also slow to mature in developing countries where funding is a problem. Local funding is in most instances impossible and the burden falls on national governments to provide financial support. Many countries do this through a national library service whenever it is possible. It is difficult to provide for extensive service when there are so many other priorities and needs for the limited resources available.

The most successful public library systems in developing Africa are those that exist in countries where there has been some economic growth. Economic growth has stimulated literacy and long-range social objectives which both require and support the public library. Growth requires a climate favorable for change, and the transition from traditional to modern society has almost inevitably been fostered and accompanied by a system of public libraries.

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SUE COKER BROTHERS

PUBLIC POLICY, COPYRIGHT, AND INFORMATION TECHNOLOGY

Copyright. The word itself is dull. It conjures images of old men in green eyeshades and arm garters, mindlessly meandering through musty files and records.

Copyright, however it may appear to the public at large, is the only American policy aside from freedom of the press that manages the creation, production, flow, and use of knowledge. And, like freedom of the press, copyright is a constitutional principle.

Article I, Section 8 of the Constitution states that "The Congress shall have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors . . . the exclusive Right to their respective Writings. . . ."

It follows that copyright is extraordinarily pervasive as a public policy.

In 1968 annual copyright registrations exceeded the 300,000 mark for the first time, and have been climbing steadily since. An approximate total of 10 million

items were copyrighted from 1897, when the present registration system began, to 1958. Presently, there are more than 7 million items of intellectual property in this country that are protected by copyright. Not only are books, essays, periodicals, and poems copyrighted; but musical scores, songs, textile designs, games, maps, architectural drawings, works of art, reproductions of art, scientific drawings, illustrations, computer programs, photographs, prints, motion pictures, records, commerical prints, labels, jewelry designs, and foreign works are registered as well. These creations may be protected from free use by copyright, whether they ever are disseminated by their owners or not, for a period as long as the author's lifetime plus 50 years, under the Copyright Act of 1976.

Given its extensiveness, it is not surprising that copyright is big business. In economic terms alone, producing knowledge is of overwhelming importance. The copyright industries rank ahead of banking, mining, and utilities in their significance to the national economy, and the knowledge industry generally constitutes about a third of the Gross National Product.

Copyright as a public policy has been challenged by the rise of the "neo-publishing" technologies, that is, technologies which reformat and reproduce copyrighted information without the knowledge (much less the consent) of the copyright proprietor.

While there are other neo-publishing technologies, those that have engendered the greatest concern among copyright owners and copyright users are photocopiers and computers. Of these two, the photocopier is preeminent. There are approximately 600,000 photocopiers in this country alone, churning out an estimated 30 billion copies every year. Most of these copies are made in public libraries and research libraries, and empirical studies of photocopy use patterns in libraries indicate that as much as 60% of all the photocopies made each year may be of copyrighted publications. Increasingly, publishers are convinced that their sales of periodical subscriptions and books are being undermined by popular and massive photocopying practices, and that this is particularly the case for publications in science and technology. Copyright owners want these practices stopped—or, if not stopped, they want to be reimbursed for lost sales.

The other major neo-publishing technology is the computer. There are more than 100,000 computer-based information storage and retrieval systems in the United States. While we know that these systems are reformatting and disseminating vast quantities of information on demand and at an incredibly rapid rate, we do not know what proportion of that information may be protected by copyright. Some material, certainly, that is processed by computers is protected by copyright, and it is highly unlikely that information system operators and programmers are soliciting—to any significant degree, if at all—the permission of the copyright owners to use their material.

With this background in mind, we can proceed to the crux of the article. To this end, I shall illustrate how American copyright law has responded to new technological innovations, consider the validity of the notion that ideas are property, analyze copyright as an economic policy, review the problems innate to computers and copyright, and suggest some alternatives to the copyright concept.

The Development of U.S. Copyright Law as a Response to Technology

In the West, copyright is distinctly related to the acceptance of John Locke's philosophy that a primary function of government is the protection of property and to the exceptional profitability of publishing at the beginning of the 18th century. The first copyright law appeared in Queen Anne's England, in 1710, and it marked the initiation of a Western mind-set that continues to interrelate protectionism, printing, and intellect.

The law and logic of copyright protection were firmly established in the minds of early American political thinkers before the Republic was founded. Individual petitioners were applying to state legislators for the exclusive right to copy and vend their printed works before the Revolutionary War had run its course. The first granting of such a right was to one Andrew Law, in 1779, by the Connecticut Assembly; Law had compiled, engraved, and printed a *Collection of the Best Tunes for the Promotion of Psalmody,* and argued that "works of Art ought to be protected in this Country," at least for 5 years' duration (*1*).

In 1783 John Ledyard made a similar plea to the Connecticut Assembly. The legislators, in granting his petition for the protection of the *Journal of Captain Cook's Last Voyage to the Pacific Ocean,* also passed the first American copyright act. In the same year Massachusetts, Maryland, New Jersey, New Hampshire, and Rhode Island also enacted copyright statutes. Virginia adopted copyright in 1785, and New York in 1786; only Delaware, of the original colonies, failed to establish a copyright law. Much of this activity stemmed from the efforts of individual petitioners. Of special note are the efforts of Noah Webster to secure protection for his grammar book; the memorial before Congress in 1782 of Connecticut's Joel Barlow, which urged that the states consider the passage of copyright laws; and James Madison's report to the Continental Congress of 1783, which favored copyright legislation of 14 years' duration.

Madison, "father of the Constitution" and ever the intellectual, also promoted a national copyright act in *The Federalist Papers.* In "No. 43" he wrote that the "utility of this power will scarcely be questioned," indicating the almost apolitical character that the English copyright concept already had assumed (*2*). Madison added that the "copyright of authors has been solemnly adjudged in Great Britain to be a right of common law. . . . The public good fully coincides with the claims of individuals." It is not startling that Article 1, Section 8, of Madison's draft of 1787 was inserted into the Constitution, nor that Congress passed the first Copyright Act in 1790.

Since then, United States copyright law has been revised four times: in 1831, in 1870, in 1909, and 1976. Copyright laws in this country have stood unrevised for periods of roughly 40 years, with the exception of the 1909 act, which survived intact for more than 65 years.

Perhaps the most notable trend in these revisions is that the period of copyright duration has increased steadily. Copyright protection has been extended from 2 years, to 14, to 21, to 28, to 56, and to the author's lifetime plus 50 years, a duration amounting to approximately 76 years on the average (or 86 years according to other calculations).

The 1909 revision began at least 8 years earlier than its enactment, when the first Register of Copyrights, Thorvald Solberg, suggested the need for revision in each of his annual reports from 1901 through 1904. President Theodore Roosevelt called for a new copyright law in December 1905. The process of revising the law between 1905 and 1909 had some striking similarities to the latest revision effort. The Copyright Office (which had been established only in 1897) served as a "secretariat" to the appropriate House and Senate committees and drafted and redrafted bills; hearings included representative organizations of librarians, authors, educational institutions, dramatists, bar associations, advertising agencies, photoengravers, photographers, theater managers, composers, architects, and a variety of publishers; private conferences were held among all these associations, legislators, and Copyright Office officials. The major controversies surrounding the 1909 act were the use of copyrighted music on mechanical instruments (e.g., piano rolls and records), and public library purchase of books printed abroad. Roosevelt, a man long interested in science and literature, summoned the antagonists to a White House meeting and forcefully helped the factions iron out their differences.

The 1909 act was a response to "modern conditions," as President Roosevelt called them. Roosevelt had drawn attention to the fact that American "copyright laws urgently need revision . . . they omit provisions for many articles which, under modern reproductive processes, are entitled to protection" (*3*). In fact, the new law of 1909 did not meet copyright owners' demands in this respect. An editorial in *Publishers Weekly* stated that the act had made "an important stride in American copyright, though it falls far short of the aims and hopes of the friends of copyright" (*4*). One wonders what, precisely, the friends of copyright had in mind. The act defined copyright as the "exclusive right" of the copyright proprietor "to print, reprint, publish, copy, and vend the copyrighted work." Such a definition is, to put it mildly, a no-nonsense statement.

Between 1909 and 1924, six revision bills were introduced in order that the United States might enact a copyright law that adhered to the International Copyright Convention, usually referred to as the Berne Convention; no action was taken on any of the bills. From 1926 to 1941, five individual amendments were passed that altered minor portions of the 1909 law. In 1948 the United Nations Educational, Scientific, and Cultural Organization initiated a series of meetings that developed the Universal Copyright Convention, which was signed in 1952 by 40 countries, including the United States, at Geneva. The Senate Foreign Relations and Judiciary Committees held joint hearings on the Geneva Convention, and on the relatively minor amendments to the U.S. copyright law that were required by the convention. In 1954 the convention was ratified and the amendments were passed.

In 1955 Congress commissioned the U.S. Copyright Office to initiate studies on the possibility of a revised copyright law. These 34 scholarly articles marked both an end and a beginning. The end to any possibility for a privately negotiated agreement between copyright owners and users over the roles of new information technologies in copyright arrangements was signalled by the decision to alter national law. The beginning of a long, occasionally vituperative, occasionally statesmanlike political controversy was heralded by the same decision, which culminated in the nation's bicentennial year.

Ideas as Property

While copyright as a public policy for the origination and dissemination of knowledge has undergone many modifications since 1710, its fundamental presumption about the nature of knowledge has remained unaltered. To wit: ideas are property—specifically, "intellectual property"—and therefore must be managed according to proprietary concepts. The assumption that copyrighted information is private intellectual property—and thus, like land, subject to the perquisites of its owner—is an important one. On it rests the legal sanctions of the state that prohibit the unauthorized copying of information protected by copyright, thereby restricting the completely free use of knowledge. Neo-publishing technologies not only have undercut owners' control of information, but in the process have reduced the potency of the state to enforce its own laws. By implication, these technologies have called into question the ability of the state generally to protect the property of its citizens.

But, can information ever really be "property"? And, if it is, should it be?

The notion that copyright sanctions a property right is supported by copyright owners. The reasoning here is that the author owns his writing because he wrote it, much like General Motors Corporation owns a Chevrolet prior to sale because it made the car. In the same vein, the publisher owns the copyrighted work because (*a*) the author gave the publisher his permission to sell his creation, (*b*) the publisher also has made a product by converting a manuscript into a format fit for sale, and (*c*) the publisher has invested and risked his capital in doing so.

Values symbolized by the knee-jerk phrases of private property, capitalism, laissez-faire, and free enterprise are associated with this construct. A spokesman for copyright owners has argued before Congress that: "If we are to retain a private sector in our economy, if we are not to have a nationalized utility or a nationalized industry, either a Government-sponsored or supervised information and knowledge utility, we must retain the private competitive sector" (*5*). Copyright is seen not only as the optimal means of creating and distributing data, but of preserving the values represented by free enterprise as well.

Copyright users have not had the temerity to deny flatly that copyright protects property. Rather, they say that copyright protects a nasty kind of property: monopoly. Users trot out their own catchwords, such as academic freedom, research, service, and education, and then relate the values these encompass to evils long associated with "cornering the market"—the benefits symbolized by education can never be fully realized so long as profiteers control the knowledge market. A representative of copyright users has testified in hearings that: "Even at its best . . . a copyright necessarily involves the right to restrict as well as to monopolize the diffusion of knowledge," and that this unseemly power is in conflict with "the paramount public interest in the United States . . . its system of public and private schools which reaches into every home into every corner of the nation" (*6*).

Whether or not copyright protects "information monopolies" or sanctifies private "intellectual property," the point stands that both copyright owners and users have accepted and are rooted in a traditional conventional wisdom: that knowledge is somehow "property." This is a questionable premise.

Property, as it normally is understood, is something tangible, substantial, and, as such, measurable and divisible—land, for instance. When these criteria are applied to thoughts, however, they seem grotesquely ill-suited. Do the precious, abstracted distinctions that an English teacher makes between words and phrases in a poem by T. S. Eliot strike us as "tangible"? "Substantial"? Can his distinctions be measured and divided into quantifiable parts, as land can be? Can any idea be so parceled? No. At best, an idea can be parsed, but only when it is in the format of a sentence. And what about ideas in other formats, such as painting or sculpture? Can we divide works in those formats and still retain their respective "ideas"? Not many people would be willing to buy a piece of canvas cut from Picasso's *Guernica,* any more than half an idea drawn from Joyce's *Portrait.* A parcel of land, however, even part of a car, is quite another matter.

Even when we rely on the more technical conceptualizations of property developed by economists, we find that the concept of "intellectual property" is unsatisfactory. By *private property,* economists mean goods that a person may dispose of as he sees fit. While books and essays can be disposed of in this manner, ideas cannot. Can we believe, for instance, that American policy makers saw fit to dispose of the idea of a hydrogen bomb to the Russians in the early 1950s?

Public property, on the other hand, belongs to the government, and the government may dispose of it. The notion that certain ideas "belong" to the government, and thus may be harbored or distributed by it, would seem to warrant an abrupt termination of this line of reasoning for reasons of censorship.

Finally, *common property* refers to goods that belong to all, and thus are controlled by no one. This would appear to be a more fruitful approach, except that it disallows remuneration to those who create ideas. Common property, because it is open to all, ultimately is consumed by all; for example, the oceans and air are common properties that soon may be "consumed" (i.e., effectively destroyed) by those who use them as bins for their pollutants. To treat ideas as common property by never paying for their production in forms capable of dissemination conceivably could result in the partial destruction of idea origination.

Ideas, it would appear, are not property. They are ideas. At best, ideas are *products* which can be owned only when rendered into those particular formats that are protected by copyright laws.

Given this, the question still to be addressed is: Why has the notion that ideas constitute property endured for more than 250 years? One reason for this endurance is the presence of certain moral justifications for the claim that intellectual creations ought to be owned by their creators. The "fruits-of-their-labor" argument is one of these; that is, authors should be rewarded for the fruits of their labor. But this contention does not demonstrate that the sum a writer receives under present copyright arrangements is any more "just" than it would be under a different system of compensation.

A second ethical justification is that society ought to reward the authors of great works. Copyright, of course, does not do this. Instead, it rewards popularity, and the writer of lasting art is compensated only when he is fortunate enough to be appreciated by (or sold to) the "great unwashed," as well as by his fellow artists.

Herman Wouk's observation that Wolfe and Joyce were living from hand to mouth on small royalty checks at the height of their popularity is hardly a reason to maintain the status quo (7).

More pointedly, the belief that intellectual creations are property has survived as an operating premise of the law because it has been extremely efficient economically. When printing was the only information technology of any significance, 18th-century policy makers conceived of an arrangement for knowledge dissemination and compensation in society that was elegant in its absence of centralization and administration. Lawyers set up the machinery by granting exclusive rights to copy to those who wrote and to those who controlled presses; Adam Smith's "invisible hand" took care of the details. As Madison noted, copyright provided an efficient means of achieving the constitutional goal of promoting science and useful arts because it was one of those fortuitous policies in which the ends of the individual citizen and the goals of the collectivity could be made synonymous. Copyright, in short, was not a bad idea at the time.

Today, however, all of us can print, and print cheaply. Presses, as a means of production, no longer are controlled only by those who have invested their capital in them. Everyone has access to some form of publishing instrument. As a result, the continuance of copyright on the basis of the proprietary logic that it is the most efficient public policy for information creation and distribution no longer seems valid.

Copyright and Market Power: The Case of Book Publishing

An aspect of the proprietary premise of copyright as a public policy is that of economic power in the knowledge market; while the accusations of monopoly voiced by copyright users may sound shrill, they nonetheless are accusations that warrant some dispassionate analysis.

It turns out, upon examination, that there are reasons for believing that some facets of copyright have encouraged monopolistic tendencies in the knowledge market. This is particularly true for the book publishing industry. The latest book industry statistics (1975), for example, indicate that the prices of hardcover books rose nearly 15% from the previous year. American publishers (or the 152 of them who reported their sales figures) in that year did almost a $4-billion business. Moreover, the U.S. Department of Commerce estimates that by 1985 book publishers' receipts should reach about $8.5 billion.

Books designed to convey ideas dominate the marketplace. In 1972 the books published by academic presses, professional books (e.g., law, medicine, business, social science, science, and technology), "elhi" (elementary and high school) texts, and college texts accounted for 41% of all books sales in 1972; by comparison, the combined sales of adult and juvenile tradebooks (both hardbound and paperbound) and mass market paperbacks comprised only 30% of all domestic sales in 1972 (*8*). As an article in *Publishers Weekly* concluded, the "book industry's stake in education is enormous," for the area accounted for a whopping 67% of total sales in this

country in 1972 (*9*). Fifty-one percent of all books sold in the United States during that year were channelled through schools and similar institutions (23%), college stores (17%), and libraries (11%).

College textbook publishers consistently reap the highest profits of any category of the industry, and there is reason to believe that free competition is limited in this area—an area vital to the transmission of sophisticated thinking in virtually every field of human endeavor. Stephen Breyer, a Harvard law professor, has analyzed the profits of college textbook publishers and concluded that the average profits skimmed from college texts are at least 50% greater than the average profits in manufacturing (*10*). He attributes these extraordinarily "fat" profits in part to teachers who are "fairly insensitive to price" because they do not buy texts themselves.

College text publishers sold $531 million worth of books in 1975, or a gain of 43% since 1971. They accounted for almost a third of all sales in the educational market (which, in turn, constitutes almost half of the entire book market), and they have taken that share of the market for virtually the entire decade of the 1970s. In 1975 alone, college text sales shot up 17%, a gain that surprised even publishers.

These profits are not distributed over a broad spectrum of numerous publishing houses; the larger houses dominate the marketplace disproportionately. The Bureau of the Census stated some years ago that the eight largest publishers of textbooks for all levels of education accounted for 54% of all sales, and that the eight largest general book publishers printed 46% of the market's books (*11*). The Hunt survey of 1968 indicated that the 12 largest publishers of college textbooks (each with annual sales in excess of $6 million in that year) accounted for 81% of all college text sales reported (*11*).

All segments of book publishing are given a quantum of market power via copyright that is denied to other industries. While copyright does not restrict competition among different book titles, it does prevent free competition between copies of the same title and, more importantly, allows a house to accumulate exclusive licenses to publish. Such a power, for example, permits a publisher to build "stables" of prestigious authors. Status-laden groups of authors tend to attract novice writers with promising manuscripts, and this, in turn, inhibits the entrance of new publishers into the marketplace, since they are less likely to get first crack at reading the best new efforts. When entry becomes difficult (and the high profits of college text publishers indicate that an entry barrier may indeed exist for publishers in this field), established publishers find it easier to resist demands by their writers for higher royalties, and also easier to raise prices on their books. Restricting royalties and raising prices can limit both the number of titles produced and the number of books circulated.

Monopolistic tendencies are indicated in other areas of commercial information dissemination as well. Economist Jesse W. Markham has observed that while there are roughly 900 publishing operations in the United States, almost "the entire output of high-speed digital computers is in the hands of about eight companies" (*12*). Relatedly, a suit brought in 1972 by the Federal Trade Commission against Xerox Corporation alleged that Xerox controlled 85% of the revenues generated by the photocopier market in the United States; Xerox and the FTC settled out

of court in 1974 "on terms," according to the *New York Times*, "written by the company" (*13*).

Significantly, patterns of knowledge creation in the electronic-based information industry (such as television and computer manufacturers) are quite different from those in traditional publishing. Usually, a limited number of corporate employees produce data for their firms in the electronic-based knowledge industry, while in the publishing trade, thousands of free-lance writers market their wares to people with printing presses. This bureaucratic character of the electronic side of the information industry may give private management a much more far-reaching control over the sources of society's information (in this case, corporate employees) than is present in traditional publishing.

The Economics of Photocopying

While there may or may not be a monopoly in the photocopier business, the effects of those same photocopiers have worked to undermine monopolistic tendencies in the publishing trade. This is because photocopiers tend to render copyright law unenforceable and, in effect, make everyone with access to a photocopier one's own "publisher," thus reducing the control over the printing press (as the major means of information production) traditionally held by publishing houses.

When put in a national perspective, the extent of photocopying becomes awesome. In 1962 George Fry and Associates conducted a study of photocopying practices for the National Science Foundation, which usually is referred to as the Fry Report (*14*). John C. Koepke, its chief investigator, estimated that about 3 billion, 600 million photocopies of copyrighted and uncopyrighted material were being produced annually. Gipe estimated that 10 billion photocopies were made in 1965; and in that same year, the president of Xerox reported that: "In 1961, roughly 9½ billion copies were produced in this country, resulting in total income for the industry of about $500 million" (*15*). In 1967 the Committee to Investigate Copyright Problems Affecting Communication in Science and Education (CICP) projected that more than 1.8 billion pages of the 3 billion pages that would be photocopied in 1969, would be copyrighted material (*16*). But in 1969 the vice-chairman of Xerox Corporation made the remarkable statement that: "the United States produced 27.5 billion paper copies in 1967. And this figure just covers copiers and duplicators—it doesn't take into account the miles of copying spun from computers, or microfilm copies, or spirit and stencil machines" (*17*).

If per-page photocopying costs continue their downward spiral (and there is scant reason to believe otherwise), these already impressive figures should expand. No doubt there is, as economic theorists insist, a point of diminishing returns. But where that point is, and when it will be reached, is quite unknown. Gipe noted that by 1965 it was possible to produce 25 or more single copies for one-half cent per page. Erwin Karp, in the same year, stated that by using a relatively simple combination of a photocopier, a Colitho mat, and a multigraph machine, any user could make single copies for eight-tenths of a cent per page; 50 copies of a 64-page publica-

tion retailing for $3.75 could be reproduced by this technique for 55 cents a copy (*18*).

The most solidly founded empirical study on the relation of copying costs to the popularity of photocopying is that by the Arthur D. Little consulting firm (*19*). The firm concluded that photocopying technologies will improve in quality and versatility; that costs "can be expected to decline somewhat in the future"; that great "continued growth must be anticipated, even if at a slightly lower rate, in both the number of machines installed and the number of copies produced"; and that "there is broadening trend and incentive for the individual user to copy parts of books."

For a decade, a number of individuals and organizations have attempted to study empirically the patterns and economic effects of photocopying. The Freehafer Report of the Joint Libraries Committee on Fair Use in Photocopying, which surveyed 10 libraries (1961), was the first such attempt (*20*). In 1962 the National Science Foundation commissioned George Fry and Associates to study the problem as it pertained to scientific and technical publications (*14*). This was a relatively more thorough survey that examined the effects of photocopying on authors, publishers, users, librarians, and manufacturers of copying machinery. In 1963 Robert F. Clarke, working under a grant from the U.S. Air Force, completed a doctoral dissertation in library science on the topic; he examined copying of dissertations by University Microfilms and photocopying of articles in science journals in a sample of major research libraries (*21*).

In 1966 the American Book Publishers Council (ABPC) and the American Textbook Publishers Institute (ATPI) sponsored the previously cited study by Arthur D. Little, Incorporated, to determine the impact of technology on publishing (*19*). The survey related decreasing photocopying costs to increasing photocopying use. In the same volume in which the Little study appeared, there was an empirical examination of copying practices in American education, conducted by the National Opinion Research Center (NORC) at the request of the ABPC and the ATPI (*22*). The NORC study essentially was a combination of surveys, and it indicated the widespread growth of photocopying practices in education.

The most prestigious of the surveys, perhaps, appeared the following year. The Committee to Investigate Copyright Problems (CICP) was awarded a grant by the U.S. Office of Education to examine photocopying practices in libraries (*16*). Photocopies in 66 libraries were recorded for one month, and an extensive opinion questionnaire was sent to librarians. Former Register of Copyrights Abraham L. Kaminstein has said that the CICP is "probably the only organization that has tried to stay independent, or at least neutral, between the opposing sides," and that it is unique in that it "has tried to look at the situation and get the facts" (*23*). The latest attempts to empirically assess photocopying practices are a 2-week study of photocopying at the University of Toronto Library and a 12-month study of 41 Canadian university libraries which largely validate the CICP's findings.

These studies are both useful and useless. While they brought a number of empirical data to light, their conclusions are conflicting. Several of them are vague not only in terms of methodology, but in scope. Nor do their researchers seem to have precisely the same investigative missions. Most importantly, however, developing

technology tends to date many of the studies' findings. Thus, one publisher, for example, has said that: "As a consequence of rapid changes in technology, the cheerfully reassuring Fry Report of 1962 on photocopying is obsolete" (*24*).

The studies' conclusions can be bisected crudely into two camps: pro-user and pro-owner. Pro-user conclusions are apparent or implied in the Freehafer Report (1961), the Fry Report (1962), the Blackburn study at the University of Toronto (1970), and the Stuart-Stubbs Canadian university study (1971). Pro-owner conclusions are apparent or implied in the Little Report (1966) and the NORC study (1966). The CICP Report (1967), while not definitive, does make an effort to avoid recommendations concerning a new copyright law, and tries to present only data. But the known sympathies of its authors for a copyright clearinghouse (discussed later in this article) seem to have made copyright users less favorable toward it than owners.

If the various studies point toward a single conclusion, it is that those owners most alarmed by photocopying are having their books copied least. The ratio of journal titles to books copied was nine to one, according to the CICP survey (*25*); although the comparable Stuart-Stubbs study of Canadian libraries found that 34% of all materials copied were periodicals, and 27.2% were books (*26*). The great majority of all items copied were scientific or technical (41 to 100%). More than 80% of the materials copied were less than 5 years old, according to the CICP. "The number of multiple copies of the same document made for the same client by U.S. libraries is almost negligible," according to the CICP, although the 1971 Canadian study found that 4 to 5% of Canadian publications were recopied. Nonprofit journal copying dominated for-profit journal copying almost two to one; for books, this ratio was one to two, relying again on CICP figures. About 5% of the publishers in the United States produced 40% of the material copied. Journal articles nearly always were copied whole, and books nearly always were copied in part. The "preponderance" of journals copied were American, according to the CICP survey; although Clarke found that "over fifty percent" of the journals copied were foreign, and that, therefore, "this could have no influence on American publishers" (*27*). The CICP findings, however, represent a wider sample, and the 1971 Canadian study found that 47.2% (by far the largest category) of all materials copied were American.

In summary, therefore, the publisher most likely to have a (single) copy made of his works is a "sci-tech," nonprofit journal publisher in the United States, who has been in business only for the last 5 years. These are precisely the people who until recently have been the least concerned with the relationship of neo-publishing technologies to copyright protection. Additionally, photocopying practices in libraries (i.e., single copies of articles and parts of books) seem to relate neatly with the proposed application of statutory fair use to library photocopying, as described in recent copyright revision bills and House and Senate Reports. (These two points are elaborated in later sections.)

The NORC survey provides some more details, particularly in relation to copying practices in higher education as opposed to elementary and secondary education (*28*). Its coordinators, Philip Ennis and Frederick A. Schlipf, found that copying

of published material is considerably greater in colleges than in schools, which tend to photocopy administrative papers. When published works are copied in schools, textbooks are favored, followed by music scores, tests, and answer sheets. College personnel photocopy journals, monographs, and reference books, in that order of frequency.

Book publishers—largely because they, unlike journal publishers, are organized—have been able to object publicly to several of the studies. Julius J. Marke notes that book publishers objected to the Fry Report on the grounds that it focused on journals and libraries, rather than on books and schools (*29*). Since the appearance of the CICP, NORC, and Stuart-Stubbs reports, however, these arguments have been heard with less frequency.

Book publishers contend that, because of heavy initial costs, photocopying and other forms of neo-publishing represent a serious threat to the origination of knowledge. A single high school textbook can require an investment of $50,000, while a series of elementary school textbooks will require as much as $1 million investment before it is ready for marketing; a new encyclopedia recently required $7 million in "make-ready" costs. Furthermore, it is argued, risks in the book publishing business are high. Publisher Lee C. Deighton contended in a House hearing that there "can be no way to know in advance that a book . . . will sell" (*30*). While other industries can market-test a product, publishers cannot until they have a full stock in warehouses, ready for sale.

Despite the facts that books are copied rarely when compared to journals, that tradebooks are seldom copied at all, and that approximately one-third of the portions of books that are copied are published by nonprofit organizations (according to the CICP survey), book publishers are prone to cite the Little Report, which projected a rise in book copying and decreasing photocopying costs. Deighton stated in the 1965 hearings that "it is now possible to copy certain books at a cost less than the purchase price." That same year the American Textbook Publishers Institute, in a letter to Senator John McClellan, chairman of the Subcommittee on Patents, Trademarks, and Copyrights, submitted that 1964 per-page costs of textbook publishing were consistently higher than a photocopy of the same text: college texts had a per-page cost of $0.008, high school texts cost $0.006 per page to publish, elementary school texts were $0.007 per page, and a photocopy of any text cost $0.005 per page (*31*).

Nevertheless, the NORC study indicated that textbooks are still the mainstay in education. This is particularly true for "elhi" texts: "The average secondary school spends about $13,000 a year to *buy* textbooks and workbooks and about $100 a year to copy textbook and workbook pages" (*32*).

In terms of college texts, a recent campus survey conducted by Gilbert Youth Research, Inc., for the College Division of the Association of American Publishers and the National Association of College Stores, indicated that photocopying cuts very little into textbook sales (*33*). Students estimated that they spent an average of $72 on books for the fall term of 1971, half of which was for assigned texts. Of those students who did not buy required books, 42% read the material in the college library, 41% borrowed a friend's copy, 12% went to the public library, and

only 8% made a photocopy. The average university faculty member spent $115 in 1971 for professional books, and usually relied on library copies, reprints, and free "desk copies" from publishers to supplement his reading. If college textbook sales decline (and by 1972 this was beginning to happen), the study concluded, it probably will be attributable to the fact that about 60% of the faculty interviewed (68% of younger faculty members) foresee a decreasing importance of textbooks for teaching purposes.

Related to the college textbook market is the market for the scholarly monograph. Curtis G. Benjamin, former president of McGraw-Hill, has observed a steep decline in the sales of monographs, which he correlates with a rise in photocopying; the average sales of a single monograph over a period of 5 years after its initial publication sank from an average of 4,977 copies sold in 1957, to 2,961 copies in 1972 (*34*). This reduced sales volume served to raise the per-page cost of monographs by 144% over a 15-year period (from 2.5¢ in 1957 to 6.1¢ in 1972). Benjamin argues that scholarly, particularly scientific, monographs must be protected from abuse by the new information technologies, notably photocopying. He predicts that, because of photocopying, "the scientific and technical monographs will disappear" as commercially viable publications by the end of the 1970s, and that the "other classes of scholarly books, including the bread-and-butter university press books, will lose their viability by the end of the 1980s."

While Benjamin's facts on monograph sales are undisputed, his reasoning that links their declining market to burgeoning photocopying practices is open to question. First, as Benjamin admits, he "cannot offer proof of the general point" that "uninhibited photocopying" is causing a sales slump in the scholarly book trade. Moreover, the fact stands that monographs still are profitable to publishers; Benjamin's company, McGraw-Hill, derives about 2% of its total operating profits from science and technology monographs, and, overall, such books accounted for approximately 7.4% of book publishing receipts in 1972 (*35*). Secondly, empirical studies tend to deny that photocopying is a major underminer of monograph sales—if, indeed, it is at all. Vernon E. Palmour, principal investigator for a survey of interlibrary loan practices among 80 representative American academic libraries, found that of the probable 1,940,000 total loan requests in 1970, an estimated 668,000 such requests were for monographs (*36*). Of these, 21,400 requesters asked for photocopies of the monograph, and then only of limited portions of the publication. Hence, of the almost 2 million interlibrary loan requests in 1970, only 1% was for photocopies of sections of scholarly monographs! Moreover, only 71% of all loan requests actually were filled, and only 43% of those requests filled were supplied by photocopies. While interlibrary loan practices do not account for all photocopying in the country, the Palmour study would seem to indicate that relatively little photocopying is done of scholarly monographs.

Journal publishers appear to have considerably more reason for believing that photocopying may affect their profits, as their products are copied far more frequently. Koepke lists "three theoretical kinds of damage that the publisher of scientific and technical journals can sustain": damage to circulation, damage to advertising, and damage to reprint and back issue sales (*37*).

The reprint is, according to the Fry survey, still the medium of communication most preferred by scientists (73% of the Fry sample favored it), and photocopying has not substantially damaged reprint sales (*14*). Advertising losses resulting from photocopying are "the problem of the commercial publisher," whose periodicals are copied at a considerably less extensive rate than those of nonprofit journal publishers. The advertising argument holds that no advertiser will pay for advertising, because users will not photocopy advertisements. The Fry staff did not analyze empirically this facet in their survey, nor has anyone else.

The complaint that photocopying may diminish the circulation of some periodicals is one worthy of further examination. According to the Library of Congress, three new journals are born and one dies every day (*38*). Journal publishing, it may be presumed, is a highly marginal operation, and any financial loss due to inroads on journal circulation that is attributable to photocopying should be prevented if the unhindered dissemination of information is to be continued. This is particularly true of nonprofit journal publishers, who bear the brunt of photocopying practices.

Traditionally, and somewhat surprisingly, nonprofit journal publishers have not subscribed to this view. The Fry survey of 1962, which was the earliest investigation of the attitudes of periodical publishers, stated that the majority of journal publishers polled "encourage photoduplication of their journal articles" on the reasoning that the practice actually boosted the circulations of their publications via free "advertising" through the distribution of photocopied articles and acquainting librarians with their journals' existence by patrons' requests for their journals' articles on interlibrary loan (*39*). This generalization, however, did not apply to "the giants of the industry," who associated (and continue to associate) photocopying with a loss in issue sales and subscription orders. In the mid-1960s a survey by the dean of the University of Maryland's School of Library and Information Services validated the Fry findings on the attitudes of journal publishers (*40*); but by 1969 a study by librarian Matt Roberts of 255 periodical publishers indicated a possible attitudinal shift: although 72% of the respondents extended overall permission to a librarian's request to make five photocopies of single articles for reserve use, a majority of these attached "certain conditions" to their permission, and 16% flatly refused permission (*41*).

There are growing indications of rising concern and possible pro-owner sentiments among nonprofit journal publishers: The American Institute of Physics (whose seven member societies publish 39 journals) and the American Chemical Society (representing 20 publications) filed amicus curiae briefs on the behalf of copyright owners in a recent court suit on photocopying and copyright (the notorious *Williams & Wilkins* case). The American Council of Learned Societies (with 34 member organizations) long has been pro-owner in its position (although a shift in position is occurring), and 14 academic and publishing societies (several of which are pro-owner in their views) formed a Copyright Study Group that has sponsored a treatise, compiled by the Cambridge Research Institute, on the topic of copyright revision (*42*). Still, it would be premature to state categorically that the scholarly associations and nonprofit journal publishers are pro-owner; a number of library, dental, medical, and educational organizations filed pro-user amicus curiae briefs

in the above-mentioned court case, including the Modern Language Association, the American Library Association, the National Education Association, the American Council on Education, and the History of Science Association, among others.

Part of this attitudinal ambiguity among nonprofit journal publishers on the role of photocopying and information dissemination stems from a cloudy correlation between the number of subscribers that a nonprofit journal has and its potential for financial survival. A 1962 survey of 262 representative scientific journals conducted by the National Science Foundation revealed that 211 were published by nonprofit scientific societies, 18 by university presses, and 33 by commercial publishing firms (*43*). The society journals, which comprised more than 80% of the sample, derived only 41% of their annual incomes from subscriptions. Journals published by university presses received 56% of their income from subscribers. No figure was given for the commercially published journals—although subscriptions account for 65% of the income drawn by the Williams & Wilkins Company's 30 journals, which are commercial publications. The major (and rising) source of income, certainly for nonprofit scientific journals, is the page charge. The page charge, which nearly always is underwritten by the federal government, amounts to a public subsidization of information origination.

This lack of reliance on circulation for funds by journals would seem to question the argument that information production and dissemination hinges on readers paying directly for what they read. Moreover, because a majority of nonprofit journal publishers still appear to believe that photocopying encourages their circulations (although this view may be in a process of change), copying technologies would appear, in general, to benefit the dissemination of information as it is circulated in periodicals. What the preceding studies do not analyze is the economic effects of photocopying on copyright users. Nevertheless, photocopying has benefits, and some costs, for users, although these are not easily quantified.

Librarians, in particular, have derived benefits from photocopying. The cost of circulating books, a function that includes replacing vandalized pages and lost volumes, can account for 20 to 50% of a library's budget. Presumably, photocopying can reduce this portion of the librarian's budget because it reduces the need to circulate volumes and provides a substitute for the razoring out of pages by patrons. A survey conducted at the University of British Columbia indicated that 3.5% of the 181 library patrons queried admitted that they would "steal or tear out the wanted pages" if photocopying machines were unavailable (*43*).

How much the emergence of photocopying has contributed to useful research and man's understanding of himself and the world is difficult (to say the least) to measure. It is known, however, that some kinds of scholarship, usually that which involves rare books, could not be accomplished without photocopying. As an example, Charles W. Shilling, director of the George Washington University Biological Sciences Communications Project, has assembled a team that is trying to compile complete, annotated bibliographies of the literature on the baboon and chimpanzee. The project involves "xeroxing all the world's literature in this particular field," a task that "could definitely not be accomplished, no matter how much time and money was available" without photocopies (*44*); the team often

has relied on a single copy of a book which served as the only source in the United States.

An intriguing question to pose in this regard is: which would suffer most, research or publishing, if photocopying were not available? The question is, of course, not easily answered, but the survey taken at the University of British Columbia indicated that research and library budgets might be affected more adversely than publishers' profits. Of the photocopy users who were asked what they would do without photocopiers, 72% said they would copy by hand, 19% said they would forget the whole matter, 5.5% would attempt to purchase, and the remainder would rip out the desired pages.

Relying on the University of British Columbia's figures and recalling that "sci-tech" information is copied most heavily, we can derive an approximation of the costs involved by imagining a situation in which roughly three-quarters of the engineers who needed to photocopy a page or two, instead sat down and wrote the material by longhand. Assuming that an engineer's time is worth $15 an hour in an ordinary industrial complex, it would be far more economical to have him photocopy, at even a dollar a sheet, rather than painstakingly transcribe by hand.

On the other hand, the 5.5% of copyright users who would be willing to buy the original source in the absence of photocopying opportunities (presuming the source was available when needed, if it were available at all) might amount to a respectable increase in sales. Sales mean royalties, and royalties have been essential, on occasion, to an author's livelihood. As we have noted, Herman Wouk has observed that James Joyce and Thomas Wolfe were living "from hand to mouth" on small royalty checks even at the height of their popularity.

On a considerably broader plane, however, the vast majority of writers who are not quite so talented as a Joyce or a Wolfe tend to indulge in authorship while holding down a more mundane job that pays bills on a regular basis. A 1965 survey by the Authors Guild indicated that the average income that authors derived from writing was about $3,000 a year (*45*). An eight-to-five job was a necessity to nearly all the writers questioned, and teaching was one of the most preferred occupations. One might speculate from this and other indicators that authors of the ilk that Joyce, Wolfe, and Marx represented—men who dedicated their life to writing—are waning, and that intellectual creativity is becoming bureaucratized in businesses, laboratories, and universities on even the most humanistic levels.

Rather than banning photocopiers, as a stratagem to increase royalties derived from copyrighted publications, an even more lucrative (and certainly more feasible) arrangement would be the establishment of a "copyright clearinghouse." A copyright clearinghouse, in theory, could charge the user at the photocopier by recording what was copied. The clearinghouse would tally the number of times an author's works were copied within a given period, and the number of pages copied, and would reimburse him and his publisher accordingly from the charges collected by the photocopying machines. A variant of this procedure would be to run periodic checks of what kinds of material were being copied, and in what proportion to total copying; authors and publishers would be paid royalties collected at copying machines in accordance with the category of literature to which they contributed.

At first glance, such a scheme sounds horrendous in terms of equity among data producers and of administrative headaches. A copyright clearinghouse would require dimes to collect pennies; it reeks of "administrivia." On second glance, however, a copyright clearinghouse is quite plausible, particularly when one considers the administrative potential of computer technology and the use and distribution of photocopying machines in the United States. The CICP survey notes that most published material is copied in libraries (*46*), and the 1971 Canadian study indicates that 60.4% of all material copied in university libraries is owned by the library (*26*). Hence, the 15,500 public school systems with centralized libraries and the 22,500 remaining libraries in this country offer an existing, coherent system for administering the arrangement, in conjunction with a copyright clearinghouse. Certainly the American library system is at least as organized as are U.S. radio stations, which are subject currently to parallel regulations under the administration of the American Society of Composers, Authors, and Publishers.

Nevertheless, the costs of a clearinghouse, whatever its structure, would be high. If it were based on individual subscriptions, annual costs could reach $300 million. A theoretically minimal cost of $10 million is possible, but this still could inhibit the dissemination of written works far more effectively than the possible loss of a few royalty payments. In short, a copyright clearinghouse could boost the transaction costs (i.e., the administrative costs incurred in obtaining permission from an owner to copy his product) inherent to any copyright policy. Presently, transaction costs are low, regulated largely by market mechanisms and by free access to photocopiers; with a clearinghouse, such costs easily might soar.

In summation, the economics of photocopying, while unclear in several respects, indicate that the financial incentive to write has not been affected measurably by copying machines. Nor have publishing houses in general suffered any perceptible monetary losses because of photocopying. Conversely, research costs may have been reduced by photocopying, a factor that should promote information production. But it should be reiterated that this situation is not static, and it is the potential use of photocopying more than any other single factor that concerns copyright owners. These observations apply at least equally strongly to other neo-publishing technologies.

Computers and Copyright

Computer-based information storage and retrieval systems comprise the second major economic and technological challenge to copyright as a public policy for intellectual creativity and the dissemination of ideas. The legal complexities of copyright and computers are enormous. When the problem was first recognized, in the early to mid-1960s, the entanglements were of such a novel character that a number of participants in copyright revision echoed the frustration of one lawyer who asked: "and not facetiously—whether the performance of a copyrighted computer program in a public showroom . . . constitutes a public performance. . . . I would like to ask clarification . . . of what was intended with respect to copyrighted works in relation to their use in information storage and retrieval units" (*47*).

So novel, in fact, was the role of information storage and retrieval systems that the Register of Copyrights admitted that in the 1964 Copyright Revision Bill, "we deliberately avoided any specific references to 'computers' or 'information storage and retrieval units'. . . . We think it is safer to draft general language, which can be interpreted by the courts to apply to particular usages" (*48*).

Bella L. Linden, who was counsel for the American Textbook Publishers Institute at the time she participated in the Congressional hearings, was among the first to analyze in detail the implications of information storage and retrieval systems for the copyright concept (*49*). Gipe stated that "[with her] words, Bella Linden changed the focus of the 1965 copyright revision hearings" (*50*). Perhaps Gipe's contention is overstated; the Ad Hoc Task Group on Legal Aspects Involved in National Information Systems, of the Committee on Scientific and Technical Information (COSATI), Federal Council for Science and Technology, accurately noted that the "subject of information storage was only briefly considered by the House Committee at its Hearings on H.R. 4347 in 1965," and that no "testimony was offered by any government agency on the impact of the proposed copyright revision on the computer usage of copyrighted material" in the 1967 hearings (*51*). Computers as an issue for copyright also were ignored during the Senate hearings in 1973, and only considered briefly in 1975.

Computer manipulation of information may be categorized according to three processes: input, scanning, and output. Each one of these processes involves a potential infringement of copyright, although infringements must be defined in a context that might have appeared quite bizarre to the original framers of the 1909 act.

Input, or feeding information into a system, requires the "translation" of data into a computer language in order to record it on cards or tapes; for example, information written on survey research forms in English must be "translated" into numeric codes before the computer can use it. Since translation of a work is the legal prerogative of the copyright proprietor, an infringement may be evident when copyrighted data are encoded on punch cards or tapes.

Scanning, or the means by which the system reviews and retrieves data stored in its memory banks, also holds a potential danger of copyright infringement. It is possible that scanning might be the exclusive prerogative of the copyright owner of the information scanned, in that scanning data might be comparable to a performing right. In other words, the computer system is giving a "performance" using copyrighted data without the permission of the copyright owner.

Output involves a "republishing" of the computer system's data. When a computer user programs a system, which stores copyrighted data, to yield certain kinds of information, he or she may be creating a new anthology of copyrighted works that is "published" by the computer. Merely because information is assembled electronically on viewing screens or printouts, rather than printed in conventionally bound books, does not mean the information is rendered any less free from copyright restrictions. Sophistication of format is no escape from copyright.

The 1976 Copyright Act affects computer-based information storage and retrieval systems in that, in certain instances, the act could require researchers to secure permission from copyright owners in order to use their materials in com-

puter runs. The point still is open to legal interpretation, but—in cases where the judicial doctrine of fair use is not applicable—computer users could be subject to copyright infringement suits. Copyright owners contend that their intellectual property would escape copyright law merely by being run through a computer prior to its distribution; requiring permissions from users at the "input" stage of a computer project would discourage this.

There are several arguments that can be voiced in behalf of the copyright owners' case concerning copyright control of input. One is that copyrighted input material is not very likely to be reproduced in its entirety as the end product of a computer run. Rather, such data probably would be produced by a computer system selectively, such as in providing answers to test questions, and thus likely would be subject to protection from infringement suits under the judicial doctrine of "fair use." This argument concludes, therefore, that the sales of copyrighted works might decline.

The preceding argument is the principal contention of copyright owners relative to copyright control at the input stage of computer runs. Other arguments revolve around the cases of works with limited sales potential, such as scientific monographs: (*a*) Unless compensation is paid at input, scant royalties will be garnered by those publications seldom used by computer users because, while only one copy of the publication need be purchased by a computer system, libraries connected with that system might otherwise buy more copies if they were not connected with the system. (*b*) It is easier to control the input stage of the computer process than the output stage, because a copyright owner may be unable to calculate how many times his works have been reproduced as computer outputs. (*c*) The copyright owner is more able to discourage "distortion" of his works at the input stage than at the output stage (we consider the "distortion" argument in greater detail in terms of the public domain policy in the following section).

Arguments against copyright control of input appear to be more persuasive than are those waged for it. One is that because some material may be rarely used by the system's users, the system's owners will never be able to recoup the initial costs of paying for copyright permissions at the input stage; hence, control of output is relatively more desirable and reasonable. Another argument is that a permissions requirement on computer input could hamper scholarly research. Anthony G. Oettinger, director of Harvard University Computer Center, has objected in congressional testimony that:

> I would have not only to acquire and evaluate materials, but in each instance, before experimenting with them, seek out the owner of a copyright, if any, make formal requests for permission to use the material, pay royalties . . . etc. All this before any material could actually be used and, in fact, before I could find out whether or not the material was useful! The delays, the frustrations and the chaos inherent in such a process now seem so formidable that . . . I would be tempted to return to the safer occupation of copying out manuscripts with a goose quill pen (*52*).

Some additional objections to control of the input stage include those that in-

volve the potentiality, in effect, of paying double royalties to copyright owners. For instance, should it be decided by policy makers that both input and output should be subject to copyright, then users would be paying twice for use of the same material. Or, in the case of computer data-sharing arrangements, copyrighted material transferred from one machine to another might be charged two input fees.

Finally, charges at the input stage may have some adverse effects on nonprofit educational institutions. The Interuniversity Communications Council, an organization of universities with interests in information technology, was the first users' group to call attention to the fact that, by requiring a copyright toll at the input stage of a computer run, certain exemptions for nonprofit institutions could be destroyed. Section 110(1) of the 1976 act exempts from copyright infringement suits the "display of a work by instructors or pupils in the course of face-to-face teaching. . . ." To place a copyright toll at the input stage might abrogate this exemption.

Copyright control of output by computers also is being contemplated; that is, can a computer printout of a copyrighted passage constitute an infringement of copyright? Involved in output-related issues are questions concerning "display" and fair use.

The present law grants the copyright owner the exclusive right to display his nondramatic literary work. Nevertheless, the scanning process that is part of the internal operations of the computer may be considered a "display" that is legally subject to the control of the copyright owner. In 1967 a conscientious report by the House of Representatives stated that "the mere scanning or manipulation" of copyrighted data recorded in a computer should not be considered a violation of copyright (*53*); but the act passed by Congress tends to skirt the display issue as it pertains to computers.

Also, when a computer ultimately disgorged its output, it would be subject to possible copyright infringement suits. If printouts or viewing screens replicated sizable amounts of copyrighted data already stored in the computer's memory banks, then it might be violation of copyright. "It" is an interesting word in this context. In terms of computer output, who or what would be "responsible"? The programmer? The program? The printout? Or the computer itself? In computer operations, these distinctions can become blurred.

A second and related aspect of copyright extending to computer usage of information refers to the registration of computer programs in the Copyright Office. The 1976 Copyright Act defines copyright in terms that may be adequately broad to include computer programs, depending on subsequent interpretation by the courts. Section 102(a) states that copyright protection "subsists . . . in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with aid of a machine or device."

A computer program may be defined as instructions that set a computer's "switches" in order that it can function in a particular way. There are three kinds of programs: *systems programs*, which control the operations of the machinery itself (e.g., an operating, or executive, system); *application programs*, which solve particular problems (e.g., the various programs used by scientists); and *utility pro-*

grams, which can be used by a variety of users (e.g., a "debugging" program that corrects mistakes in other programs).

The question of registering computer programs is a hazy issue. The issue arose when John F. Banzhaf III wrote a program for law research in 1964, and decided to protect it. He discovered that the U.S. Patent Office had ruled that computer programs could not be patented, and he eventually secured the first copyright for a computer program. Banzhaf and other copyright users contend that copyright protects the effort required to compile some kinds of programs, not the program's "idea," and that copyright thus provides motivation to produce computer programs by distributing its cost among its users.

Since 1964, when the first copyright for a computer program was registered, only 1,200 programs had been registered by late 1975. This low number indicates that program developers find copyright unsuited to their needs. There are several reasons for this. One is that systems programs frequently are sold by computer manufacturers as part of their sales "package," and development costs are absorbed in those sales. Second, application programs which, by definition, must be written in accordance with a particular user's needs account for about 60% of all program development costs; these individually tailored programs are hardly compatible with mass-oriented copyright concepts. Finally, utility programs, which one might think should derive the greatest benefit from copyright, are accompanied by expensive supporting items, such as documentation annuals, debugging arrangements, and periodical hardware adjustments that are made for the individual client. The cost of these supporting items often equals or exceeds the cost of the original utility program, a fact that tends to undercut the applicability of copyright to even these relatively mass-oriented computer programs. While it seems possible that copyright protection might be appropriate for generally usable, "off-the-shelf," low-priced programs that are sold separately from computer hardware and to widely dispersed buyers (who would be unlikely to find it practical to agree on time-sharing arrangements), copyright does not now appear to be a public policy that benefits the distribution of information as it is formatted in most computer programs.

Overall, what are the advantages and disadvantages of copyright protection of computer-based data and computer programs? The advantages of copyright protection seem reasonably straightforward. One such advantage is that registering a work in the Copyright Office is simple and cheap, which is not the case in patent registration (which has been proposed as an alternative to copyright protection of computer programs). Also, under copyright law, once infringement is proven, a copyright owner can collect damages even though no actual damage is demonstrated.

These "advantages" of copyright protection of computer systems are predicated on the notion that such protection of the program developer is indeed desirable as a public policy because it facilitates the growth and use of knowledge. Similarly, many of the disadvantages of copyright as a public policy for computers are premised on the same presumption. For example, copyright, as we indicated earlier, does not protect the original "idea" behind the program. Rather, copyright as a

concept prohibits only the outright copying of the program and does not protect the originality, creativeness, and inventiveness of the program's designer, as patent protection is designed to do. Second, copyright protection probably would not protect against a computer using the program. This notion relates to the judicial doctrine of fair use (which, for the first time, is now written into statutory law), but more directly to a related court-created idea. In 1880 the U.S. Supreme Court ruled in *Baker* v. *Seldon* that the "methods and diagrams" used in an art book for purposes of showing the reader how to improve his art were not protected by copyright. Such techniques were "necessary incidents to the art, and given therewith to the public," because they were used "for the purpose of practical application." This decision still stands, and in 1967 the Deputy Register of Copyrights relied on it in explaining copyright and the computer use of computer programs: "If you had a copyrighted program, which somebody finds it necessary to use, such use is not an infringement" (*54*). Finally, policing the use of computer programs, as with the photocopying of copyrighted works, is extremely difficult. In both cases, technology has skipped away from the cumbersome authority of the state.

The advantages and disadvantages of copyright as it relates to computers that we have reviewed are "practical" ones. That is, they implicitly assume that some kind of public control is needed over the use of computer programs. There is a far more fundamental issue: Should information needed for computer manipulation of knowledge be limited at all? Copyright, after all, was not designed with computers in mind. In an extensive study of copyright and computers, an Ad Hoc Task Group of the Council on Scientific and Technical Information of the Federal Council for Science and Technology observed that "copyright may hinder the maximum efficient use of national information systems" (*55*). The effects of such hindrances would squelch the growth of information systems within the disciplines, perhaps render illegal abstracts of articles now used in information systems, and delay inclusion of (or possibly exclude) some information from systems even after the copyright owner is contacted.

More significantly, perhaps, copyright appears to be growing increasingly irrelevant to the actual and practical development of computer-based information systems. In an interview published in *Publishers Weekly* in 1973, John Price, director of Exxon Corporation's sophisticated information center, stated that publishers should solve the theoretical and technical problems of transmitting single-copy volumes over long distances "before worrying so much about the legalities of copyright" (*56*). Price, for example, has not worried about such legalities, and is a managerial leader in the business of business information. He believes, and possibly rightly, that publishers "are going to have to restructure their ways of doing business" in light of the new technologies and the new patterns of informational needs and use.

While some private businessmen question copyright as a public policy, so do America's public officials. The executive branch has questioned copyright with its "public domain policy," the legislative branch has evolved its "not-for-profit principle," and the judicial branch has created the "fair use doctrine."

We consider these exceptions in turn and review some modifications of, and alternatives to copyright that hold some potential for being more responsive to the new information technologies.

The Dysfunctions of Copyright: Three Official Recognitions

THE EXECUTIVE PUBLIC DOMAIN POLICY

The most outstanding of the recognitions that copyright may no longer be adequate as a public policy for knowledge management was expressed in Section 8 of the 1909 Copyright Act, which stated that "no copyright shall subsist . . . in any publication of the United States Government, or any reprint, in whole or in part. . . ." This clause amounted to exempting all U.S. government publications from copyright restrictions on the ground that such publications are in the public domain. The exemption is continued in Section 105 of the present act, which states: "Copyright protection . . . is not available for any work of the United States Government, but the . . . Government is not precluded from receiving and holding copyrights transferred to it by assignment, bequest, or otherwise."

This clause was not always in U.S. copyright laws. Traditionally, it was assumed that federal publications were in the public domain. It was at the turn of the 20th century when Congressman James D. Richardson compiled the book *Messages and Papers of the Presidents*, and printed it at government expense under his own copyright; Washington's Farewell Address and Lincoln's Gettysburg Address were included. Richardson "earned" $11,320 in royalties, and in the process, initiated a Senate investigation which concluded that "the law as it stands is sufficient to deny copyright to any and every work once issued as a government publication" (*57*). Nevertheless, it was thought prudent to state this point explicitly when the law was revised in 1909.

Recognition by the copyright law itself that copyright is, in instances of documents in the public domain, a policy not in the public interest serves as a remarkably candid statement on the part of policy makers relative to the inadequacy of copyright as an information policy. A panel of leading editors and scholars noted a few years ago that the "Federal Government is today the major source of information in practically every field of endeavor" (*58*), emphasizing what we already have documented in the first section: that the exemption of publicly sponsored information from copyright restraints is not a minor one.

Because the exemption is not small, pressure has been brought on policy makers to weaken its applicability. In 1965 the U.S. Office of Education (USOE) took a strong stand on the right of government to remove copyright status from works it had funded by inserting in the *Federal Register* a ruling that stated:

> Material produced as a result of any research activity undertaken with any financial assistance through contract with or project grant from the Office of Education will be placed in the public domain [and] . . . will be available to conventional outlets of the private sector for their use (*59*).

The USOE statement affected a publishing industry of roughly $1 billion in magnitude, which is about what American schools spend annually on teaching materials. USOE itself regularly distributes about $100 million in research funds.

While the USOE policy did not represent a change in law, it did signify a change in fact. The Office of Education traditionally had permitted its researchers to copyright their products, although it also required the researcher to give the government a royalty-free license to use his work as it chose, and to authorize others to do so as well. Copyright was a frail instrument in these cases, but nevertheless was thought by some researchers and publishers to be worthwhile and binding. The new ruling changed this impression.

Publishers responded by arguing that copyrighting and commercially distributing works financed by taxpayers was indeed in the public interest because it: expanded the works' audience, saved the taxpayers' money by placing distribution costs on private firms, increased the works' availability, and prevented the distortion of material.

The reasoning behind these arguments is not entirely clear. For example, the publishers' contention that copyrighted commercial publications would be more widely read than uncopyrighted government publications is not supported by facts. Some of the all-time best sellers in America have been government documents: more than 13 million copies of *Infant Care* have been sold, 7.6 million copies of *Your Federal Income Tax,* 7.4 million copies of *Prenatal Care,* and 5.7 million copies of *Your Child from One to Six.* On the other hand, a best seller in commercial circles usually is defined as any book that sells more than 50,000 copies.

Moreover, publishers have made profits on uncopyrighted government documents without copyrighting their own versions: the Warren Commission's report (from which five publishing houses made money), the Surgeon General's Report on Smoking, the report of the President's Commission on Civil Disorders, and the notorious Watergate transcripts are examples. A few years ago AMS Press announced that it was reprinting the 39 volumes of congressional hearings on *The Pearl Harbor Attack* and the 42 volumes of *The Nuremberg Trials,* both of which originally were published by the government but are now out of print. Respective prices for the buckram-bound sets were fixed at $1,890 (or nearly $41 per book) and $1,300 (or $31 per book). Publishers hardly seem excluded from profits by the absence of copyright.

Publishers also contend that distribution of government-sponsored research through private firms saves public money. This argument assumes that the U.S. Government Printing Office oversees a losing operation, which it does not; generally, the Government Printing Office makes a profit. In this connection, Senator Russell B. Long has observed that to reason that the federal government should both finance the research and secure private profits by extending copyright protection to the same research "is tantamount to saying the Government should finance the building of highways and then permit private companies to charge tolls" (*60*).

The argument that extending copyright protection to government research would increase the work's availability by providing firms an incentive to disseminate it

seems particularly spurious. Copyright protection now can endure on any single item for the better part of a century, and thousands of successful law suits have been initiated by copyright owners against users who have tried to shorten the duration of copyright. Many researchers enjoy copyright protection even though they never have had their writings distributed by publication.

In this vein, copyright is seen by some to be an effective censor of sensitive public documents. Major General C. G. Dodge, the Army's chief of information, has written that copyright has prevented the quotation of public material out of context, and thus is beneficial to the public interest in that it has discouraged such practices (*61*). Another way of phrasing this viewpoint (which generally is supported by copyright owners) is that officialdom may stop the public's use of public information, if such use is inconvenient to particular bureaucrats.

Dodge's statement leads to the final argument of publishers: that copyright prevents an author's ideas and material from being distorted by more shallow intellects. A more reasonable view would be that since no scholar can claim ultimate wisdom, "tampering" with his ideas is as likely to lead to beneficial as detrimental results. In any event, the fact that innovation is being encouraged due to the absence of copyright would seem sufficient cause to risk a few misrepresentations of research.

If the arguments of publishers against a public domain policy are less than watertight, publishers nevertheless have been able to gain two legal victories. The first was a relatively minor concession by the Office of Education in 1968 which amounted to a somewhat more flexible doctrine on what kinds of government-funded research could be defined as being in the public domain. The new USOE statement says that exemptions to normal public domain criteria will be granted to works for which it can be shown that copyright offers essentially the only feasible route for getting the material published, and that USOE may limit the duration of copyright according to its own judgment.

The second concession to owners was more substantial and is found in the definition of "a work of the U.S. Government," as defined in the Copyright Law Revision Bills appearing since 1967. Such a work is defined in Section 101 of the Copyright Act as one "prepared by an officer or employee of the U.S. Government as part of his official duties"; the definition omits reference to outside research funded in part by federal agencies, which accounts for roughly 85% of federal R&D activities.

While the USOE's modified public domain policy and the new definition of a work of the U.S. government are concessions of some advantage to the friends of copyright, it nonetheless stands that the basic view of the federal establishment is anticopyright in terms of originating and disseminating information that is financed by taxpayers.

This position was reaffirmed by the United States government in 1971 and in 1973. In 1971 the National Institutes of Health (NIH) announced in the *Federal Register* that "a policy change" with regard to copyright and research funding was being made, and in 1973 this change was modified and established (*62*). NIH policy now holds that "any publication, film or other similar communication material developed or resulting from a project supported in whole or in part" by an NIH

grant may be copyrighted by the author or by the journal publishing the research; but, such a copyright "is subject to a royalty-free, nonexclusive and irrevocable license or right in the government to reproduce, translate, publish, use, disseminate, and dispose of such material and to authorize others to do so." Additionally, NIH-funded research may be copied in single copies by individuals using "any means available to them, without regard to the copyright of the journal, and without royalty. . . ."

Such a policy represents a formidably anticopyright attitude on the part of the federal bureaucracy. Moreover, such a view possesses some logic and it affects the creation and distribution of a vast portion of information in society.

THE LEGISLATIVE NOT-FOR-PROFIT PRINCIPLE

A second official recognition that copyright is not always the optimal public policy toward publicly accessible information is the "not-for-profit" principle. The not-for-profit limitation authorizes nonprofit, public performances of nondramatic literary and musical copyrighted materials without requiring the permission of the copyright owner. Educators long have assumed that the not-for-profit principle protected educational uses of copyrighted works from infringement suits. Although the Register of Copyrights recommended that the not-for-profit principle be retained, it has been deleted from the current Copyright Act as the result of an agreement in 1966 between copyright owners and users. Nevertheless, despite the formal deletion by Congress of a not-for-profit principle, the thinking that educational and scholarly activities should be protected from copyright-induced inhibitions is reflected in numerous other sections of the act.

The Copyright Act of 1976 has clauses in it that specifically exempt a substantial portion of library photocopying from infringement suits; omit restrictions on student uses of information storage and retrieval systems; exclude instructors, librarians, and archivists who copy protected material in good faith from prosecution by copyright owners; give statutory recognition to the judicial doctrine of fair use; and establish a moratorium on copyright infringement suits involving information storage and retrieval systems until further study of new data technologies can be made. The reasoning behind all these clauses is that nonprofit uses of copyrighted information are involved, and they would seem to amount to a de facto (if not, perhaps, de jure) recognition by legislators of the traditional not-for-profit limitation so long a part of American copyright law.

A recent report published by the Senate Committee on the Judiciary explains this new thrust of the not-for-profit principle in the new act (*63*). Section 106(4) is designed, in the words of the report, "first to state the public performance right in broad terms, and then to provide specific exemptions for educational and other nonprofit uses. This approach is more reasonable than the outright exemption of the 1909 statute." These specific exemptions are found in Section 110, Clauses 1 through 4 of the act.

Clauses 1 and 2 cover educational exemptions. Clause 1 exempts the display or performance of all types of copyrighted work (for example, computer displays or photocopies) from infringement suits when such performances are given "by in-

structors or pupils in the course of face-to-face teaching activities of a nonprofit educational institution," where these activities occur "in a classroom or similar place devoted to instruction." Clause 2 exempts from infringement suits instructional broadcasts (with certain limitations) that use copyrighted works. Clause 3 affects works of a religious nature, and Clause 4 is "a general exception to the exclusive right of public performance that would cover some, though not all, of the same ground as the present 'for profit' limitations," that is, public performances of nondramatic literary and musical works. It is a more restrictive clause than the last version, however, because the exemption is limited to public performances given directly in the presence of an audience, although such performances could be given by nonhuman "performers," such as a computer. In addition, no profit motive can be present, no direct or indirect payments may be charged for the performance, and any proceeds deriving from the performance cannot be used for private gain.

In sum, the changes in the "not-for-profit" principle of the 1909 act reflect a desire by legislators to protect private enterprises (particularly broadcasting corporations) from unfair competition, but overridingly to assure that nonprofit educational institutions are in no way restricted by copyright owners from using the new informational technologies for the optional benefit of their students. The not-for-profit limitation is a major legislative exception to the copyright concept as a public policy for knowledge management, and its viability remains very current in policy-making circles.

THE ADJUDICATIVE FAIR USE DOCTRINE

A third recognition by policy makers that copyright arrangements do not facilitate the transmission of knowledge in all circumstances has come from the courts. The judicial doctrine of "fair use" is a powerful anticopyright tool, the origins of which can be traced back as far as 1841 in this country.

Fair use represents an effort on the part of the courts to ameliorate the effects of a literal interpretation of what the Copyright Act of 1909 said "copyright" meant. The former general counsel of the Copyright Office has characterized fair use as a "safety valve" on rigidity of the law's definition of copyright. He observed that

> [if] the author's exclusive rights were absolute, if they restricted every use of his work, then copyright could indeed become a road block to the growth and spread of learning and culture. To achieve the purposes stated in the Constitution, the works of authors must be made available for use by the public while, at the same time, the author enjoys such exclusive rights as will give him a just reward for his contribution to society (*64*).

No one ever has really defined fair use. It did not appear in the United States Copyright Law until 1976, and evolved (again in the words of the former general counsel) as a result of "the necessity for interpreting the exclusive right to 'copy' as being subject to a rule of reason, without which copyright could become an intolerable restraint on the public's use of copyrighted material." The Register of Copyrights, in his 1961 *Report* on copyright law revision, stated that the "term eludes

precise definition: broadly speaking, it means that a reasonable portion of a copyrighted work may be reproduced without permission when necessary for a legitimate purpose which is not competitive with the copyright owner's market for his work" (*65*).

The Register also noted that to determine whether a specific use of a copyrighted work was fair use or infringement, the courts generally relied on four criteria: "(1) the purpose of the use, (2) the nature of the copyrighted work, (3) the amount and substantiality of the material use in relation to the copyrighted work as a whole, and (4) the effect of the use on the copyright owner's potential market for his work." While these bases of judicial decisions may vary and interrelate, the fourth criterion, "the competitive character of the use—is often the most decisive."

How the doctrine of fair use affects users of information technologies, notably library and education interests, remains unclear. Borge Varmer, author of an early study on library photocopying commissioned by the Register of Copyrights (*66*), states that "the justification for the photocopying of copyrighted material would seem to be sound on the doctrine of 'fair use'," a notion that the Register's *Report* echoes. Walter L. Pforzheimer, a trustee of the Yale University Library and a recognized authority on copyright law, takes a counterview (*67*). He argues that if "there is one thing which library photocopying is *not*, it is *not* fair use within any judicial usage of that doctrine." Furthermore, contends Pforzheimer, "the replication of copyrighted material as now practiced by libraries seems to be a violation of the Copyright Law, and in extreme cases carries severe overtones of unfair competition."

In terms of scholarly interests, it also has been argued that fair use justifies copying for educational purposes. The Register's *Report* of 1961 stated that "the general scope of fair use can be indicated by . . . quotation of short passages in a scholarly or technical work" and "reproduction by a teacher or student of a small part of a work to illustrate a lesson," among other examples. But, in conjunction with problems of library copying, authorities differ as to whether fair use has any relation to the scholarly use of copyrighted material. An observer who is at once a librarian, educator, and publisher asserts that fair use has no relation whatsoever with the "private use" of material, by which he means copying of copyrighted material for research purposes (*68*). Private use is legitimate under copyright law, but should not be confused with the concept of "public use" of copyrighted works, which is included under the doctrine of fair use. Public use questions arise when material is copied and subsequently published to the extent that it is in unfair competition with the copyright owner.

Arguments revolving around whether fair use is or is not relevant to photocopying and other information technologies may prove moot. Congress appears to have acted on the assumption that fair use is pertinent to photocopying, and has issued statements to that effect. Of particular interest in this regard are House Reports No. 2237 and No. 83, and Senate Report No. 93–983. One scholar has stated that these reports "will be weighed heavily in future court decisions on fair use," and there seems scant reason to doubt her appraisal (*69*). The documents reiterate the guidelines regarding fair use that are found in the Register's *Report* of 1961, although Senate Report No. 93–983 is the more recent and cogent of the three. All the re-

ports make it clear that photocopying by educators and librarians is to be governed by judicial interpretations of fair use. Senate Report No. 93–983 states that fair use is intended in part to protect teachers who photocopy copyrighted works for classroom use and who are doing so in good faith: Section 107 of the present act states that a copyrighted work includes copies made "for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research," adding that these uses are "not an infringement of copyright."

The views of copyright users, particularly of educators, toward the doctrine of fair use occasionally seem ambiguous. Over the years, users have uttered sentiments that betray both love and hate for the concept. Harry N. Rosenfield, counsel for educators in the copyright dispute, has at once spoken of its "wholly inadequate helpfulness" and also has referred to the doctrine as "a constant and continuing right" (*70*). Nevertheless, it is clear that user interests deeply desire a statutory provision on fair use that incontrovertibly protects limited educational and scholarly copying, and they, in fact, gave up the wording of the "not-for-profit" principles contained in the 1909 act in exchange for just such a provision in the current Copyright Act, as part of a political deal in 1966.

In summary, while fair use remains an elusive concept, it nonetheless has been written into statutory law as a protection against infringement suits for educational, scholarly, and informational uses of copyrighted works. The four criteria used in determining its applicability in particular infringement cases will be subject to further refinement and relative balance by the courts. Nevertheless, fair use stands as additional official testimony that copyright is not inevitably the maximal means of creating and disseminating information.

The public domain policy, the not-for-profit limitation, and the fair use doctrine (including the notions of public and private use) amount to officially sanctioned statements of some significance which question the validity of copyright in terms of the public interest.

The public domain policy is of greatest concern to the executive branch of government, the not-for-profit principle is centered in the legislative branch, and the fair use doctrine is the contribution of the judicial branch. Copyright affects all branches of government, and all branches of government have taken substantial exception to it as an adequate policy for knowledge management. Of such significance, in fact, are these three exceptions that a consideration of modifications and alternatives to copyright seems in order.

Traditional Copyright: Proposed Modifications and Alternatives

POLICY ADAPTATIONS FOR A TECHNOLOGICAL SOCIETY

Before we plunge into a review of alternative policies to copyright that reflect the direct impact of the new information technologies, perhaps it would be appropriate to consider those options that, while not directly reflective of the influence

of the new information technologies, nonetheless have a growing appeal because of the more general conditions prevailing in a fast-changing technological society. Two proposals that deserve serious contemplation in this regard are the reduction of the copyright duration period and the institution of nonexclusive licenses to publish.

A copyright duration of the present lifetime plus 50 years appears somewhat excessive. It obstructs the republishing of information even when the original owner no longer publishes it (or never published it), and it can give exclusive control of knowledge to copyright owners for more than half a century. One recalls General Dodge's thinking on the usefulness of copyright as a censorship tool in this regard; if a person or institution can "sit" on sensitive information for more than 50 years, and even bring a likely successful court action against anyone who tries to disseminate that knowledge, then the information would be effectively censored. In this light it is noteworthy that the Soviet Union regards copyright as a most effective censor. The Soviets set up a new Copyright Agency as a result of Moscow's signing of the International Copyright Convention in 1973. Boris D. Pankin, head of the agency, has stated that all Russian works to be published abroad first must go through his office; should a Russian author circumvent the Copyright Agency, he would be subject to prosecution (*71*). Western observers have charged that Pankin's agency will be used to keep political dissidents from publishing abroad.

To contend that copyright is a potential ally of censorship is to consider only an extremity of the argument against excessive duration periods. But copyright indubitably can be a hindrance to the optimal dissemination of knowledge, and the longer that copyright applies to a work, the longer that information's distribution can be discouraged. Indeed, the initial five extensions of the Copyright Act of 1909 had, as of 1971, kept about 70,000 volumes out of the public domain.

The rationale adopted by Congress maintained that a long copyright duration assured the ongoing support of widows, widowers, and children of authors. Yet few—very few—authors took advantage of the 1909 law as a means of supporting their spouses and progeny after their deaths. Barbara Ringer, the Register of Copyrights, has observed that only 15% of all copyrights were renewed at the end of 28 years (*72*). In other words, 85% of all copyright owners were quite content to make do with a copyright lasting 28 years rather than the 56 that were available to them. In sum, the trend toward long periods of copyright duration seems increasingly dysfunctional as a public policy for knowledge management.

Exclusiveness of licensing is the other major modification and the chief cause of monopolistic overtones in the copyright industry. By granting an exclusive license to a publisher to disseminate his work, an author permits that publisher to decide how much he should be paid for his effort. The publisher need not concern himself that a competitor will offer his author more remuneration, because the law grants him an exclusive license to publish the work for the author's lifetime, once the author signs the contract.

A nonexclusive license to publish would be more beneficial to authors than the present arrangement. Although it is possible that the excessive market power possessed by some book publishers has resulted in more profits for their authors by restricting entry into publishing, it seems probable that competition among publishers for valuable works would increase authors' revenues generally and book cir-

culation as well. This could be accomplished by allowing authors to sign with a second publisher, provided that the second publisher would reimburse the initial publisher for make-ready costs not yet recouped. Or, an initial publisher might be granted an exclusive license for a short period of time designed to reduce his financial risk, after which the author could let out his work for new bids. Nonexclusive licensing is a modification of copyright that offers some potential for increasing the income of authors while facilitating the dissemination of knowledge. In this regard, it offers a viable counterargument to those who urge lengthier periods of copyright duration as a means of enhancing the financial security of authors.

POLICY ADAPTATIONS FOR THE NEW INFORMATION TECHNOLOGIES

A shorter copyright duration and nonexclusive publishing licenses are two possible policy modifications that address the role of knowledge in a technological culture. Other proposals for modifying (or eliminating) copyright have as their focal point of concern the direct challenge posed to the creators and subsidizers of knowledge by the new information technologies.

A number of persons interested in the dissemination and control of knowledge have proposed multiple concepts of copyright, with each concept tailored to the particular medium to which it is applied. John Stedman of the American Association of University Professors and attorney Charles H. Lieb have argued that "it will not be helpful to lump all kinds of publishing into one indistinguishable mass and to treat them all alike" (*73*). Bella L. Linden has suggested "the possible need for two laws, one a traditional copyright law for individual authors, and another to cover kinds of information, kinds of distribution and manipulation, and kinds of storage" (*74*).

The notion of copyright laws tailored to media appears to be a legal echo of McLuhanesque perceptions of communications. Marshall McLuhan has made a case for the idea that no message is precisely transferable from one medium to another and that, in a very real sense, the medium creates a new message and new conditions for the originator and recipient of the message. Thus, not only is the medium the message, but the experience, the "massage" of the artist and public (*75*).

The idea of tailored copyrights has not yet been thought through. Nevertheless, tentative suggestions generally view photocopying and information storage and retrieval systems as concepts that theoretically can be administered under a single principle of knowledge management. Statutory fair use appears to be the most likely de facto (if not de jure) copyright "law" for neo-publishing technologies. Abe A. Goldman, formerly of the Copyright Office, has stated that "perhaps the extent of permissible reproduction by the computer will involve the same sort of fair use considerations as are presently to be seen in the problem of photocopying" (*76*). Ralph S. Brown, Jr., of the Yale Law School, has noted that: "Practically, ephemeral projections from photocopies and from computers should be treated alike, with considerable scope for fair use, and a library privilege of display to readers if the work displayed is legitimately in the possession of the library" (*77*).

Paul G. Zurkowski of the Information Industry Association has suggested "format copyright," statutory encouragement of licensing for reformatting data, and an identification numbering system for books as "post-Gutenberg copyright concepts" (*78*). These updated versions of copyright would coexist in tandem with traditional copyright, which Zurkowski believes to be more author oriented than publisher or neopublisher oriented.

Alternatives to copyright also have been forwarded. In Law Professor Julius J. Marke's opinion, alternative means of compensating authors will develop naturally because "technological breakthrough will change the concept of author protection . . ." (*79*). He foresees authors selling their wares directly to information system operators, with remuneration "based on use rather than on sales." Marke envisions a system in which scholarly works would be programmed into a highly sophisticated, national information network that would tally use units and compensate authors through prearranged accounting procedures. He concludes his scenario by positing users as subscribers to information networks (primarily students, teachers, and researchers), with dues to the system paid via a "library fee."

The Ad Hoc Task Group on Legal Aspects Involved in National Information Systems of the Committee on Scientific and Technical Information, Federal Council for Science and Technology, also has addressed specifically the peculiarities of computers and copyright, and has identified some 20 proposals, ranging from the abolition of copyright to the elimination of all exemptions from copyright (*80*). These modifications and alternatives are worth some examination.

One group of these proposals emphasizes access to information by users as its prime value. These suggestions include the discarding in toto of the copyright concept; complete exemptions for information systems and institutions supporting federal programs, because they are "helping promote progress"; the establishment of a not-for-profit exemption; and exemptions for certain types of material, for example, scientific and technical writings. The difficulty here is how to define such material. A final proposal which stresses access is that of exemptions for certain kinds of use. This is a somewhat superior suggestion to that which urges exemption of particular types of material, but, in the opinion of the Ad Hoc Task Group, it shares the disadvantage of the second and third proposals, in that they could place inequitable burdens on nonexempted groups.

Other alternatives attempt to address the problems of compensation to the owners as well as access by the user. Included under this category is that of establishing broad exemptions with arrangements made for compensation. For example, lump sums could be paid to authors of technical materials. The reasoning here is that since three-quarters of all scientific and technical works are supported by the federal government, the government should pay for them. Or, periodic payments could be made to authors and publishers for unrestricted use of "updated tapes" in information systems. Finally, recognition of the author could be granted by requiring reference to him when a certain number of his words are reproduced; this is in itself "a form of compensation."

Other proposals trying to reconcile access with compensation deal with the institution of assessment periods: for instance, the granting of a moratorium on copy-

right infringement suits by nonprofit institutions, during which time a study could be undertaken of the implications of computers for copyright law; or, a study-now, legislate-later policy could be charted. Such a course, however, would place nonprofit groups under constraints that could be avoided by establishment of a moratorium. Finally, we could legislate now, but establish provisions in the law for a moratorium on inputs into information systems and for a study of their copyright implications. Such a policy, unfortunately, could inhibit the free development of information storage and retrieval systems, in the view of the Ad Hoc Task Group.

A final cache of proposals which attempts to balance access against compensation addresses licensing arrangements. For example, the institution of statutory licenses and fees for scientific, technical, and educational materials and users identified with these fields could be inaugurated. Under this proposal, operators of information storage and retrieval systems would make "a reasonable effort" to contact copyright owners, but could use their works whether contact was established or not. Payment (no fines, only normal royalties) would begin when, and if, the proprietors were found. Problems here revolve around defining scientific, technical, and educational materials to be licensed; defining uses and users of such materials; and the setting of fees. A similar suggestion urges the mandating of compulsory licensing and compulsory arbitration between copyright users and owners, that is, bilateral negotiations that would result in private agreements. Finally, and reflecting a similar proposal made with photocopiers in mind, is the institution of a copyright clearinghouse, through which users could buy "whole batches of information at once." Difficulties involved in a clearinghouse include the possibility that some owners might decide not to join, and antitrust problems over the control of clearinghouse sales of copyright licenses.

The third major thrust of suggestions dealing with copyright and the computer as identified by the Ad Hoc Task Group emphasizes compensation over access. One such proposal is legislate now, study later. The Ad Hoc Task Group prefers a moratorium to this option, as uninformed legislation could freeze nascent information systems into untoward patterns. Other alternative proposals for compensation are based on the setting up of bilateral negotiations between copyright users and owners, or the institution of contractual royalties or setting established standardized fees and requirements, using a computerized accounting system. Finally, there is the establishment of exclusive rights for the copyright owners with no exemptions granted. This is "the opposite end of the spectrum" from the first proposal, and equally fallacious in the opinion of the Ad Hoc Task Group.

Of these proposals, the Ad Hoc Task Group favors the granting of a moratorium on copyright infringement for nonprofit users during a study of computers and copyright. Its members believe that such a moratorium constitutes the most rational basis for arriving at some understanding of an ill-understood subject.

Other observers have focused their suggestions on marketing options that could reduce or obviate the need for copyright. Law Professor Stephen Breyer is one of these commentators. Breyer states that "the case for copyright in the book trade is not a strong one generally and is even weaker for some parts of that trade" (*81*).

Nevertheless, Breyer concedes that, in the absence of copyright, other means might be deemed necessary to assure compensation for "an initial publisher of, say, a text with a long time horizon and large initial expenses"; although he is not at all certain that even this kind of hypothetical situation would require a formal means for sustaining the book publisher's revenue. In any event, Breyer suggests that buyers, "individually or in groups, might contract to buy the book in advance of publication," before copying is possible. Or alternatively, government subsidies could assure high-cost ventures by book publishers. Of these, Breyer favors the former; the facts that 23 states already adopt elementary textbooks at the state level, and that 18 states adopt high school texts in the same fashion indicate that book purchasers could organize without too much difficulty. Conversely, government subsidies always entail the risk of censored information.

Federally subsidized and disseminated information and the corresponding censorship risk are worth further examination. The developing reliance on the "page charge" by publishers of scientific and technical journals would appear to indicate that at least one system of disseminating information—without copyright and through federal subsidies—not only has evolved but has confronted the problems of government censorship as well. The page charge is a fee paid by research sponsors to journal publishers, usually on the basis of how many pages are required to print the research; its purpose is to aid in information distribution by covering publication costs. The practice began overtly in 1930, when the American Physical Society authorized the editors of *The Physical Review* to charge institutions sponsoring research that they printed at a rate of $2 a page to cover costs. Today, page charges range from $10 to $70, and a 1966 survey of 362 journals sponsored by the National Science Foundation showed that 76 of them levied page charges, while 17 more billed for "excess" pages.

It was indicated earlier in this article that few scientific journals rely on subscriptions as a major source of income. The major (and rising) source of income is the page charge. A 1966 survey by the Council of Biology Editors determined that page charges offset from 25% to 100% of the publication costs incurred by the journals they printed (*82*). In 1961 page charges met an average of nearly 36% of total publication costs for 10 journals published by the American Institute of Physics, but in 1971 it was stated that about 80% of the publishing costs in physics were absorbed by the page charge (*83*).

The subscription price remains the other major source of journal income, and there is a direct relationship between it and the page charge. Science journal editors who have experimented with reducing or eliminating page charges have found it necessary to raise subscription rates—unless they also derive considerable revenues from advertising. Higher subscription prices have not served to increase the circulation of information.

When a journal requests a page charge, it usually is the federal government that receives the bill. Page charges are a standard budgetary item in federal grant requests by scientists. Pressure for government-provided page charges began as early as 1947, and a sampling of grant budgets in the National Institutes of Health for

fiscal year 1970 revealed that approximately 85% of the grantees requested publication costs (*84*). Such expenditures accounted for roughly 1.5% of the total awards, or from $5 to $6 million in a budget of $400 million.

In 1961 the Federal Council for Science and Technology officially sanctioned the idea that research is incomplete until published, and it established standards for the budgeting and payment of page charges by federal agencies, research grantees, and government contractors. These standards are followed today and have been adopted throughout the federal bureaucracy. More recently, the question has been raised as to whether a ceiling should be placed on page charges billed to the government; the 1966 National Science Foundation study, conducted by the Biological Communications Project of George Washington University, detected considerable variation in assessment of composition and make-ready costs, and urged that guidelines be set relating level of page charge to production costs (*82*). In 1970 a Task Group on the Economics of Primary Publication of the Committee on Scientific and Technical Communication, National Academy of Sciences, called for a more extensive system of annually updating pertinent page charge information and recommended using the National Science Foundation's Office of Science Information as a monitoring agency (*85*).

Whether or not these proposed modifications of page charge practices are adopted, the current, operative system of federally supported journal publication has the advantage of avoiding both overtones of censorship and copyright restrictions. No central bureau oversees page charges, and thus cannot favor particular journals. Yet, privately operated journals are receiving substantial federal subsidies.

Most of the preceding modifications and alternatives to the traditional copyright principle imply a reduction of its applicability to new informational forms. One suggestion, however, that seems worth further exploration advocates an extension of copyright's applicability. Robert P. Henderson, vice-president of Honeywell Information Systems, urged the Senate Subcommittee on Constitutional Rights to make "personal information" a "property right" (*86*). Such a definition would permit citizens access to all data banks and dossiers, in order to "determine for themselves when, how, and what information is communicated to others." Citizens would have recourse to the courts in the event they disagreed with how their personal information was used.

Henderson's view amounts to a novel interpretation of copyright, but one that nonetheless is in tune with current informational problems of American society. Henderson is saying that what a citizen *does* is "copyrightable" by the citizen who does it, but those who compile records of what that citizen does should not have their works protected by copyright. Because the citizen has copyrighted, in effect, his behavior, he may disseminate records of his behavior as he sees fit.

It is not the point of this article to advocate some new system for encouraging information production and its dissemination, but rather to suggest that modifications of and alternatives to copyright are practical and very likely worthwhile in a knowledgeable society. It is up to politicians to decide which modifications are most

practical, and it is up to academicians to decide which alternatives are most worthwhile.

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