The History of Medical Libraries from 2000 B.C. to 1900 A.D.

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ABSTRACT

Tablets said to date back to 2000 B.C. represent the earliest medical writings so far discovered. The history of the medical library (defined as a place where a collection of medical writings is kept) is traced through ancient and medieval civilizations, and the dependence of advancement or decline on the attitude toward learning and knowledge is demonstrated.

The change in structure of medical libraries that took place around the 1500s with the development of scientific societies is discussed. Medical libraries of Colonial America are described and the history is brought forward to the era of public library collections of medical material in the early 1900s.

THE profession of medicine has been a concern of man since the beginning of time. The physician, the medicine man, the healer, has always been looked upon with great respect through the centuries. The medical library has played an important part in the great advances in medical knowledge. It is the link between the past and present.

The history of the medical library is closely related to the actual history of medicine. In fact, the particular attitude toward medicine at any given time affected the state of the medical library.

Ancient Libraries

Medical collections have dated back to thousands of years before the birth of Christ. The earliest collections have dated back to the ancient civilizations of the Assyrians and the Babylonians. During the existence of these two civilizations, the Mesopotamian Valley was considered one of the most progressive and enlightened areas in the world. Some of the earliest medical records of the world were found in this area. These were clay tablets recovered from the library of King Assurbanipal of Assyria (668–626 B.C.). The library was housed in the palace in the ancient city of Nineveh. The 30,000 fragments of the library are currently preserved in the British Museum. The tablets are said to date from 2000 B.C., but their actual age is not known. Several hundred of the tablets cover medical matters and give details of medical practice; others are on the borderline between medicine and magic arts (1). The library was started by Sargon II (722–705 B.C.) and continued by his son Sennacherib (2). King Assurbanipal, son of Sennacherib, developed it into a great library.

The purpose of Assurbanipal's library was to contain and preserve all material that could be obtained covering the history of the empire and its advances. Under Assurbanipal's personal direction, representatives were sent to all parts of the kingdom and also to foreign lands in order to collect written documents on all subjects.

King Assurbanipal employed a personal staff for his library. The material was well organized and shelved in systematic rows on the wall in earthen jars according to subject. On the walls were placed lists of the works found in each room. Each tablet, in turn, had an identification tag which indicated the jar, shelf, and room in which it belonged. A form of catalog or descriptive bibliography was used in conjunction with the identification tags. Aside from the palace library, religious and pseudo-scientific material was housed in a temple library. This too was under the king.

In 606 B.C. the Medes and Babylonians captured and burned Nineveh. The library, like the rest of the city, was burned into ruins.

Luckily the books could not burn because they were written on clay tablets (3).

Babylonia also collected medical material in its libraries. The sciences were cataloged and classified with extreme care, and the information provided was passed on to be reorganized or revised by the generations which were to follow.

The art of medicine was extremely important in the common life of the people. Babylonians even went so far as to regulate medicine under the law. King Hammurabi's codification of the law included sections concerned with surgery (4).

Since religion was felt to be closely related to science, the temple libraries also collected works on medicine. In both Babylonia and Assyria libraries were controlled and used only by court dignitaries, priests, and persons of the educated class (5).

Since trade relations existed between Mesopotamia and Egypt as early as 3000 B.C., it is probably safe to assume that this cultural exchange also included medical knowledge (6) Some of the Egyptian temples were particularly known as centers of healing and housed collections which could be considered medical libraries. Of all the medical collections, probably the most complete and best organized was the collection of the Temple of Thoth. Here there was a priest who was known as the "Keeper of the Sacred Books" and his female assistant, who bore the title "Lady of Letters, Mistress of the House of Books." Other collections were kept in the "Halls of Rolls" in Heliopolis, where there were long lists of diseases and their cures, and also at the Temple of Hermopolis, which housed six medical works. Librarians responsible for medical books were usually given such titles as "Scribe of the Double House of Life" and "Learned Men of the Magic Library." In addition to the temple libraries and palace libraries there was also growth in private libraries (7).

Many medical papyri have been found during excavations of old ruins, among them the Kahun medical papyrus, which is felt to be the oldest, dating to 1900 B.C.; the Smith papyrus of 1600 B.C., dealing with surgical case reports intended for the surgeon's use; the Ebers papyrus of 1500 B.C. consisting of a collection of recipes intended for the physician's use.

In the libraries individual scrolls were encased in leather or cloth covers and stored in clay jars, sometimes more than one scroll to a jar. The containers were often inlaid with jewels. The actual method of arrangement is not known.

Knowledge flourished in Greece, especially in medicine. The greatest advances were made during this period. The Greeks were quite prolific in their medical writings. The value of books as a medium of communication was increasingly being recognized. Consequently, libraries grew. Hippocrates, the "Father of Medicine," collected a private library. Aristotle had a private collection that included a copy of every known medical work. In addition to public and private libraries there were special libraries, particularly medical libraries. The libraries were usually located in temples.

Medical schools developed, and their libraries flourished. The greatest medical school was the Alexandrian School of Medicine. Together the schools, museums, and libraries supported groups of scientists and scholars so that Alexandria flourished as a center of learning for a considerable time (8). Even though the Alexandrian medical school was one of the first great medical schools, the Asklepion flourished for some six or seven hundred years or from 500 B.C. to later than 100 A.D. It was a combined school and temple, with many buildings; accommodations for teachers, students, officials, and visitors; ceremonial halls and baths; and most important, a library. The library was dedicated to Apollo Maleates and Asklepios, the God of Healing (9).

The collections of rolls were kept in pigeon holes or on shelves arranged according to major divisions of literature. Booklists or catalogs were compiled. Both the library and the librarian were esteemed in the Hellenic society.

The bibliographic scribes of Assurbanipal and Callimachus, the chief librarian of the Alexandrian library, were among the first catalogers (10). Greece employed the classification system of the pinakes, which were tablets that contained the names of authors arranged chronologically in divisions of their particular type of literature. These tablets in turn were kept together. Medicine was one of the pinake divisions.

Other medical schools included the school in Pergamus, which had a library second only to the one at the school in Alexandria, and those

in Cos, Cnidos, Rhodes, and Cyrene, all of which had their own libraries.

Around 47 B.C. the city of Alexandria was completely destroyed and along with it the Alexandrian libraries and their contents.

Rome followed Alexandria as a medical center. At this time the city of Rome had twenty-eight public libraries. But even though libraries were numerous in Rome, it appears that the manuscripts dealing with medicine were not plentiful because the Romans were little concerned with medical literature. Medical education, in the beginning, was taught in private, and the preservation of the literature depended largely on private collections of physicians.

Roman libraries, as a rule, were usually established in connection with the temple or palace. The books were papyrus or parchment rolls, written in columns and then wound around a wooden stick. These rolls were either stored in boxes or chests according to general subject and the language of Greek or Latin (11).

Libraries of the Middle Ages

The period of 500 to 1000 A.D. is considered the Middle Ages. In Europe there was a general decline in learning. This period is appropriately called the "Dark Ages." Although learning was at a standstill in Europe, the Eastern World continued to flourish.

The Byzantine empire lasted more than 1,000 years (395–1453), but its only real contribution to medicine was that it preserved something of the language and the culture of the Greeks (12).

China had no special medical libraries, but medical books were gathered in the general libraries.

The year 432 A.D. saw the flight of the Nestorian culture from Syria to Persia. There, in turn, was established at Gondisapar, a medical school which was the most important medical school of the East. Here Greek medicine was studied. The Arabs eventually captured Persia, and the Greek was translated into Arabic. Scholars again fled, taking with them Greek manuscripts.

With the rise of the Arabic civilization, there was also a rise in learning, for from the tenth to the twelfth century this civilization was looked upon by the scholars of the West as the source of all learning and science. Materials of all ages, in all languages, and on all subjects except religion of other faiths were collected, copied, and translated for the libraries. Works of science, particularly medicine and philosophy, were fairly plentiful. The Arabian libraries seem to have been a more important connecting link between the classical Greek learning and the Renaissance of Western Europe than were the libraries of Constantinople (13).

Medical centers were developed throughout the Islamic world. As early as the ninth century, Salerno was a medical center. After being conquered by the Moslems, it became a center of an active lay medical school. At Cordova, in 970 A.D., a medical school with a library of 225,000 volumes was founded. Another great library was the Royal Library of Bokhara. Similar institutions were developed. At this time there were at least seventy libraries in Spain alone. The "Summa" was a popular work of the time. It was an encyclopedic textbook of medicine written by many authors (14). Early medical schools, such as those at Bologna, Padua, Naples, and Paris, used Arabic textbooks almost entirely (15).

The Arabian civilization achieved its greatest prosperity in Spain under the Ommiade Dynasty (755–1036 A.D), but Arabian names began to disappear from the field of medical literature after the twelfth century (16). Literature and libraries declined after 1100 when the reactionaries had gained control of most of the Eastern Moslem world. Libraries eventually met complete destruction due to civil wars and the lack of interest in learning under certain rulers. Learning still continued, though, in North Africa and Spain for at least two centuries (17).

In the widespread decline of learning in Europe medical knowledge suffered. Physicians in turn became incompetent and could be considered almost charlatans. The condition of medical practice caused the religious orders to begin to take over the responsibility of caring for the sick, and thus began the period of monastic medicine. The monastery of Monte Cassino in Italy, founded in 529 by St. Benedict, was one of the first monasteries to assume the responsibility for nursing the sick.

Important developments in monastic medical libraries began with Cassiodorus, who was the former Minister of Education under Emperor Theodric. In 540, Cassiodorus retired to Squillace, which is located a short distance from

Monte Cassino, and founded a monastery there. He felt it was very important that a Christian should study the medical practice of the past in order to prepare himself for the care of the sick. As a result of his feelings toward medical knowledge, Cassiodorus began to collect for the use of the monks all available medical and philosophical manuscripts both in his monastery and at Monte Cassino. The library which was founded is supposed to have consisted of 30,000 volumes. Eventually Benedictine monasteries were established in other localities, and interest in ancient medicine spread from them to others. By the tenth and eleventh centuries monastic medicine also declined along with other learning. The medical manuscripts which were still being prepared for the use of the monks degenerated to such an extent that little of the learning of the Greco-Roman period was still being conveyed (18).

The works of this period are important in that they kept alive, to some extent, the heritage of the Greek culture, but little original knowledge developed. It was not until the tenth, eleventh, and twelfth centuries that the Arabs reintroduced classical culture into Western Europe.

The monastic library consisted usually of two rooms: an outer and an inner library. The outer library contained books of general importance for monks, such as manuals of secular learning, treatises on the seven liberal arts, and works of classical authors. The inner library was comprised of more abstruse works which treated of that higher learning which was attained after the classics were transcended (19).

At the close of the middle ages there was a decline of monasticism but a revival in learning. With this new growth of knowledge there developed a prosperous and influential class of citizens who contributed to the development of secular culture outside the church. With the new knowledge came a rise of a new form of education, the university. Medicine became a part of the curricula of the universities. At the beginning of the thirteenth century, medicine was being taught in three universities: Montepellier, Paris (founded in 1369), and Salerno (founded around the ninth century by the Arabs).

Studying medicine consisted of memorizing and copying works from the masters of medicine such as Hippocrates and Galen. In order to supply these works, bookstores were established (20). Also, as soon as medical teaching began, special medical libraries began to be created. Their growth, however, was very slow. Two of the important medical libraries were the one founded in 1287 at the University of Florence and the one established in 1395 at the University of Paris.

Between 1370 and 1540 came the most important development in medical publishing: almost simultaneously in three countries, important medical texts were translated or abridged and printed in the vernacular (21).

Medical Societies and Private Libraries

With the invention of printing there was a spread of knowledge and experimentation, and men began to meet in groups to exchange ideas, to perform experiments, and to share expenses for the establishment of laboratories and libraries. During the fifteenth to the nineteenth centuries medical societies developed extensively. These societies varied in type. There were international organizations, national bodies, local groups, and smaller gatherings within institutions. Medical societies greatly influenced medical literature by providing opportunity for discussion and also by issuing publications.

Italy led in the establishment of societies. The earliest science society, known as Academia Secretorum Naturae, was developed there in 1560. It was short-lived but did exist long enough to organize a publication, *Gesta Lynceorum*. Also the first scientific academy, Accademia de Cimento, was established in Florence. It existed from 1657–1667 (22).

Quite often, examining bodies and colleges founded for organization and administration of medical practice are overlooked. Some of them functioned as did other societies in holding meetings, providing libraries and museums, and sponsoring lectures and publications. These institutions and guilds existed in many towns, some even before the first society. The College of Physicians at London (1518) is one example.

Book circulation clubs also played a part in the development of many medical societies. They developed because library facilities were poor until the establishment of various infirmaries and the formation of medical schools brought about improvement. The book clubs consisted of a few medical men who organized

in order to purchase and circulate medical books among themselves. Such clubs date from 1770. Several attempts were made in the United States during the eighteenth century to form medical societies, generally to no avail. The oldest existing U.S. society is the Medical Society of New Jersey (1776). The greatest activity in developing societies was during the nineteenth and twentieth centuries. The nineteenth century saw the establishment of various British medical societies, many of which are still active. Several Canadian societies were founded in the eighteenth century, but many were short-lived.

The twentieth century saw the establishment of the World Medical Association in 1946 at a meeting in London. Twenty-nine countries participated. Although medical societies have continued to increase, there has been a steady decline in society libraries. But this century is seeing a revival of the recognition of society libraries as being of great value to physicians. Medical society libraries serve not only their own members; they render invaluable aid to smaller libraries through interlibrary loan.

Physicians since early times have been among the learned classes of society and have developed private libraries. Some of the books from these private libraries eventually come on the market and are listed in sales catalogs. Other such collections come to be housed in libraries of institutions. The collections of the early centuries really represented hobbies of physicians rather than their practical interests. The doctor's private collection consisted of treasures of the past. It was not until the seventeenth century that extensive museums and libraries became recognized possessions of wealthy intellectuals. Too often, though, on the death of a collector, his library was dispersed along with his belongings and often lost altogether.

Medical Libraries in the U.S.

The colonization of the United States dates back to the 1600s, and by 1776 the colonies were an independent nation. One of the earliest medical collections in the United States was owned by John Winthrop, the son of the first Governor of the Massachusetts Bay Colony. The collection consisted of 1,000 scientific and medical books, many of which went first to the New York Hospital (in 1812) and eventually to the New York Academy of Medicine (23). The oldest medical library, though, is the Pennsylvania Hospital library (1763). Its first catalog was published in 1790. In 1805 the next catalog was published. By 1837 the collection had grown to 7,300 volumes, and in 1856 it contained more than 10,000 volumes. For a long time the apothecary served as the librarian (24).

The next library was that of the College of Physicians of Philadelphia (1787). By 1836, due to a slow growth rate because of inadequate quarters, the collection consisted of only 291 volumes, though there were quite a few unbound pamphlets. The library committee recommended that the librarian be present one hour a month to lend books. In 1852 the library moved to a small building on the grounds of the Pennsylvania Hospital. There it was arranged conveniently, a catalog was made, and 350 volumes were added. In 1863 the library moved to its present home. Not until 1866 was the college given funds to hire a librarian who would keep the library open daily.

Before 1800, five other medical libraries were founded, two of them in Philadelphia. By the Civil War there were twenty-three medical libraries of various sizes. Libraries were founded in medical colleges and societies in practically every state by 1850.

The greatest stimulus to the growth of hospital medical libraries was given by the AMA's Council on Medical Education, created in 1940. The Council's first efforts were directed toward the improvement of existing medical schools by the establishment of standards enforced by inspections and by recognition of those schools considered acceptable. Internships were encouraged. Physicians thus tended to use the libraries that were located in the hospitals. Between 1898 and 1958 the number of medical libraries grew from 120 to 506. The average size of the collections increased from 5,498 volumes to 24,918 volumes in 1956 (24). A hospital collection, though, usually is a small working collection consisting of the latest editions of textbooks and a selection of journals.

Medical collections were not confined to hospitals or to special medical libraries. Prior to 1879 physicians felt obligated to keep extensive libraries in their offices and homes. In 1898 it was stated in the minutes of the first meeting of the Association of Medical Li-

brarians (now the Medical Library Association) that the object of the Association would be to encourage the improvement and increase of public medical libraries. The following resolution was passed by the AMA in general session in 1898:

> WHEREAS, the establishment, organization, and filling of public medical libraries is a means of vast and increasing importance for both the preservation of medical literature, and for the progress of medical science, and,
> WHEREAS, there are at present but few such libraries in the United States, and of these the great majority are in a sad state of imperfection and efficiency; and,
> WHEREAS, most valuable literature is wasted because of the non-existence or imperfection of such libraries; it is therefore,
> RESOLVED, that the AMA unanimously approves of any ethical and legitimate methods of encouraging the organization, perfection and support of public medical libraries in all cities, towns and villages of the U.S. and earnestly urges the members of the association to aid in the formation and organization of such libraries (25).

In July of the same year the following resolution, stating the advantages to a public library if medical publications were added, was passed by the ALA's executive committee:

> WHEREAS, the public library should be a means of stimulating all neighborhood intellectual and scientific progress, and of combining the helpful forces, ethical, mental, and sanitary, furthering the welfare of the entire country; it is therefore,
> RESOLVED, that in the opinion of the ALA it is both possible and advisable in the interest of the library, the profession and the community that public libraries should have medical departments, and that physicians and medical societies be cordially invited to cooperate with the librarians and trustees of public libraries in establishing and maintaining such medical departments (25).

Boston was the first city to begin adding medical books to its public library. By 1898 there were in the public library 28,604 volumes, as compared to the 20,285 volumes of the Boston Medical Library. Many other cities soon followed this lead.

The decline of medical public library collections became evident in 1920. The arguments against public medical collections, as presented by Dr. George E. Wire, who was both a physician and librarian, were that they were costly to maintain and that it was unjust to acquire medical publications when a balanced public library collection required coverage of so many subjects. Furthermore, Dr. Wire maintained that a medical librarian had to be suitably trained in order that the technical processes and cataloging of material could be properly performed. Physicians were little concerned. Indeed they were almost unaware of the existence of these public collections. Today public libraries concentrate on the acquiring only of general medical publications which are aimed at the informational needs of the lay public (25).

It is with this background that medical libraries have moved into the twentieth century where they are enjoying the benefits of computer-assisted library management and computer-assisted indexing and abstracting services and are forming organized networks in the interest of still more efficient service.

Conclusion

The age-old task of storing and preserving material is still with us, but the twentieth century saw new trends in the medical library, one being the trend toward national information systems. The librarian and the administration must establish what their library is trying to accomplish and then try to create an information network that will provide qualitative as well as quantitative information that can be used to help improve the network. Another trend is toward as comprehensive a coverage of the world's literature as is possible through the use of indexing and abstracting services which are available to American libraries and personnel. Examples are *Index Medicus* and *Excerpta Medica* (26).

Medicine is an ever expanding profession and medical literature will also expand. The medical library is a growing, vibrant institution.

REFERENCES

1. Postell, William Dosite. The Development of Medical Literature. New Orleans, Louisiana State University, School of Medicine, 1943. 136 p.
2. Postell, William Dosite. An Introduction to Medical Bibliography. New Orleans, 1951. 101 p.
3. Burke, Redmond A. Culture and Communication through the Ages. Chicago, DePaul University, 1953. 188 p.

4. JOHNSON, ELMER D. A History of Libraries in the Western World. New York, Scarecrow Press, 1965. 418 p.
5. BURKE, REDMOND A. Culture and Communication thru the Ages. Chicago, DePaul University, 1953. 188 p.
6. POSTELL, WILLIAM DOSITE. The Development of Medical Literature. New Orleans, Louisiana State University, School of Medicine, 1943. 136 p.
7. JOHNSON, ELMER D. A History of Libraries in the Western World. New York, Scarecrow Press, 1965. 418 p.
8. THORNTON, JOHN L. Medical Books, Libraries, and Collectors: A Study of Bibliography and the Book Trade in Relation to Medical Sciences. 2d ed. London, Deutsch, 1966. 445 p.
9. JOHNSON, ELMER D. A History of Libraries in the Western World. New York, Scarecrow Press, 1965. 418 p.
10. PARSONS, EDWARD ALEXANDER. The Alexandrian Library: Glory of the Hellenic World. New York, Elsevier Press, 1952. 468 p.
11. BURKE, REDMOND A. Culture and Communication thru the Ages. Chicago, DePaul University, 1953. 188 p.
12. POSTELL, WILLIAM DOSITE. An Introduction to Medical Bibliography. New Orleans, 1951. 101 p.
13. JOHNSON, ELMER D. A History of Libraries in the Western World. New York, Scarecrow Press, 1965. 418 p.
14. POSTELL, WILLIAM DOSITE. An Introduction to Medical Bibliography. New Orleans, 1951. 101 p.
15. JOHNSON, ELMER D. A History of Libraries in the Western World. New York, Scarecrow Press, 1965. 418 p.
16. POSTELL, WILLIAM DOSITE. The Development of Medical Literature. New Orleans, Louisiana State University, School of Medicine, 1943, 136 p.
17. JOHNSON, ELMER D. A History of Libraries in the Western World. New York, Scarecrow Press, 1965. 418 p.
18. POSTELL, WILLIAM DOSITE. The Development of Medical Literature. New Orleans, Louisiana State University, School of Medicine, 1943. 136 p.
19. BURKE, REDMOND A. Culture and Communication thru the Ages. Chicago, DePaul University, 1953. 188 p.
20. KEYS, THOMAS E. Applied Medical Library Practice. Springfield, Ill., Thomas, 1958. 495 p.
21. POSTELL, WILLIAM DOSITE. An Introduction to Medical Bibliography. New Orleans, 1951. 101 p.
22. THORNTON, JOHN L. Medical Books, Libraries, and Collectors: A Study of Bibliography and the Book Trade in Relation to Medical Sciences. 2d ed. London, Deutsch, 1966. 445 p.
23. MEDICAL LIBRARY ASSOCIATION, Handbook of Medical Library Practice. 2d ed. Chicago, American Library Association, 1956. 601 p.
24. THORNTON, JOHN L. Medical Books, Libraries, and Collectors: A Study of Bibliography and the Book Trade in Relation to Medical Sciences. 2d ed. London, Deutsch, 1966. 445 p.
25. WANNARKA, MARJORIE. Medical collections in public libraries of U.S.: a brief historical study. Bull. Med. Libr. Assoc. 56: 1–14, Jan. 1968.
26. CHESHIER, ROBERT G. Medical librarianship: a changing visage. Chicago Medical School Quarterly. 26: 98–100, Summer 1966.