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Spatial Growth in the Harvard Library, 1638-1947

THE foreword in Volume I, Number 1, of the HARVARD LIBRARY BULLETIN listed as the fourth type of article that the BULLETIN would include 'discussion of problems of university libraries in general — problems faced by any university library — and considered from a theoretical or philosophical point of view.' As the fifth type of article, it stated that there would be 'discussions of university library problems as applied to the Harvard University Library.' The article on 'Spatial Growth in University Libraries' in the second number of the BULLETIN, Spring 1947, was the first of the theoretical discussions. This article will discuss the same problem as it is applied to the Harvard Library, and falls, therefore, into the fifth category. It will be followed in a later number by a third article on spatial growth, which will discuss possible future developments on a theoretical level, as far as the libraries of the country are concerned, with a somewhat more concrete approach from the Harvard point of view.

Following the policy adopted in the earlier article, this one will be confined to the consideration of growth in space requirements. It will reserve for later articles the problem of growth in the library budget as a whole or in the book appropriations, a part of the budget which has so much to do in the long run with spatial growth. It will go further, however, than the first article in discussing solutions to the space problem, at least as they have been applied to the Harvard situation in recent years; and the third article will consider what may be done in the years to come at Harvard and elsewhere.

This article will emphasize the problems of spatial growth of the Harvard University Library during the past ten years, that is since 1 July 1937, but it will deal first with four closely related matters, as follows:

1. A discussion of the difficulty of counting the contents of a library in a way that makes the resulting statistics of value or of use on a comparative basis.
2. The rules now used in counting the size of the Harvard Library.

3. A record of the growth of the collections of the Library, and its various component parts, from the time of the bequest of John Harvard in 1638 up to the present.

4. A summary of the new space that was made available for the Library from the time of the completion of the Harry Elkins Widener Memorial Building thirty-two years ago until 1 July 1937.

The article on Spatial Growth in the Spring 1947 BULLETIN showed that, while in most libraries the books do not occupy as much space as the readers, they are an important factor in spatial requirements. It also included some discussion of the question of how much space a given number of books should occupy. It did not, however, consider in detail the question as to how the contents of a library collection may be computed. This omission was not due to the lack of importance of this phase of the subject, but to the fact that a full discussion of it would make an article in itself and satisfactory data for Harvard and other libraries are not now available. A statement will be made here, however, about the counting methods now used at Harvard, and some comments on the problem at earlier periods will be noted. As an introduction to the present situation, a quotation from the Report of the Director and Librarian for 1938 follows:

Each year the Director includes in an Appendix to his Report statistics showing the number of volumes and pamphlets in the various libraries connected with the University. If this count recorded the number of bound volumes only, it would not be a complicated matter; and with due patience on the part of the compilers, a reasonably accurate figure could be reached without serious difficulty. But libraries, and particularly research libraries such as those maintained by this institution, include in addition to bound volumes tremendous quantities of unbound material: pamphlets, reports, reprints, offprints, trade catalogues, charts, maps, etc., etc. Many of these are more valuable to students than bound volumes; and if they are catalogued, the cataloguing costs may be greater. At first thought it would appear that a separate count of pamphlets would simplify matters; and that if pamphlets were counted only when they were catalogued fully, we could reach a satisfactory conclusion. Unfortunately, the problem is more complicated than this. In the first place, cataloguing practice varies considerably. Even if it were uniform, when does a pamphlet cease to be a pamphlet and become a book? Some say when it has at least fifty pages, some say a hundred, others when it is bound in stiff covers, whatever the size. With nearly eighty different organizations connected with the University Library, each confronted with different conditions, different types of collections and different cataloguing arrangements, it has not yet proved possible to find a uniform

method of counting. Efforts are being made, however, to re-count uniformly the various collections as suitable opportunities arise, and it is hoped that in years to come a more satisfactory report can be made than is now possible. In the meantime, the statistical table — Growth of the University Library — is accompanied by notes indicating some of the unusual situations, but at best it must be realized that it is inaccurate.

In connection with the problem of determining the size of the Library, it should be recognized that one of the uses made of the report is comparison with other university libraries. The Harvard count is not consistent in its different libraries, and taken as a whole differs greatly from methods used elsewhere. Any changes made in method will be such as to make comparisons with other libraries easier. In the meantime, it should be understood (1) that the usefulness, not the size, of the collections is of first importance, and (2) that the Harvard collections are more specialized than those of most other libraries and include a larger percentage of ephemeral and pamphlet material which is difficult to count satisfactorily.

Some of the complications that arose in connection with the count of the Harvard Libraries in earlier years will be described later, and will show that at Harvard at least the recording of the size of the Library has not been an exact science. However, in 1917 new rules and regulations were adopted that made the count thereafter somewhat more accurate and provided a more logical basis for it. These were prepared by Mr T. Franklin Currier, the Assistant Librarian in charge of Cataloguing. They are given here in full:

Rules for Count of the Harvard Library

1. The total statistics of size of the Library, when given for general purposes and for comparison with other libraries, should combine the count of volumes and pamphlets in one figure stated as so many 'volumes and pamphlets.'
2. A separate record shall be kept for each class of the Library's shelf classification, this separate record to be, as a matter of interest, itemized by volumes and pamphlets.
3. A pamphlet shall, in general, be defined as a small piece of printed matter, ordinarily containing eight or more pages, not part of a serial publication and not originally intended to be separately bound.
4. Pamphlets separately bound or covered shall, for the purposes of section 2 and with certain exceptions, be counted as volumes.
5. A collection of several pamphlets bound together in one volume shall be counted as so many pamphlets and not as one volume.
6. The number of volumes in a set or continued series shall be the number of volumes in which it is bound, whether each bound volume contains one or several 'bibliographical' volumes or parts.
7. When continued publications are kept on the shelves without binding,

they will, if thin, be tied in bundles, and each bundle shall count as one volume.

8. The item 'serials,' though it may appear in the figures for accessions, shall not appear in the total count of the Library. When a serial is received currently, the first number placed on the shelves shall count as one volume; later numbers will not appear in the shelf statistics until the volumes (or bundles) of which they form a part are counted.

9. Broadsides, single sheets, maps, photographs, prints, sheet music, unimportant advertising matter, programs, time-tables, tickets and similar publications will not be included as individual pieces in the count of volumes and pamphlets, though, when volumes and scrap-books are made up of such material, the resulting volumes shall be added to the volume count. They may be separately stated with as much or as little detail as is thought advisable.

10. Cuttings from newspapers and periodicals shall be treated by the provisions of Rule 9, but reprints from scientific journals will be counted as pamphlets.

11. The basis of the official count of volumes in the Library shall be the shelf-list count, as this is presumably corrected periodically when the shelves are read.

12. The basis of the official count of pamphlets in the Library shall be the recount of 1917 plus the annual permanent accessions as recorded by the forwarding clerk. To facilitate recounts at long periods, the number of pamphlets contained in each pamphlet volume added shall be recorded in a column set aside for that purpose in the shelf-lists.

13. By exception, the count of the EducR collection (catalogues and reports of schools and colleges) has been made by piece, not by bundle or volume, and the total added to the number of pamphlets.

In recounting the pamphlets, the following rules will be followed:

I. For general definition of pamphlet see previous memorandum.

II. Tickets, single sheets, unimportant advertising matter, programs, etc., need not be counted.

III. In order that the work may be done expeditiously, it will not be possible to lay down an exact rule as to how many pages will entitle a leaflet to be called a pamphlet. In general, pamphlets of less than eight pages should not be counted, although there will be many exceptions to the rule.

IV. Cuttings from periodical publications should not be counted as pamphlets. A volume of cuttings bound together will be counted as one volume.

V. Reprints from magazines will, in general, be counted as pamphlets.

VI. Government documents should ordinarily be counted if over eight pages although where a series of government documents is found bound together, it may be considered desirable to count them as one volume.

VII. In looking over a pamphlet volume or pamphlet box, when it is noticed that several parts of a continued publication are included, these should be counted as one, although this count is manifestly inaccurate.

These rules have been in use from 1917 up to the present time in the Harvard College Library, and, theoretically at least, in the other parts

of the University Library. At three-year intervals up to 1939, an actual count was made from the shelf-list of the main Library. War conditions made it unwise to go to the trouble and expense of making the count in 1942 and 1945. In January 1946, an inventory of the collection, comparing the books as they stood on the shelves with the shelf-list, was begun. It is hoped that this will be completed, as far as checking the shelves is concerned, by December 1947, and that the final checking will be completed sometime during the first six months of 1948.¹ After that, with the shelf-list in reasonably accurate condition, a new count will be made, the results of which it is hoped will not differ greatly from those expected.

HARVARD UNIVERSITY LIBRARY STATISTICS

In the three tables on the following pages, there are recorded statistics of the size of the Harvard Library from 1638 to the present year, or through 30 June 1947, to be exact. Three tables instead of one are used for reasons that will be obvious as they are examined.

Table I gives the number of volumes in the Harvard College Library at various times up to and including 1830. The figures are derived from various sources, all of which are noted and none of which can be called official.

TABLE I

NUMBER OF VOLUMES IN THE HARVARD COLLEGE LIBRARY AT VARIOUS TIMES UP TO 1830

1638 — over 400 volumes	John Harvard's library alone amounted to over 400 volumes; but the Library already had some books (S. E. Morison, <i>The Founding of Harvard College</i> , 1935, pp. 263-267).
1655 — 900 volumes (est.)	Morison, <i>Founding</i> , p. 268. (In <i>Harvard College in the Seventeenth Century</i> , 1936, I, 285, Morison is less definite: 'several hundred — or possibly a little over a thousand volumes.'))
1723 — 3,516 volumes	Based on the printed catalogue of 1723 (Morison, <i>Seventeenth Century</i> , I, 295).
1764 (before fire) — over 5,000 volumes	<i>Massachusetts Gazette</i> , 2 February 1764.

¹ See pp. 130-131 below for a discussion of this inventory.

1764 (after fire) — 404 volumes	List in the University Archives.
1766 — 4,350 (est.)	Ezra Stiles, <i>Extracts from the Itineraries and Other Miscellanies</i> (1916), p. 206.
1781 (June) — 10,059 volumes	C. E. Walton, <i>The Three-Hundredth Anniversary of the Harvard College Library</i> (1939), p. 24.
1789 — 11,465 volumes	From the papers of Loammi Baldwin (University Archives).
1790 — 13,000 volumes	A. C. Potter, <i>The Library of Harvard University</i> (3rd edition, 1915), p. 17.
1812 — about 22,000 volumes	Walton, <i>Three-Hundredth Anniversary</i> , p. 27.
1830 — 30,000 volumes	Potter, <i>Library</i> , p. 17. Walton, <i>Three-Hundredth Anniversary</i> , p. 31, says 'nearly 35,000.'

Table II records the number of volumes in the Harvard University Library each decade beginning with 1837 and running through 1917. The first of its four columns gives the date for which figures are reported. The second records the number of volumes in the main collection of the Library. (This library was called the public library of the University in the early days. The Harvard College Library collection in the Widener building is its direct descendant.) The third column reports the departmental and special libraries throughout the University, and the fourth the total of the two groups.

TABLE II
NUMBER OF BOOKS IN THE HARVARD UNIVERSITY LIBRARY
EACH DECADE FROM 1837 TO 1917

	<i>Main Collection</i>	<i>Other Libraries</i>	<i>Total</i>
1837	about 38,000	about 5,700	about 43,700
1847	53,000	16,200	69,200
1857	74,000	25,700	99,700
1867	115,500	44,500	160,000
1877	163,000	59,000	222,000
1887	248,600	77,100	325,700
1897	355,600	150,000	505,600
1907	478,600	290,200	768,800
1917	713,500	528,661	1,242,161

Note 1. The above figures are taken from the *Harvard University Catalogue* (the first issue being used in the years when two were published) for the year

following the date given. That is, the 1837 figures are those found in the *Catalogue* for 1837-38.

Note 2. The figures exclude the number of volumes in the 'students' libraries,' although those volumes were recorded in the total in the *Catalogues* annually from 1834 through 1873, and varied from 4,500 in the first years to 16,000 at the end of the period. (The 'students' libraries' were those belonging to the student societies, many of which were literary in character in this period.)²

Note 3. None of the figures record pamphlets. A statement in this connection will be found later in this article.

Note 4. The figure for 'other libraries' includes the departmental libraries of the Divinity School, the Law School, and the Medical School from the beginning. To those were added in 1867 the Engineering Library, the Botanical Library, the Library of the Museum of Comparative Zoology, and an Astronomical Library. In 1877 the Library of the Bussey Institute was included, and in 1897 those for the Peabody Museum, the Arnold Arboretum, and the Fogg Museum. Also, in 1897 there were included for the first time in this table 'laboratory and classroom libraries,' which administratively were considered part of the College Library. In 1897, there were seven of the laboratory and sixteen of the classroom libraries, totalling 15,200 volumes. In 1907, the Library of the Dental School was included for the first time, and the number of laboratory and classroom libraries had increased to twenty-eight, containing 46,900 volumes. In 1917, the Blue Hill Observatory was first recorded, and the number of 'special libraries' (as they have been called since 1914) had increased to forty-one in number and contained 78,617 volumes.

Tables I and II refer to the number of volumes in the Library, and do not include pamphlets. Year by year, beginning with 1878-79, the *Catalogue* gave the count of bound volumes and then stated that 'the collection of pamphlets and maps in the College Library is very large and is estimated to be equal in number to the number of bound volumes. The departmental libraries have also considerable numbers of pamphlet monographs on subjects connected with their specialties and these are not included in the count of volumes.'

The question of pamphlets, as has already been indicated, is a difficult one. It will not be possible to include a full discussion on this subject here, but the following comment is pertinent. In Justin Winsor's first annual report, that for the academic year 1877-78, he estimated that the main collection of the College Library included 175,000 volumes and 170,000 pamphlets. He estimated that the other libraries in the University, taken together, had something over 7,000 pamphlets. In his

² See R. W. Lovett, 'The Undergraduate and the Harvard Library, 1877-1937,' *HARVARD LIBRARY BULLETIN*, I (1947), 222.

last annual report, that for the year 1896-97, he recorded 355,607 volumes in the main collection in Gore Hall, and estimated that there were 351,928 pamphlets in the building. A recount of the Library was made in 1901, and the results showed that, instead of nearly 412,000 volumes and well over 350,000 pamphlets, there were only 387,097 volumes and 250,000 pamphlets.³ Sixteen years later, in 1917, after another recount, some 35,000 volumes were subtracted from the total, and the number of pamphlets was reduced by considerably more than 200,000 from the figure which had been used, making figures for 30 June 1917 of 713,500 volumes and 252,000 pamphlets for the main collection.

Table III, which follows, gives a count of the Library every ten years from 1917 to 1947, made according to the rules quoted earlier in this statement. It will be seen that the figures vary as far as the year 1917 is concerned from those in Table II, where the 1917 count shows volumes only. These figures come from the annual reports of the Director and Librarian, and are for June 30th of each year.

TABLE III
NUMBER OF BOOKS AND PAMPHLETS IN THE HARVARD UNIVERSITY LIBRARY
EACH DECADE FROM 1917 TO 1947

	<i>Main Collection</i>	<i>Special Libraries</i>	<i>Dept'l Libraries</i>	<i>House Libraries</i>	<i>Total</i>
1917	965,500	102,307	736,000		1,803,000
1927	1,344,300	141,500	1,136,600		2,622,400
1937	1,781,700	246,610	1,764,284	70,456	3,863,050
1947	2,160,496	526,675	2,198,077	83,071	4,968,319

Note 1. In 1917, 41 special and 11 departmental libraries were included; in 1927, 41 special libraries and 16 departmental libraries; in 1937, 51 special and 17 departmental libraries; and in 1947, 58 special and 17 departmental libraries. The House Libraries were opened in 1930-31 and are recorded in this table for the first time in 1937.

Note 2. The figures for special and departmental libraries are not comparable throughout the period because the following libraries have been shifted from the special to the departmental library group during the period under consideration: School of Education; Mining and Metallurgy and Sanitary Engineering, which were added to the Engineering School Library in the thirties; Architecture; Landscape Architecture and Regional Planning; Forestry; and Business

³ A reduction of this kind in the total figures reported is not unusual in university libraries when the record is taken from an actual count of the material on the shelves, following a considerable period of computations based on the statistics of additions to the collections.

School. In addition to these changes, the Chinese-Japanese Library was formed during the period, and was first counted as a special library, but is now considered a departmental library; the Institute of Geographical Exploration Library was organized; the Medical and Dental School Libraries were consolidated.

Note 3. Recounts have been made in a number of the departmental and special libraries, which have made great changes in the totals. For instance, in 1938 the Astronomical Observatory Library, in spite of the fact that it added 573 volumes and pamphlets during the year, reported 28,662 volumes and pamphlets instead of the 70,077 recorded the previous year. The count of the main collection was largely reduced by omitting material still in process.

Note 4. The number of volumes and pamphlets recorded in the special libraries has been greatly increased by the organization in 1938 and the rapid growth, much of it by transfer from the Widener building, of the Library of the Graduate School of Public Administration in Littauer Center. This library, together with the seminar libraries in Littauer, now numbers 169,210 volumes and pamphlets.

Note 5. The changes and discrepancies and irregularities noted in the foregoing paragraphs do not affect the fact that considerably more than half of each of the collections of which the Library is made up has been accumulated during the past thirty years. The main collection has much more than doubled. The special libraries have more than quintupled. The departmental libraries are almost three times the size they were thirty years ago; and the House Libraries have come into existence for the first time. The Library as a whole shows an increase of over 175 per cent in expanding from 1,803,000 to 4,968,319 volumes and pamphlets.

GROWTH IN FACILITIES, 1917-1937

This period of twenty years was one of very great growth for the Library. During this time, as was shown in Table III above, the collections increased from 1,803,000 volumes and pamphlets to 3,863,050. This is an average increase of 103,000 volumes a year. By 1934, or seventeen years after the beginning of this period, the collection had almost doubled: from 1,803,000 to 3,602,000. This was an increase at the rate of approximately four per cent annually, compounding as it went along. That is, each year there was on the average an increase of four per cent of the total at the end of the previous year. During the same period, the number of students in the University increased from 5,656 to 8,263, and the demands on the Library probably increased even more proportionately, although this would be difficult to show by statistics.

How was the space situation handled during this period of great growth in the collections and the number of students and faculty?

Fortunately, at the beginning of the period, the main collection was well off as far as space was concerned: the Widener Library building had been completed just two years earlier. It was then thought that it would care for the needs of the main library for fifty years to come. It did care for the growth in a very satisfactory manner for the twenty years under consideration. At the beginning of the twenty years, the main collection contained 965,500 volumes and pamphlets. By 1937, it had grown to 1,781,700. It had not doubled in size in the twenty years, but it had grown to such an extent as to fill the book stacks practically to capacity. During the period, it proved necessary, in order to provide more adequate facilities for the Treasure Room, to move an undergraduate reserve book reading room from the basement of Widener into Boylston Hall. But the greatest growth of the Library had come in the special, the departmental, and the House libraries. As shown above, this last-named group had its origin in the early thirties, and by 1937 contained over 70,000 volumes. The special and departmental libraries increased from 838,307 volumes and pamphlets to 2,010,894, not only doubling but increasing by almost two and a half times. Since the space available for these libraries at the beginning of the period was not as adequate as that for the main collection, a very great increase in the physical facilities became necessary. If the House Libraries are counted in with the special and departmental libraries, a total of 2,081,350 volumes and pamphlets is reached at the end of the period. Of that number, approximately 1,017,000 volumes were occupying space that was completely new construction during the period, or represented expensive and extensive enlargement or reassignment of older space. That is, most of the growth was cared for by new space.

The most important units of new space made available to special, departmental, and House libraries between 1917 and 1937 were as follows.

The Farlow Reference Library of Cryptogamic Botany, the original collection of which was bequeathed to the University in 1919, was housed in the old Divinity School Library building in 1923 — 37,000 cubic feet of space available for library purposes.

The new building of the Fogg Museum was completed in 1925, and provided space for a special library in the Fine Arts which occupies 117,500 cubic feet of space.

The Baker Library, which houses the Library of the Graduate School of Business Administration, was completed in 1927, and includes 1,100,000 cubic feet of space for library purposes.

The Converse Memorial Laboratory for Chemistry was completed in 1928. In it, on the first floor, is the Gould Memorial Room housing the Chemistry Library, which occupies over 38,000 cubic feet of space.

The large addition to Langdell Hall was completed in 1929, with most of the new space devoted to the Library. Austin and Langdell Halls together now have 1,357,000 cubic feet for library use.

In the same year, 1929, the library facilities in the Union were extended to a large room on the north side of the second floor to care for the Freshman History Library where many of the reserve books for History I have since been kept.

Also in 1929 the Harvard-Yenching Institute was organized. It established a Chinese-Japanese Library with quarters in Boylston Hall. This Library, in less than twenty years of existence, has grown so that it now contains approximately 200,000 volumes.

In 1930 the large room on the ground floor at the west side of Boylston Hall was made into a reading room for the beginning courses in History, Government, and Economics, taking the place of the space formerly used for this purpose in the basement of the Widener building. The space occupied by the Chinese-Japanese Library and this History, Government, and Economics Reading Room in Boylston Hall comes to nearly 175,000 cubic feet.

In 1913 the University completed the Biological Laboratories building, on the first floor of which is the Biological Laboratories Library, in which are combined the older Botanical, Physiological, Zoological, and Entomological Libraries. This collection occupies 24,000 cubic feet of space.

In the same year the Research Laboratory of Physics (now Lyman Laboratory) was completed, and housed the Physics Research Library with 14,000 cubic feet devoted to this purpose.

Also in this year the Institute of Geographical Exploration was completed, and housed a library in that field in a space of 69,000 cubic feet.

During 1930-31 the seven Houses were completed and opened. Each of them devotes space to a House Library, space that had not been available for library purposes up to that time, although some of the buildings date back to an earlier period. The cubage for the seven buildings, as far as library facilities are concerned, comes to just over 270,000 cubic feet.

The situation, then, for the period, 1917-1937, may be summarized as follows. In 1917, the main collection of the Library, with 965,500

volumes and pamphlets, was housed very comfortably in a new building which it was hoped would be adequate for fifty years to come. By 1937 this collection had reached 1,781,700 volumes and pamphlets, and it was estimated that there was still room for some three years' growth in the Widener building. The other libraries of the University in 1917 totaled something over 838,000 volumes and pamphlets, with libraries of 2000 or more in twenty-two different buildings. By 1937, the number of volumes and pamphlets in these outlying libraries had increased to 2,080,000, and there were collections of 2000 or more in thirty-seven different buildings; they occupied nearly 5,000,000 cubic feet of space, of which a large percentage was completely new during this period.

GROWTH IN FACILITIES, 1937-1947

So much for the years 1917 to 1937. What about the ten years that follow and bring the record down to the present time? Some idea of the problem faced by a university library growing at the rate of over 100,000 volumes and pamphlets a year has been made available by the summary of what happened in the past. The present writer came to Harvard 1 September 1937, and was almost immediately asked by the President to consider the question of the amount of space needed for the Library in the future. At that time, there was in the Widener building, as already indicated, space for only about three years' growth. However, Mr Lucius N. Littauer had recently given to the University money for the construction of a building for a Graduate School of Public Administration, and it was known that there would be library space available there for extensive transfer of material from Widener. There was no tremendous pressure for space elsewhere throughout the University Library, by virtue of the large increase in facilities during the preceding twenty years, as recorded above, although it was evident that there would be a shortage in the not distant future in several of the libraries. With time consequently available for a detailed study of the situation, a report was presented to the administration of the University in the spring of 1940. This report was summarized in the annual report of the Director and the Librarian for 1939-40 as follows:

In recent reports emphasis has been placed on the space problem. During the past year it has been studied carefully for the College Library and for the University Library as a whole. The latter, it should be remembered, has more than seventy-five administrative units. Of these at least twenty suffer from space limitations at this time, or will within ten years. At present when pressure

becomes too great, the less-used books from many of them are sent to the Widener Memorial building for storage. But available shelf room in Widener has practically come to an end. Congestion there is already interfering with the service and damaging the books. The problem of what to do must be faced. If the precedents established elsewhere were followed, plans would be made for a new central library building for the University. This building, in order to provide adequately for the College Library and such other departments of the University Library as might be combined with it, should contain 10,000,000 cubic feet, or should be so constructed that this amount of space could be made available in the not distant future. It would probably cost \$10,000,000. There are three serious objections to adopting this solution:

- (1) It would mean giving up the present building which is only twenty-five years old and which cost several million dollars.
- (2) There seems little prospect of obtaining the \$10,000,000 necessary to construct the new unit.
- (3) There is no site in a convenient place large enough for a building of the size required.

For these reasons it was decided to give up, at least for the time being, all idea of a new central unit, and to make plans which would:

- (a) Permit the Widener building to continue as the center of the University Library for many years to come.
- (b) Make unnecessary any one new unit costing so much as to prove impracticable.
- (c) Bring about a better, not a less convenient, setup than the present one.

Before working out details, the needs to be faced and the deficiencies of the present building were considered. Briefly stated, the needs that cannot be provided for in Widener seem to be five in number:

- (1) More shelf space. Between two and three miles of new shelving must be provided annually in order to keep pace with the rapid growth of the University Library.
- (2) More space for readers. During the Reading Period, the main reading room is crowded beyond capacity. The number of stalls and studies for use by research workers is inadequate throughout the year.
- (3) Work space for the staff. Congestion in the work rooms is so great as to impair seriously the efficiency of the workers.
- (4) More satisfactory air-conditioning, particularly for the more valuable books which are now deteriorating rapidly.
- (5) Better provision for undergraduates, for whom the present facilities in Widener are unsatisfactory.

With these needs in mind, a program has been worked out for the construction of four new units. Any one of these would help out the present situation and if all four materialize, ample provision for thirty years will be available. In listing them no attempt has been made to indicate the order of their importance; each is an essential part of the plan:

(1) A storage building in which will be shelved the less-used books belonging to the College Library, to other libraries of the University, and to other research libraries in the metropolitan district and New England. It is proposed as a cooperative enterprise. It is hoped that an act of incorporation for this project will be approved by the General Court of the Commonwealth of Massachusetts during its session early in 1941, and that the movement will include a number of the libraries in the Boston area.

(2) A building in which books which are irreplaceable, or which for other reasons require special care, can be stored, exhibited and used under satisfactory conditions. Since the close of the year for which this report is made, a graduate of the University, who wishes for the present to remain anonymous, has made this building possible, and it is now in the course of construction just to the east of the Widener Memorial building.

(3) An underground stack which will ultimately occupy the whole southeast corner of the Yard. It is estimated that 2,000,000 volumes can be stored in this location in space connected with the Widener building by tunnels and endless belt conveyors which will make the books nearly as accessible as those in the lower levels of the present stacks. This construction can take place in comparatively small and inexpensive units as the need arises.

(4) Last, but not least important, is a central library for undergraduates. Its construction would for the first time provide library facilities for the undergraduates of Harvard College that would compare favorably with those now available to the students in almost any first class college in the United States. Attempts to serve undergraduate and graduate students, research workers and members of the University Faculty in the same rooms have never proved entirely successful and, with the congestion now present in Widener, additional complications have arisen. The proposed new building would include adequate reading room space for the use of reserved books for assigned reading; an open stack collection of perhaps 50,000 to 100,000 volumes readily accessible to all students; and headquarters for the tutorial work of the College.

When these four units are provided, there will be available sufficient book shelving for at least thirty years. With a continuation of the present restriction in attendance, reading room facilities should be adequate indefinitely. Work space for the staff would be cared for. The new building for the irreplaceable books would make possible suitable air conditions that should prevent deterioration. The undergraduate building should care for the present lack of facilities for undergraduates.

It is pleasant to be able to report seven years later, when this article is written, that the four units proposed are now completed, or in course of construction. The storage building which was listed under paragraph (1) of the plan came into being as the New England Deposit Library, and was occupied in February 1942 as a cooperative enterprise in which eleven research libraries in the Boston area have joined, working under an Act of Incorporation approved by the General Court of the Commonwealth of Massachusetts in its 1941 Session. Ninety-eight per cent

of the space in the first section of this storage building is now rented, and it will not be long before a second section must be constructed. Harvard rents some forty-five per cent of the building, which contains a total of 270,000 cubic feet. An article going into some detail about this development will appear in a later number of the *BULLETIN*.

The second unit in the program was for a building to house irreplaceable books, books which for other reasons needed special care, and manuscripts. This building was made possible through the generosity of Arthur Amory Houghton, Jr., '29, and now stands just to the east of the Widener building, connected with it by a bridge and a tunnel. It is called the Houghton Library and was completed and occupied in mid-winter 1942; it contains 441,000 cubic feet of space.

The third unit in the proposed plan was for an underground stack in the southeast corner of the Yard, to be built in units as the need arose. The first section of this stack is now under construction in conjunction with the fourth unit, which is noted in the next paragraph.

The fourth unit was for a central library for undergraduates. This building was made possible by the gift of \$1,500,000 from Mr Thomas W. Lamont, '92, in November 1945, and is now under construction on what was the site of the Dana-Palmer House.⁴ It will complete the program outlined in 1940, and should, when supplemented by additional units of the New England Deposit Library or another regional library, plus additional units of underground stack in the Yard, provide sufficient book shelving and space for readers for the main collection at least until 1970, as was indicated in the report for 1940.

So much for the program which has worked out so satisfactorily. It has been supplemented by additional space elsewhere throughout the University as follows.

The Littauer building mentioned above was completed in 1939. In it, 338,000 cubic feet are devoted to library purposes, including one half of the main floor and a much larger percentage of the ground floor, the basement, and the sub-basement. The library space in these three lowest floors of the building is devoted almost altogether to stacks and carrels, the stacks having a capacity of over 300,000 volumes, and there being 38 carrels. Into this library, beginning with the summer of 1939, there have been moved books needed for the Graduate School of

⁴ See Keyes D. Metcalf, 'The Undergraduate and the Harvard Library, 1937-1947,' *HARVARD LIBRARY BULLETIN*, I (1947), 288-305. A detailed description of the Lamont Library will be published in a later issue of the *BULLETIN*.

Public Administration and public documents from other parts of the University which were not in great demand in other libraries. The collection, together with the seminar libraries in the building, now has nearly 170,000 volumes and pamphlets, and is still growing rapidly. The use of the stack space in the building by transfer from Widener has relieved, or will relieve by the transfer of additional material, the pressure in the older building to the extent of something like three years' growth of the main collection.

The new buildings for the Harvard Forest in Petersham were constructed in 1939, and included library space amounting to 16,000 cubic feet.

In 1940, when Dumbarton Oaks in Georgetown, D. C., was presented to Harvard University by Mr and Mrs Robert Woods Bliss, there came with it the Byzantine library that had been assembled there, together with adequate quarters for it.

In 1947, the Library of the School of Engineering was moved from its quarters on the second floor of Pierce Hall to the third floor, where it now occupies the whole south wing, with some 75,000 cubic feet of space.

During the period under consideration, the space occupied by the Chinese-Japanese Library was increased by 32,000 cubic feet, and additional space in the Museum of Comparative Zoology was turned over to the library there.

During these ten years from 1937 to 1947 the main collection increased by 378,000 volumes and pamphlets, that is from 1,781,700 to 2,160,496, apparently a smaller increase than in either of the preceding decades. This slowing up of growth is misleading, as a somewhat different method of counting was in effect during the period, but the increase from year to year was certainly no greater on the average than in the earlier years, in spite of the fact that in the past most library collections have increased geometrically, not arithmetically. The Widener building, which was nearly full in 1937, is now less rather than more crowded than it was ten years ago, as a result of the shift of material to the New England Deposit Library, the Houghton Library, and the Littauer Library. The other libraries of the University have increased more rapidly proportionately than the main collection, rising from 2,081,350 to 2,807,823, or a total increase of 726,473. This seems a tremendous growth, but it is at a less rapid rate in terms of percentage than that of the preceding decades.

The space occupied by the Library as a whole was approximately 1,000,000 cubic feet greater in 1947 than that at the beginning of the ten years. This space will be supplemented by the Lamont Library when that building is completed with its 1,330,000 cubic feet of space. This will bring the total cubage available to the University Library to over 11,000,000, which at today's price level would involve some \$25,000,000 to replace.

What of the future for university libraries in general and the Harvard Library in particular? This question will be considered in some detail in the third article of this series, but at the close of the present article the problem may be suggested in concrete form by a brief indulgence in speculation. What would be the additional space requirements of the Harvard University Library in the next thirty years if the collections increased during this period by 175 per cent, as they have done in the past thirty years, and if the student body increased by 100 on the average each year, a rate followed in the past thirty years before the great post-war influx of veterans? Instead of figuring the new space in monumental buildings such as Widener, Langdell, and Baker, which together comprise over half the present Library cubage, the estimates will be based on the figures used in the first article in this series, which represent those for very modest buildings. These figures, it will be remembered, are 2 volumes per cubic foot; 400 cubic feet of space for each reader, with 1 reader for every 3 members of the student body; and a staff member for every 13,000 volumes. Utilizing these figures, and assuming a rate of growth in collections and students equal to the last thirty years, in the next thirty years the Harvard Library would add 8,688,000 volumes to its collections; would provide space for 1,000 additional readers (based on an increase of 3,000 students); and would add 670 members to its staff. If a minimum space for halls and services is included, the new requirements would amount to well over 6,000,000 cubic feet, which at today's prices should be figured at \$15,000,000 for building and equipment. To this should be added the income from at least \$5,000,000 more for the current upkeep of the buildings, making \$20,000,000 in all for the building costs for the thirty-year period. This is at the rate of \$650,000 a year for new construction. It may be seen that the estimate of the amount of new space which would be required is not exaggerated in any way when it is realized that the present 5,000,000 volumes are cared for in a space amounting to 11,000,000

cubic feet, and the new estimate provides for only 6,000,000 cubic feet for 8,750,000 volumes. It should be remembered, also, that the figures for costs are for buildings only, and do not include anything for book acquisition, salaries of new personnel, or various service charges which when taken together would present a similarly formidable total.

However, there is a somewhat brighter side to the picture. The writer has stated above that present and projected construction should provide adequate accommodation for the Harvard collections and readers, at least through 1970. This estimate, first made in 1940, and reaffirmed seven years later, is based on no such rate of growth as that of the past thirty years. In particular, the book collection rate has been reduced one half. In the first article of this series, some discussion was offered of the limiting factors in the growth of university libraries, factors both inherent and contrived. The third article, in considering the future, will treat in more detail the problem of what university libraries can do to keep their growth in space requirements within the framework of their proper function and within the compass of probable support.

KEYES D. METCALF

List of Contributors

- ELMER D. MERRILL, Arnold Professor of Botany, Harvard University
- ELIZABETH COOK, Girton College, University of Cambridge
- ANNA C. HOLT, Librarian of the Harvard University Schools of Medicine and Public Health Library
- HAMILTON VAUGHAN BAIL, Treasurer of the Franklin Institute, Philadelphia, Pennsylvania
- LOUIS M. LYONS, Curator of the Nieman Fellowships, Harvard University
- KEYES D. METCALF, Professor of Bibliography, Director of the Harvard University Library, and Librarian of Harvard College
- THEODORE SPENCER, Boylston Professor of Rhetoric and Oratory, Harvard University
- GEORGE SHEBBURN, Professor of English, Harvard University
- HARRY LEVIN, Associate Professor of English, Harvard University
- RUTH MULHAUSER, Associate Professor of Romance Languages, Flora Stone Mather College of Western Reserve University
- ROBERT H. HAYNES, Assistant Librarian of the Harvard College Library in charge of the Reference and Circulation Division
- ROLAND H. MOODY, Keeper of the Collections, Harvard College Library