Graduate Education and Library Resources

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"The library is the heart of the university." These words, repeated so regularly at the dedication of university library buildings, too often sound sourly to the university librarian, who knows all too well what the needs of his library are if it is genuinely to fulfill its potential and needed function, but sees these needs passed by in favor of what seem to him to be less fundamental contributions to the university's capacity for useful work.

I do not think we need long debate the importance of the library to graduate education. Without making invidious comparisons between the library and the other accoutrements of graduate instruction, we can agree that it is an essential and indispensable element. I would rather discuss some of the considerations which affect the procurement of library facilities in such measure as to contribute to excellence in graduate education.

I suppose we must first deal with the matter of absolute size of library collections. There seems to be little doubt that there is in general a correlation between excellence in graduate instruction and the size of the available library collections. But can this be expressed in terms of cause and effect? The answer is probably yes; but it must also be added that the relationship is probably not a direct one. The size of the library in those institutions in which excellent graduate instruction is provided is itself ordinarily the result of consistent excellence in graduate and undergraduate instruction over a substantial period of time, and, even more, a reflection of the mature and productive scholarship of the teaching staff qua research staff. And just as good graduate students are attracted to good teachers, so the good scholars are attracted to institutions having good libraries. And—and this is the whole point—libraries which are good for the diversity of interests which are represented in a university faculty necessarily are or soon become large libraries.

Can we, nevertheless, turn the question around, and inquire

whether it is possible to attain excellence in graduate education without extensive library facilities? There might be several answers here. We can all readily think of institutions which have at one time or another maintained excellent graduate programs on very slender library resources. In all the instances which occur to me, however, the excellence has been because of the excellence of the teaching staff recruited with a missionary purpose and despite the weakness of the library. And in each case the institution has given priority to strengthening its library. Thus Johns Hopkins came almost overnight, without great library resources of its own, into a distinguished graduate program, but it had, in the first place, access to the collections of the Peabody Institute (which for long was considered the unofficial library of the University); besides, the members of the teaching staff were mature scholars—men like Ira Remsen, J. J. Sylvester, Herbert Baxter Adams, B. L. Gildersleeve and Henry Newell Martin—with considerable libraries of their own, some of them (such as that of Sir William Osler at a later date) very important libraries; and it is further of record that much use was made by the faculty, in the early days, of the collections in Washington, an hour away by railroad. In any case, Hopkins rapidly built up its own library; starting with 200 volumes in 1877, it reached half a million by the nineteen thirties and now exceeds a million. The same kind of thing seems to be happening, more recently, at Brandeis.

But, it may be said, a distinction should be drawn between the experimental and the book-oriented studies: the former can get along with a reference collection and occasional dependence on outside resources; the latter need the historical collections. It may be readily admitted that graduate instruction in certain fields can rise to a high level of excellence with but meager library support, while in other fields such excellence would be unattainable. It is probably true, however, that real excellence is only rarely and sporadically attainable in a mediocre milieu, and that although graduate instruction in a field having little dependence on library resources may itself be excellent, yet the recipients of this narrow instruction will be the poorer by association with colleagues not as well endowed as themselves. So we are back at the original point, namely, that the excellence of graduate programs appears to require excellent library facilities.
But what is the measure of this excellence? It is conceded that no one library can contain all the books printed, that no scholar can read even what is published in his narrow specialty year by year. Why struggle? Can we not get along on a bare minimum? Who will be any the wiser, and who will be any the worse off? If the alternative—namely, of collecting comprehensively—is adopted, where can one stop short of bankrupting the institution in the mere piling up of acquisitions which will never, in spite of all efforts, reach real comprehensiveness?

These are hard questions, and if there were any pat answers, they would long ago have gone into the rule books. On the contrary, these questions are the daily concern of many a university librarian and to a less extent of his faculty advisory committee and his administration. Very often, indeed, the result of the concern has resulted in what has seemed like a kind of injudicious competition among institutions in the matter of library statistics—a competition which paralleled and seemed to palliate or to countervail the more obvious competition of the gridiron. But it is my guess that although many foolish things may have been done out of inter-institutional rivalry in the matter of library statistics, these things were no wit as foolish as doing nothing at all, and the results, though costly and perhaps unjustified at the time, are rarely if ever regretted later.

President Colwell, some years ago, hazarded the guess that 100,000 volumes was about right for an undergraduate library and a million volumes for a university library. Experience since then in a number of institutions has borne him out on the undergraduate library, especially in institutions where there is also a graduate library. This is because actual lists of books have been drawn up—first the Shaw List of Books for a College Library, 1931 and 1939, later the Lamont Library Catalogue, 1951, and still later the unpublished lists (obtainable in microfilm) of the Michigan and California undergraduate libraries. These have made possible the actual inspection and criticism of the content of such libraries by the subject specialists involved, as well as actual experience in the use of them. Most recently, the American Library Association, under a grant from the Council on Library Resources, has undertaken to maintain such a list currently, with the intention that the selection shall be made by subject specialists, and with the further intention of main-
taining the quantitative stability of the list through weeding of superannuated titles.

No such thing has happened, however, to President Colwell's hazard with respect to university libraries. No university, including the one for which he spoke, has limited itself to a million volumes when the time came to exceed that mark. Perhaps the reason lies in the fact that there is for university libraries no Shaw or Lamont list as there is for undergraduate libraries.

It would be interesting to speculate what such a list would look like. About twelve years ago, when the shadow of the atomic bomb first lay most heavily upon us, a committee of the Association of Research Libraries met to consider precautions against the threat of annihilation of library resources. The principal conclusions of the group do not concern us here, but out of the discussion came the suggestion that there be drawn up for each discipline a list of the books required to assure the preservation of knowledge and the continuance of research in the event of a catastrophe, and that each region of the country should be encouraged to make itself complete with respect to the contents of the lists. The proposal was perhaps preposterous; in any case it was never carried out, although a preliminary list of published lists of books recommended by various professional organizations was brought together. But had it been carried out, we would at least have the beginnings of criteria for the contents of research libraries as we now have for undergraduate libraries.

As a matter of fact, I have little doubt but that such a list will at some time come into being. The costs of book-selection and of cataloguing are very high, and these are both jobs that can be greatly facilitated by central services. The same thing is true of selection for weeding. Now it would not be too difficult to issue a standard catalog of a million (or even two million) titles which would represent the normal stock-in-trade of a university library, and to publish at regular intervals (say weekly) the additions to and weedings from this list, together with all the cataloguing data needed by the individual institution. All the remainder of the collections of our great libraries, by definition of infrequent use, could in that case be consolidated into a few regional depository libraries, available when needed but not congesting the bookstacks or the catalogs. However, let us first see what the American Library Association's
New Shaw selection service will accomplish for the undergraduate collection.

(Quite in passing, one great advantage of a standard list is in the assistance which it brings to making the books listed in it available. Half of the difficulty of building a university collection is in finding the out-of-print books. Once these get into a standard list, however, the first step is taken toward bringing them once more into print or in assuring their availability by photographic processes.)

The great advantage of a library is its immediacy—the books are at hand; but in this very immediacy lies danger. In the United States we have developed the open-access subject-classified collection. As a result, users of our libraries become used to consulting books at the shelves and expect to find the material of interest to them gathered together there. They take what is offered, and tend to ignore the by far larger part of the literature which the library does not have or does not readily present. They neglect, in other words, the bibliographical tools. Neglect soon runs into ignorance; and scholarly ignorance of the bibliographical tools of their disciplines has received some recent severe comments. From Yale, for example, comes a recent report that “most startling . . . is the evidence, seen at first hand, of the wholly inadequate training of the younger scholars in the bibliography and history of their fields.”

Now it may be possible at Yale and Columbia to do good work (though even this may be doubted) under the bibliographic protection of massive classified collections and a good catalog. But the smaller the collection, the less this protection becomes, and the more important the use of the bibliographic resources. Unfortunately, the smaller collection is only too likely to be deficient in the bibliographic resources also—these are expensive, often scarce, and in any case “secondary”; and a library whose slender book budget is stretched thin by demands from many departments is much more likely to get the texts which can be read rather than bibliographies which can be only consulted, resulting only too often in requests for purchase or loan or photographic service, all of which take time, manpower and money to honor. In the matter of library resources, librarians and the users of libraries are alike in this—they will “make do” with what they have, even if all they have is an *Encyclopaedia Britannica* and a *World Almanac*, if they can possibly avoid going
beyond the local resource. This is a commendable attitude, no doubt, but it can obstruct good research.

In the words of Alexander Pope, it is "index learning" that "holds the eel of science by the tail." If a program of graduate instruction cannot offer its candidates excellent library resources, it must at least make the effort to provide them with the bibliographic facilities which serve as the indexes to the literatures of the subjects in which they work, regardless of where the books themselves may be located. I would be inclined to say that the provision of adequate bibliographical resources, and instruction in their use, should claim a high priority on the book funds and energy of any institution aiming at excellence in graduate instruction.

Some of the results of the use of bibliographies have already been indicated in demands for access to materials not locally available. This is as it should be. Some of the demand may be diverted into the institution's own acquisition program; and it may be remarked that a graduate student or a young instructor can often make a greater contribution to his department and simultaneously to his own bibliographic education by drawing up an acquisition want list in the field of his study than by engaging in his own research. There are a number of instances of assignments of this kind in the larger institutions.

But much of the demand will ordinarily be reflected in demands for inter-library loan or photocopy. Neither of these methods of gaining access to a publication is as satisfactory as having it at hand; but it would appear that we shall have to rely upon them increasingly, and that the best way to make them more efficient is to press them beyond their present limits.

Both of these classes of service are now rendered by courtesy, not of right. They are hedged about with restrictions of various sorts: local demand always has first claim; rare books and periodicals may not be lent and frequently not copied either; sometimes the prohibition against lending extends to books in print; response is often so slow as to be defeating; copyright is an obstacle to copying; finally, there is an inequality of payments here: the large institutions are asked for much but ask comparatively little in return; the smaller institutions find it hard to justify their continued demands for service and discourage students and faculty from giving rise to them.
It is apparent that some formulae must be found to introduce obligation into this situation instead of mere courtesy, effective as that has been to a degree in the past. Several formulae are being tried. One is that of the interlibrary center, of which the Midwest Inter Library Center is the example, with no other duty than to consolidate, catalog and hold lesser-used materials for its members.

Since the fact may not be known to you it may be worth mentioning at this point that the Midwest Inter Library Center does not refuse services even to institutions which are not members, and has actually assumed certain nation-wide responsibilities. One of these is with respect to the microfilms of series of foreign newspapers and gazettes under programs initiated by the Association of Research Libraries. Another is with respect to the journals indexed by Chemical Abstracts and by Biological Abstracts; under grants from the National Science Foundation the Center has undertaken to acquire all such journals not already received by its member libraries. The result is to make the Midwest region, alone in the United States, complete with respect to these journals.

Still another formula for making the library resources of a region available to all within the region regardless of the local obligations of individual institutions is that which has been launched in its 1961 Library Code by Pennsylvania and which is being proposed in varying forms in New York, Michigan and Florida. The Pennsylvania plan provides state support not only to local libraries but to 30 district library centers which will provide specialized facilities to the local libraries. Beyond these are four regional centers (Pennsylvania State University Library, Pennsylvania State Library, Philadelphia Free Library and Carnegie Library of Pittsburgh) each of which will receive a maximum annual appropriation of $100,000 for acquiring research materials for statewide use. The system is coordinated by the State Library and an Advisory Council on Library Development.

It may easily be foreseen that one of the first consequences of such a system will be in the requirement for an expeditious mechanism for locating the sources whence books may be borrowed or photocopied. By good fortune, such a device already exists in Pennsylvania, the Philadelphia Bibliographic Center and Union Library Catalog, which records on some 3.5 million cards the book and periodical holdings,
estimated at some 6 to 7 million volumes, of 122 member libraries, principally in eastern Pennsylvania, and which gives a location and bibliographic service by mail, telephone and teletype. Although the Center has always enjoyed the hospitality of the University of Pennsylvania, the State Library has recently become a member, and it may be expected that the Center's facilities will more and more enter into the developing plans for the statewide system of library service.

This is a very important step both toward making the resources of the region generally available, and—by permitting and encouraging specialization—toward reducing the burden upon individual libraries for keeping the lesser-used materials. Such cooperative ventures as the Farmington Plan for the Cooperative Acquisition of Foreign Publications and the important interlending systems of Great Britain, Germany, the Netherlands, Switzerland, etc., are, of course, entirely dependent upon union catalogs.

There is no doubt, then, that the possession of a union catalog and bibliographic center is a valuable asset if not an essential resource for the library-based research of the area. The closer at hand, the better, and the more easily and effectively it can become the communal holding agency for a number of the expensive bibliographies and bibliographical services which I mentioned earlier. However, it is true that union catalogs are costly, like everything else (the Philadelphia Center cost $30,000 to maintain last year) and must justify their existence by their use and by the savings to the participants accruing from that use. Although a number of regional union catalogs were established during the 'thirties with WPA assistance, most of these could not thereafter justify their existence; only a handful remain. One of these, the Bibliographical Center for Research—Rocky Mountain Region, located in Denver, has, I believe, a number of Texan members.

Two unsatisfactory features of union catalogs, as currently maintained, may be mentioned. The first of these is that in their typical form on catalog cards they exist in only one copy. This means that the whole story is never quite known to the inquirer at a distance, who is dependent upon someone else to do his searching. And, if the catalog is a membership-supported operation, this searching must be paid for. By contrast, if the catalog can be published, it is under
the control of the ultimate user, who can then conduct his own searches, and can allocate to the purchase of a publication what was previously paid for searching.

Accordingly, means have been sought to publish union catalogs. Thus it is quite usual to publish in book form separate union lists of newspapers and other serials, i.e., journals, periodicals, etc. At a next stage union catalog information may be published regarding special categories of material such as incunabula, or English 16th and 17th century imprints. Commencing with publications of 1956, the Library of Congress is publishing the entire National Union Catalog in book form. This is expensive, of course, and furthermore, the publication does not, for lack of room, list all locations for more commonly held books, but this publication does make it possible to have the locational information where it is needed instead of stored at some central location which must be consulted by mail or wire.

Another unsatisfactory feature of union catalogs is that they are usually main entry catalogs only, and do not attempt to assist searches by subject. There are, however, some precedents for subject union catalogs, among which is the Cyrillic Union Catalog at the Library of Congress, which is currently being published in Microprint. And there is some possibility that the book-form publication of the National Union Catalog may be supplied with a subject index.

It goes without saying that the institutions of higher learning (as well as other research organizations) in Texas require the kind of service which a union catalog-bibliographical center can give, if they are to get access to the library materials needed for their work. Whether their need is such as to justify the creation and maintenance of a union catalog for the use of the area, or whether considerations of efficiency argue instead the use of existing facilities elsewhere and participation in programs for the publication of union catalog information which will bring it closer to hand—these are matters which are undoubtedly deserving of study by the library community of the state. Mr. Alexander Moffitt, the Librarian of the University of Texas, tells me that in 1960/61 he had requests for the interlibrary loan of 8,176 titles, of which 5,689 were from within the state. In response he was able to lend the requested work in 3,162 cases and supply photocopies in 888 others (thus meeting 71% of the total requests—quite an achievement!), leaving 1,639
or 29% of the requests unmet. It may be remarked, that although this service constitutes a substantial burden upon a single institution, it is nevertheless evident that 5,689 titles a year may represent but a minute fraction of the real needs of Texas for research library materials not locally available. Certainly I have personally heard many complaints regarding the difficulties of locating research materials here in Texas, but I am unable to judge of their justification. Texans are sometimes impatient with situations which we others become used to tolerating.

But no access to the resources of the rest of the country, no matter how we may be able to improve it, will ever be quite as good as having resources at hand. And the development of the microphotofacsimile has made it possible for even small institutions today to possess collections which only yesterday were forbidden to the wealthiest libraries. What library, yesterday, had a complete collection of all the books listed in Pollard and Redgrave’s *Short Title Catalog* of English books, 1475-1640, or in the Wing continuation for 1641-1700? Now anyone can have them on microfilm, and not at collectors’ prices but for a few dollars per title. Who, yesterday, had access to the Migne *Patrologiae*? Now anyone can get the 382 volumes of both the Greek and Latin series on Microcards for $1,510. No library yesterday—not even the House of Commons—had a complete set of the Sessional Papers of the British Commons for the entire period 1731-1900. Now any library may have it in Microprint for $9,250—less than the cost of binding the 6,000 volumes of the original prints. The list may be multiplied. The 1962 *Microforms in Print* lists some 11,500 publications of American publishers alone, of which Migne, the Sessional Papers and such titles as *Chemische Berichte*, 1868-1958, are but single titles.

Perhaps you will permit at this point a digression on the microfacsimiles, since this is a subject which has considerably occupied the attention of the Council on Library Resources. For library work microfacsimiles offer the following advantages: (a) space-saving—this is obvious; (b) preservation of materials which, like newspapers, are subject to certain and rapid deterioration; (c) avoidance of cost of binding of materials which would otherwise require such treatment for storage; (d) a convenient—because machineable—form for reproduction of service copies, whether in microfacsimile or in
original size; and (e) an inexpensive yet accurate method of publication.

Now, although the space-saving characteristics of the microfacsimiles are obvious, the cost of making them—which is largely manual—is so high that (except in high-rental areas such as lawyers’ offices or special libraries in the administrative or research departments of industrial and commercial enterprises) it has never yet paid a general library to reduce its collections to microfacsimile. The break-even point for general libraries, according to a recent calculation, comes only when some 20 to 30 libraries share the cost of making the negative. This accounts for the fact that none of the great libraries has yet undertaken an enterprise for saving space by reducing even its little-used materials to microfacsimile. However, there are developments in the wind which may alter this situation.

It is generally only when other objectives can be met that the space-saving advantage accrues. For example, in microfilming newspapers a library simultaneously assures the preservation of deteriorative material, avoids the costs of binding it, and saves space. This is good.

It is in their contribution to the inexpensive yet accurate publication of texts that the microfacsimiles have to date performed their greatest service for libraries and their users. They have made possible the availability in this country, brought together by subject, of masses of important documents of which the originals are widely scattered in European archives; they have permitted the reproduction of long out-of-print and scarce books—all with great accuracy and at prices which bring them within the reach of many libraries. The cost of these facsimiles is in general between two cents and two-tenths of a cent per copied page, depending upon the process, the size of the edition and the extensiveness of the work copied.

At this stage of the development several comments may be made. The first is that at two cents per page (which is closer to the norm than two-tenths of a cent) the cost is still high, and prohibits many, even large institutions, from acquiring desirable items in this form. Five years ago I counted up the cost of the material available in the micro-opaques alone (then a comparatively new format) and found that this was already in excess of $60,000. This count ignored the much greater quantity of material at that time available on microfilm.
It would appear, in consequence, if the medium is to achieve its potential objective of making it possible for the library wealth of the world really to be shared, that the present cost must be brought down. There are ways of doing this. Take one example. With the micro-opaques it is now necessary to reproduce each card or sheet by a printing process. At each impress a copy is produced which contains the micro-images of from 10 to 200 pages. The per-page cost is obviously related to the number of pages per card. Suppose that this number could be increased to 3,000 or even 10,000, the cost might be reduced substantially. Techniques for doing this are in the offing.

Just in passing, it might be mentioned that at 3,000 pages per 3 x 5 inch film (a physical possibility by several methods), the 12 million volumes of the Library of Congress (estimated at 300 pages per volume) could be copied on 1,200,000 cards and could be stored in less than 30 linear feet of shelves.

A second comment relates to the devices for making use of the microfacsimiles. Although these are much superior to what they were even five years ago, they still leave much to be desired. Among their deficiencies the outstanding defect is that they are institutionalized—part of the immovable equipment of the library; the reader must go to the machine, and the machine is not portable in the sense that a book is—it cannot be taken to bed.

In the Council on Library Resources we have spent quite a bit of trouble in attempting to meet this problem and to devise a suitable hand reader for individual private use. It has been our thought that if the use of microfacsimile could be made even comparable to the reading of the original print in terms of portability and convenience, this would really liberate the microfacsimile for the uses of teaching and research. So far we have had very imperfect success, but are still hopeful.

Of course, you may say, if it is difficult for an individual reader to use microfacsimiles at the present ratios of reduction (of the order of 1:20) how do you expect that he will use the higher ratios (of the order of 1:200) of which you have been speaking? All I can answer is that the point is well made.

A third comment is that it is not possible to browse in a collection of microfacsimiles. But the fact is that it is less and less possible to
browse among library research materials. We consign important publications to the interiors of bound periodicals where they are not easily reached by the browser; and this quite apart from the fact that the periodicals of his field are so numerous that few browsers would reach them, even if his library acquired them. More and more, in consequence, an inquirer must be guided to the pertinent article by bibliographic means—through a citation in a bibliography, index or abstracting service, a reference in another article or book, or a commendation from a colleague.

In consequence, I would draw the deduction that the success of the microfacsimile library will be dependent upon its relation to a bibliography. Some of the more successful microfacsimile publishing ventures already attest this thesis. Thus, the happy marriage of Pollard and Redgrave and the Short Title List microfilms, already mentioned; the U.S. Atomic Energy Commission’s microcarded reports and its Nuclear Science Abstracts; the Monthly Catalog of the U.S. Superintendent of Documents and the Microprint edition of those documents, etc.

Suppose that every college library in this country could have, in microfacsimile, all the articles referred to in the Readers' Guide to Periodical Literature, or the Art Index, or Chemical Abstracts, or Geoscience Abstracts, or the MLA annual bibliography—conveniently at hand, promptly available, inexpensively reproducible? Might this not be expected substantially to advance research?

Speaking of bibliographies, however, these are a problem in themselves. They are both costly and deficient. Methods for improving them and reducing their cost are badly needed. In one field (medicine) the adoption of new techniques has recently had a very beneficial effect, and still newer techniques are now being tried. But for most bibliographies this cannot be said. It is significant, for example, that the H. W. Wilson Company, which serves some 60,000 libraries with 24 major recurring catalogs and indexes, covers a total of only some 1,250 periodicals. Meanwhile the New York Public Library maintains subscriptions to nearly 26,000 periodicals and the Library of Congress currently receives perhaps three times that number. It is obvious that we need better techniques.

Still another comment regarding the microfacsimile before we leave the subject. It is apparent that a principal effect of the micro-
facsimiles is in their facilitation of publication. They have already made possible the dissemination of many hundreds of thousands of pages which would otherwise never have been disseminated—witness the meteorological reports of the International Geophysical Year and the reports of research sponsored by the U.S. Atomic Energy Commission. Let us stop for a moment in horror at the prospect of being inundated by microfacsimile in the same way that we are now being inundated by full-scale publication—but much more effectively because the increase will be more rapid and less restrained by publication cost, weeding will be more difficult, and a retreat through further miniaturization will be much less rewarding.

As I see it, the principal defense against this threat lies exactly in tying the microfacsimile as rapidly as possible to bibliography. The acceptance of the microfacsimile as publication must be made dependent upon its ability to qualify for selection and for description in some recognized bibliography—the catalog of a library, the abstracting service which serves a recognized discipline, an annual review of the literature, or some similar medium.

I have dwelt perhaps at too great length upon the microfacsimiles, but my excuse is that they seem to me to offer an enormously powerful tool to the building of research collections in places where such collections do not exist in sufficient strength. And again, I am persuaded that no matter how important it is to devise arrangements whereby the library resources of the country may be shared, I think it of still greater importance that individual institutions possess adequate resources of their own.

To summarize: excellence of graduate instruction requires excellence of library facilities. Such excellence is costly. A first task is to create a divine discontent with existing resources by exposure, through the bibliographies, to the universe of research material and to stimulate demands for purchase, loan and photocopy which may press existing facilities to improvement. Thereafter the cost can be reduced by the development of methods for sharing resources regionally and nationally and by building local collections through microfacsimile. But nothing can be done to diminish the requirement for basic collections in the traditional form through which the student will make the transition from his native parish to the wide world of learning which possesses its own specialized tools of information and research.