

BOOKS AT BROWN

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BROWN'S MATHEMATICAL LIBRARY

The Mathematical Library at Brown University ranks with the best in this country or in the world. At present the only others which may be as good or better are those at the Library of Congress; at Chicago, Columbia, Harvard, Illinois, Michigan, and Princeton Universities; at the British Museum; at the State Library of Prussia, Berlin; at the Mittag-Leffler Institute in Djursholm; and at the University of Göttingen in Germany. But in less than half of these libraries are the arrangements for students anything like as satisfactory as at Brown.

Through filming, the amount of new material added to the library is being very rapidly increased. This was made possible by a grant of \$21,000 for this purpose from the Rockefeller Foundation. It is hoped that by 1944 the Brown Mathematical Library may become the finest general library of its kind in the world and be in a position to announce that it is prepared to be of both national and international service through supplying at small cost, to any individual or library, films of any desired article, pamphlet or book in the mathematical field. For, another part of the Rockefeller grant established also at Brown University a remarkable Microfilm Photographic Laboratory.

In developing this special library at Brown one ideal constantly kept in mind was that Brown should be a place where a world outlook on mathematics in all its phases should be possible, that we should try to assemble there material by means of which the full nature of mathematical activity in every country might be studied. As one means to this end an attempt was made to secure every current mathematical periodical, in every language, and as many as possible of earlier serials of this nature. Every publication of every mathematical society in the world was sought, also all academy and society publications containing papers of special mathematical interest. Such publications provide information as to mathematical discoveries and movements, also personal and

other news, throughout the world, and often suggest desirable timely exchange of views or other action. Special search was also made for all bibliographical, historical, or biographical data for every country. One of the questions most frequently arising is as to what is known concerning the life and work of a certain individual.

Thus publications in considerably more than a score of languages were brought together. Perhaps the listing of some of them may be of interest: Bulgarian, Chinese, Czech, Danish, Dutch, English, Flemish, French, Georgian, German, Greek, Hungarian, Italian, Japanese, Norwegian, Polish, Portuguese, Rumanian, Russian, Spanish, and Swedish. There are more than 275 current periodicals in these languages in pure and applied mathematics and astronomy. Of more than 20,000 volumes in the library about half are serials.

Most of the current periodicals have been coming from Europe, Germany contributing about a seventh of the whole number. Thirty come from North and South America, the four from the latter continent being in Spanish; Asia has been sending another score, most of which come from Japan where a majority of the articles are in English, but some are in German and Japanese; the four journals from India are in English. Holland and Poland each contributed about a dozen periodicals and some of the latter are of special importance.

The bibliographical section of the library, dealing with mathematics, mechanics, astronomy, physics, and engineering, is important and includes, as one feature, a number of catalogues of libraries. An instance of the use of such a volume may be cited. In 1917 during the last great war the editors of the works of Christian Huygens in Amsterdam appealed to me for information as to where one of his publications formerly in the library of the University of Leyden might be found. By return mail I was able to report that our catalogue of the library of the Pulkowa Observatory in Russia listed the volume. As a result the editors obtained a photographic copy, even during the war, and were able to proceed with the publication of the corresponding Huygens volume.

Not a few other similar instances might be cited of the library, in this and other sections, meeting special scholarly needs, quite apart from the fact that interlibrary loans of our volumes are made every week of the year to institutions all over the United States and in parts of Canada. One of the most frequently consulted groups of books is that collection of about 2500 volumes devoted to biography, history, and mathematical and astronomical works

before 1200. This is the university's center for the History of Science (mathematics, astronomy, physics, biology, chemistry, etc.). Such volumes include not only very popular but also highly scholarly works, as well as the principal material dealing with Hindu, Greek, Egyptian, and Babylonian mathematics and astronomy. The mathematics department is indeed proud that it numbers among its members Otto Neugebauer, the greatest living authority in the fields of Babylonian and Egyptian mathematics and astronomy. With the aid of a research assistant he is able to devote much of his time to research in connection with hieratic papyri, hieroglyphic inscriptions, cuneiform tablets and documents in Demotic, Greek, Coptic, and Sanscrit, so necessary for gaining first hand knowledge of Hindu astronomy and mathematics. A number of Sanscrit texts and some current oriental periodicals are in our mathematical library and important works in the field of Egyptology and Sanscrit are in the main library. But many more periodicals and important works of reference in the oriental field are highly desirable for facilitating Professor Neugebauer's research; for example our desiderata include the following: *Acta Orientalia*, 17 volumes; *Zeitschrift für Ägyptische Sprache und Altertumskunde*, 75 volumes; *Mémoires publiés par les membres de la mission Archéologique Française au Caire*, 60 volumes; and *Revue d' Assyriologie Orientale*, 32 volumes.

Professor Neugebauer and Professor Tamarkin* (also a member of the mathematics department) are the editors of the highly important international *Mathematical Reviews* of the American Mathematical Society. Since the editorial office of this journal is at Brown University, new mathematical publications come from all over the world to its office and are a constantly vitalizing source of suggestion for rounding out the library.

Mathematical tables of very varied character are rapidly becoming of importance in many fields of research. The group of over 500 volumes found in the library is very notable and is now contributing in very effective fashion to the work of an international Committee on Mathematical Tables of the National Research Council. Professor Archibald is chairman of this Committee.

The library's collection of 3000 doctoral dissertations calls for a great deal of development, but already the collection of French dissertations for 130 years is probably the best in America; the Danish set, as well as those of the University of Chicago, University of Illinois, and University of Stockholm are complete; and the University of Upsala and University of Göttingen sets are

*Deceased 1945

almost complete. The Russian collection is exceptional, but its development is a matter of first importance for the future, since in the past Russia has done a great amount of valuable work and the United States and Russia today lead the world in mathematical research.

The library's group of reports of national and international congresses and of sets of collected works is exceptionally large and the lacunae are few. We have tried to procure not only all treatises in pure mathematics which are of value for research, but also all editions of such works, since verification of reference to them is often a matter of some importance. Mimeographed notes published by universities throughout the world are valuable and have been assiduously collected. The library has numerous works dealing with the mathematics of subjects discussed in other departments of the University such as biology, chemistry, economics, education, engineering, geology, philosophy, and physics.

But while in the assembly of material emphasis has been placed upon meeting the chief technical needs of the university departments, special attention has also been given to securing everything of a mathematical nature which would interest the general reader who has, perhaps, taken no mathematics in college. The library contains very many volumes of essays, of mathematical recreations, of novels such as Van Dine's *The Bishop Murder Case*, Haldane Macfall's *The Three Students* (life of Omar Khayyâm, mathematician, astronomer, poet), and poetry as illustrated by *The Torch Bearers* of Alfred Noyes, with its fine sections on Sir Isaac Newton and Sir William Herschel.

For more than a century Brown's general library has been regarded as a feature of central importance in the University's educational equipment and her students and professors of this day are fortunate indeed to live in an atmosphere where a traditional attitude so happily fosters the aspirations of the earnest student and the research worker. It has long been generally known that three of the special libraries at Brown are of unique and outstanding importance in the world: the John Carter Brown Library of American history before 1800, the Harris Collection of American poetry, and the Lincoln Collection. And now it is hoped that in the near future there may be a fourth outstanding library. To assure that the library will be kept up to date after 1944, or even carried on adequately before then, an endowment is necessary to make possible the purchase of printed books (old volumes can often be purchased more cheaply than they can be filmed). Such an endowment ought to be about \$100,000.

The present standing of the library is largely due to the great generosity of the Library Committee; to a special grant of \$3,000 from the Corporation; to a gift of \$1,000 from Doctor Burwell; to constant benefactions from its good friend Chancellor Chase; and to the Nathaniel French Davis Fund of \$10,235, established on the initiative of the Department's Visiting Committee by friends of a great Brown teacher and personality. But the library's present status is also due to a long list of friends in almost every country of Europe who during the past thirty years have constantly aided me in securing desired items, often out of print. A single instance of such aid may be mentioned. For a year or so after I had been corresponding with a friend at the University of Cluj, Rumania, I wrote to him that we should very much like to secure for our Library a set of the publications of the Society of Sciences of Cluj, but he quickly reported to me that these were only available to members of the Society. Six months later, however, I received from the Society a notice that I had been elected an honorary member and that a complete set of its publications had been sent to me as a gift!

Mathematics is the most fundamental of the sciences and it is daily becoming of more far reaching importance. It deals with truths which never get out of date. The extraordinary power, genius, and perfection of form displayed in writings of Archimedes more than two thousand years ago still excite profound admiration and astonishment. It would not be inappropriate that the finest mathematical library in the world should be established with an adequate endowment in a University whose charter demands that "the Public teaching shall in general Respect the Sciences."

R. C. Archibald.
Professor of Mathematics

Since the original report on the Mathematical collection of Brown University Library was written, the resources of the library for research in both pure and applied mathematics have been expanded by the acquisition of several hundred volumes of scientific periodicals and books as well as by the acquisition of microfilm copies of over 2,000 volumes of scientific periodicals, mathematical theses, manuscript and printed mathematical tables.

In any specialists' library there are always important gaps in the whole range of its holdings, which ought to be filled as opportunity and finances permit. Thus, apart from many such gaps so far as concerns individual volumes of pure and applied mathe-

matics printed in France, Germany, Belgium, Holland, Italy and Scandinavia during the war, there are many sets of important serials and a great many doctoral dissertations to be acquired before our collection can be considered to be adequately comprehensive. Such additions would also add strength to research materials in the fields of Physics, Chemistry, Biology, Aeronautics, Engineering and Astronomy. In general, there is urgent need for the development of the library in the various fields of Applied Mathematics.

During the past fifteen years, the number of important works in both pure and applied mathematics being produced in Russia has been expanding more rapidly than in any other country. Such works are, however, very difficult to acquire, since many of them are published in small editions, and are available outside of Russia only on exchange. At the present time, we are effecting exchanges with six Russian libraries, and have written to establish exchange relations with a dozen others; further development in this direction is highly desirable. The collection of material which we may offer in such exchanges calls for the purchase of several copies of current journals and other items.

David A. Jonah

In charge of Science Divisional Libraries

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