BODLEIAN LIBRARY

THE OPENING
OF THE
NEW LIBRARY
BY
HIS MAJESTY
KING GEORGE VI

24th OCTOBER 1946

ORDER OF PROCEEDINGS

GUESTS *will assemble in the Reading Room of the New Library between* 2 *p.m. and* 2.30 *p.m.*

If the necessary arrangements can be made they will hear a broadcast of the proceedings in the SHELDONIAN THEATRE, *where about* 2.30 *p.m. there will be an organ recital followed at* 2.45 *p.m. by*

The National Anthem
The Formal Opening of the House (in Latin)
The Loyal Address read by the PUBLIC ORATOR *(in Latin)*
A Speech by the CHANCELLOR
A Reply by HIS MAJESTY THE KING
A Formal Closing of Convocation (in Latin)

The ROYAL PARTY, *accompanied by the* CHANCELLOR, LADY HALIFAX, *the* BURGESSES, *the* CURATORS OF THE BODLEIAN LIBRARY, *the* MAYOR, *and the* TOWN CLERK, *will, after the conclusion of the ceremony in the Sheldonian Theatre, cross to the New Library in Procession, where* HIS MAJESTY *will unlock the door at the Broad Street entrance*

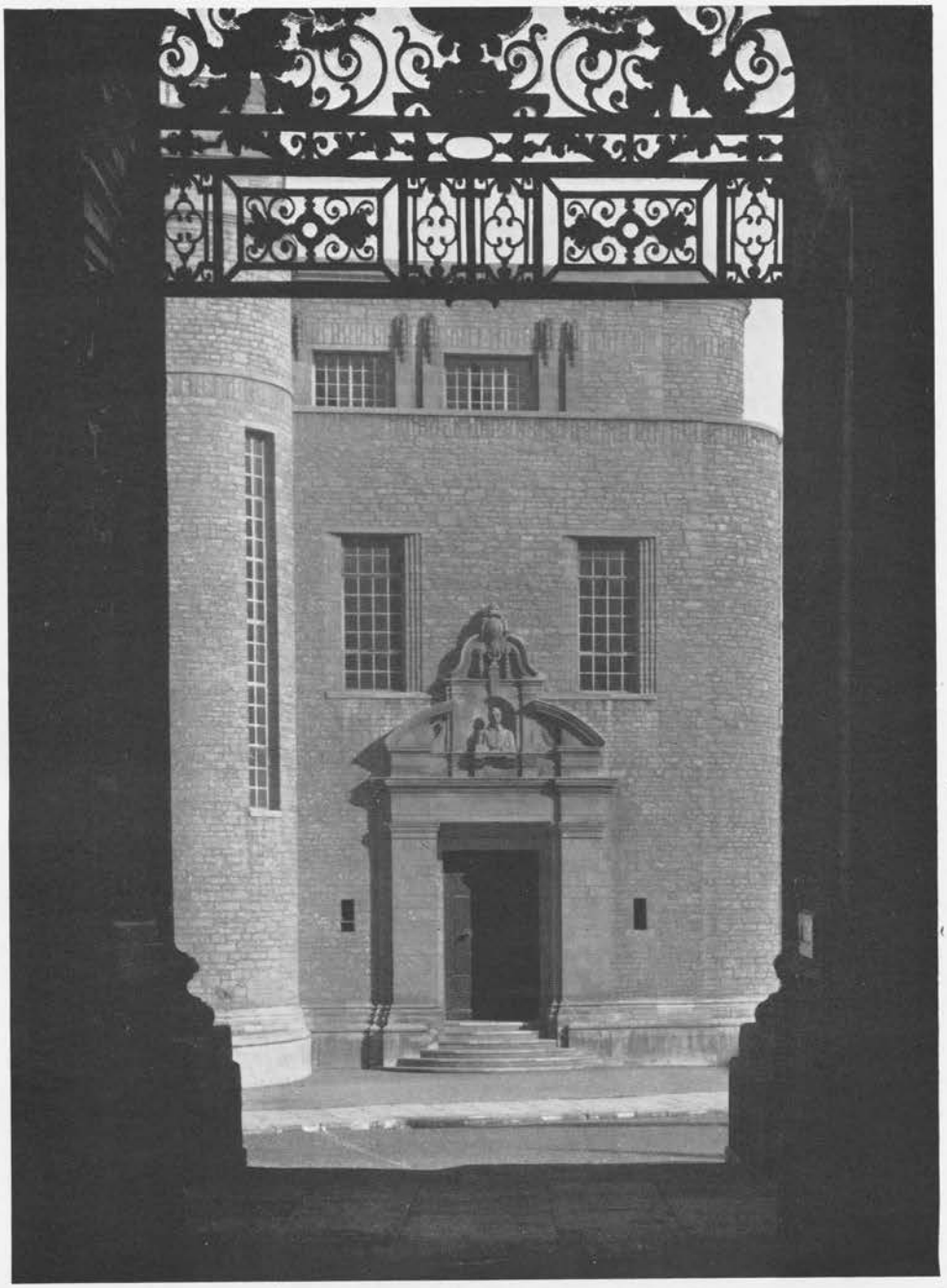
The ROYAL PARTY, *the* CHANCELLOR, LADY HALIFAX, *the* VICE-CHANCELLOR, *the* ARCHITECT, *and the* LIBRARIAN *will take their places on the dais in the Reading Room at* 3.10 *p.m.*

The VICE-CHANCELLOR *as Chairman of the Curators of the Bodleian Library will ask* HIS MAJESTY *to declare the New Library open*

SPEECH *by* HIS MAJESTY THE KING

THEIR MAJESTIES *will then be invited to make a tour of the New Library*

GUESTS *will remain in their places until the* ROYAL PARTY *has left the Reading Room. Those who wish to visit the Exhibition of Books and Manuscripts arranged for the occasion of the Royal Visit should remain in the Reading Room until the* ROYAL PARTY *leaves the building about* 3.45 *p.m.*



CUSTODIBUS PECUNIAE EX MANDATO IOANNIS DAVISON ROCKEFELLER
COMMUNI HOMINUM BONO DEDICATAE · SIMUL ET CETERIS QUORUM
MUNIFICENTIA HOC AEDIFICIUM FELICITER EXSTRUCTUM EST · GRATA
MEMORIA BIBLIOTHECAE BODLEIANAE CURATORES · A. S. MCMXL

THE BROAD STREET ENTRANCE FROM THE CLARENDON BUILDING

AND THE COMMEMORATIVE INSCRIPTION ON THE NORTHERN WALL OF THE ENTRANCE HALL

THE NEW LIBRARY

SHOWING THE UPPER FLOORS OF THE CENTRAL BOOK-STACK

HISTORY OF BODLEIAN EXTENSION

by SIR EDMUND CRASTER

BODLEY'S LIBRARIAN 1931–1945

THE ANNALS OF THE BODLEIAN LIBRARY date back to 1602, when Sir Thomas Bodley restored that fifteenth-century chamber which had housed an earlier University Library collection dispersed by the reforming zeal of Edward VI's commissioners. It has more enduring ties with the historic building in which it is enshrined than any other library save the Biblioteca Apostolica of the Vatican. Little wonder that attempts to supersede it by some entirely new construction on modern lines have met with successful resistance. 'To abandon it', said a recent Library Commission, 'would indeed be a "pillage of man's ancient heart".' Yet how to meet the needs of an ever-growing library on a site which lent itself so unreadily to expansion? Therein has always lain the crux of the problem.

The whole history of the Library may be said to be a record of extension. Its founder was himself alive to the need for providing growth space. Even at the outset the books collected by him and by his friends filled the old library room which he had refurnished and which bears Duke Humphrey's name. Before he died he had added to it a new eastern wing, the famous Arts End. This fronts a quadrangle of which the remaining three sides are occupied by the Old Schools, a building already projected when Sir Thomas died. Because he foresaw, to quote his own words, 'that in the process of time there must of necessity be very great

want of conveyance and stowage for books by reason of the endless multitude of those that are present there and like hereafter to be continually bought and brought in', he provided funds by his will for building an upper story or second floor to the Schools, with the object of providing 'a very large supplement for stowage of books'. Yet even he could not have anticipated the vast output of the modern press, a large part of which he would in any event have rejected contemptuously as 'baggage books'.

Under the Commonwealth the addition of Selden End as a western wing to Duke Humphrey's Library completed what is now known as the Old Reading-Room and sufficed to meet library needs for close upon a hundred and fifty years. When other contrivances were exhausted, the Bodleian proceeded, as did the similarly placed libraries of the Vatican and of Cambridge University, to encroach upon adjoining chambers. In 1789 the School of Anatomy and Medicine, on the first floor of the south range of the Schools quadrangle, was taken over as 'Auctarium Bibliothecae Bodleianae' and converted into a bookstore for manuscripts, incunabula, and *editiones principes*. To find room for the subsequently acquired libraries of Richard Gough, David Oppenheimer, and Francis Douce, and for other famous collections, one School after another was absorbed, subdivided by partition walls, and shelved from floor to ceiling. By the beginning of the Victorian era all the Schools on the first floor had been annexed; only those on the ground level continued to serve their original function.

Although book storage was increased, it was long before any addition was made to reading accommodation. Bodley continued to be the privileged sanctum of scholars; no junior member of the University stepped within its ancient walls. But academic education received a great impetus during the second quarter of the nineteenth century, and the results soon showed

themselves in increased use of libraries. On the south side of the Old Schools quadrangle lies Radcliffe Square, and in its centre the noble rotunda, named the Radcliffe Camera, which James Gibbs completed in 1749 to hold a library devised by Dr. John Radcliffe. In 1860 the trustees of Dr. Radcliffe's will transferred all works on natural sciences to premises in the newly erected University Museum and handed over the use of the Camera to the Bodleian Curators. Its upper story was made a general reading-room and was later furnished with a select library of text-books. The outer arches of its vaulted undercroft were now glazed, and what had been an open loggia became an additional book-store.

With the completion of the new Examination Schools in 1882 the ground floor rooms of the Old Schools quadrangle were released for library purposes and rapidly filled. The contents of the Library were growing at an ever-increasing rate. Between the years 1822 and 1888 the number of its books mounted from 160,000 to 440,000. By 1915 it had topped the million mark. To store this influx the Library authorities took over the basements of two neighbouring University buildings—the Sheldonian Theatre and the Old Ashmolean Museum—as well as vaults beneath the Examination Schools. When existing cellarage was exhausted, an underground book-store, consisting of two decks designed for metal rolling book-cases, was prepared during the years 1909–1912 in Radcliffe Square, between the Camera and the Bodleian building.

The new book-store was the first planned addition to the Library that had been made since the middle of the seventeenth century, all the buildings taken over in the intervening years having been designed to serve other purposes. It was the first assertion of the principle, since generally accepted, that library stacks might rely entirely upon artificial lighting and ventilation and be independent of sunlight and the air of heaven. The

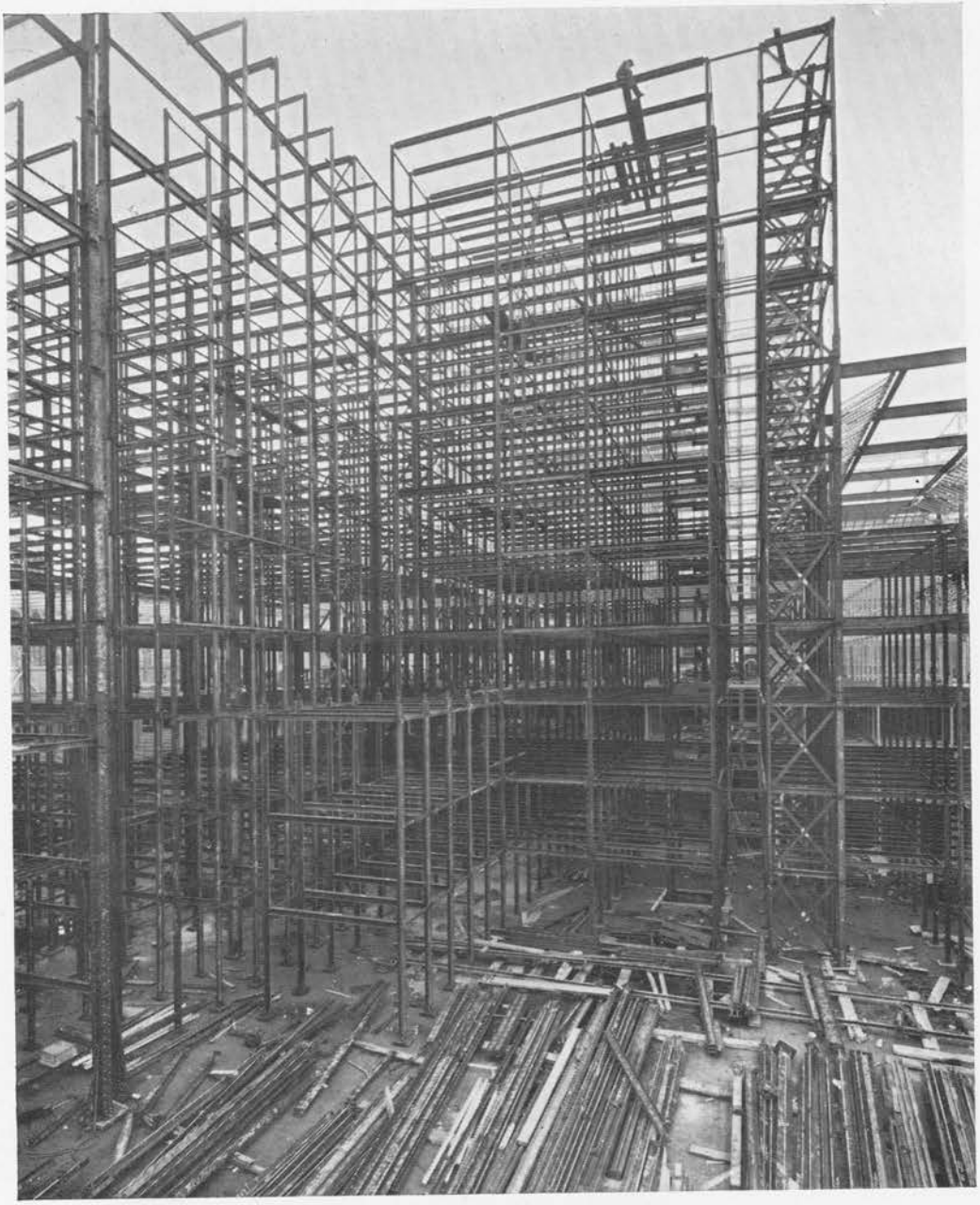
installation of rolling cases on the upper deck was an extension of an earlier experiment made in the Old Ashmolean basement in the solid packing of books without intervening gangways, but the relatively high cost of these cases was one of the reasons why they were not subsequently introduced on the lower deck. The period for which its makers hoped that the new stack would give shelf space for accessions was thereby shortened. In 1925 Bodley's Librarian announced that all existing book space would be filled up in ten years' time.

Meanwhile, the need for more reading-rooms had also become again apparent. In 1907 the northern half of the Picture Gallery was fitted up as a general reading-room and shelved with a selection of learned periodicals. Special reading-rooms for Law and for English were created in 1923 and 1929 respectively, the former in the Examination Schools, the latter in the Picture Gallery. The absorption of various specialist libraries into the Bodleian system showed the same tendency in another form. In 1927 the Radcliffe Trustees transferred to the Bodleian Curators the administration of the Radcliffe Science Library which, after having been lodged for a time in the University Museum, now occupied a library building of its own. In the same year the Library of the Indian Institute was brought under Bodleian management. Two years later, the trustees of the will of Cecil Rhodes completed the construction of Rhodes House and placed in it a library of American and Colonial history composed in part of works which they themselves had purchased, in part of books transferred from Bodley. Thus in three years the Bodleian extended its authority over three dependent libraries, each one of which came to be administered by Bodley's Librarian under the aegis of an Advisory Committee.

At the beginning of 1930 the Library position was as follows. Book space was within five years of exhaustion, and there was as yet no agreement how further space should be provided,

THE SITE WHEN CLEARED IN 1938

drawn by SIR MUIRHEAD BONE



THE STEEL FRAMEWORK

(from a photograph by the President of Trinity)

for there were some who wanted a new book-stack and others who demanded a new library. Opinion in the University was in the main averse to abandoning a historic building in which Bodley's Library had had its home for more than three hundred years; but there was also a feeling, which was widely shared, that more storage space was not enough. Specialist reading-rooms had been tried and were winning favour. There was a growing demand for direct access to books on open shelves. There were many who thought that more might be made of the Library as a centre for academic study. A movement for library reform produced in March 1930 the appointment of a Commission 'to visit modern University Libraries in Europe and America, to report to the University upon the organisation, planning, equipment, and methods of administration of such libraries, and generally to advise the University upon the basis of their investigations as to the best method of securing such library provision at Oxford as shall be abreast of modern requirements'.

The Commission reported within twelve months of its appointment and, by a large majority, put forward a number of recommendations, of which the chief were the retention of the old Library buildings and the construction of a new stack. For some years past the urgent need for more storage space had been obvious, but plans put forward had been limited to addition to existing stacks. The Commission commented adversely upon the dispersion of store-rooms, and stated roundly that 'the inconvenience and congestion of the Bodleian book-stores have no parallel in any of the libraries we have visited'. They advised that all except the underground book-store should be evacuated, and that storage should be concentrated in a new building. This should be of such a size as to be capable of holding about five million books, and provide for intake—if that should remain constant—for the next two hundred years. The rooms round the Schools quadrangle would be thereby freed from stack, and

would be converted, in the main, into an enlarged range of specialist reading-rooms, shelved with about 100,000 of the books most in demand.

Radical as was this programme, it did not satisfy those who wished to see a fuller and more varied use made of the new building. Compromise was effected. In May 1931, three months after their issue, the University adopted *in toto* the recommendations contained in the majority report of the Commission together with certain resolutions based upon the minority proposals. The chief of these was that, in the erection of the new library, the opportunity should be seized for 'the making of experiments in library administration, including the use of carrels and research rooms adjoining appropriate sections of the stacks'.

Although a thorough-going scheme for library extension was thus agreed upon, means had still to be found for putting it into effect. Its total cost, including provision of a maintenance fund, was estimated at little short of a million pounds. The University was far from being in a position to raise that sum. But a year later, in May 1932, the Rockefeller Foundation made the generous offer to contribute three-fifths of the estimated cost provided that the University found the remaining two-fifths within a stated period. The offer was accepted, a private appeal was issued, and, although the University had been given four and a half years in which to find the money, the sum required was raised within a single year and the condition set out in the Rockefeller offer was thereby fulfilled. Liability undertaken by the University Chest to find the sum needed for additional endowment was subsequently met as the result of a public appeal for funds.

Events had moved fast in 1930–1933, and there was need they should. The Library was full, almost to saturation point. A scheme calculated to meet the needs of two centuries had been approved and financed, but existing space was barely sufficient

for another two years. A vast new stack could not be built in that short time. It had therefore already been decided to carry out one of the minor recommendations of the Commission, an extension of the Radcliffe Science Library by the addition of reading-rooms and stack space that would double existing accommodation. Plans for this enterprise were prepared by Mr. Hubert Worthington, and work had actually been begun before the Rockefeller gift became absolute. The extension was completed and formally opened in November 1934, and transference of the whole of the science sections in the Bodleian book-stacks came just in time to give the necessary relief.

Meanwhile, in June 1934, a start had been made upon the main Extension project—the construction of a new book-store—by the appointment of Sir Giles Gilbert Scott as architect. During the next three months the Librarian visited various great Continental libraries, accompanied by the architect, and made a more extensive tour of inspection of libraries in the United States and Canada. Upon the completion of these tours, a Sub-Committee appointed for the purpose set out to prepare, in the light of the information obtained, a specification upon which the plans for the new building should be made. The result of their labours, a ten-page privately printed pamphlet entitled 'Instructions to the Architect', received approval in June 1935.

The site upon which the new building should be placed had been settled, in effect, by the University as far back as 1929. It lay to the north of the Old Library but separated from it by an open court, the University offices, and the width of Broad Street. Most of the houses in this area were already University property; the remainder had to be acquired and certain leases to expire or to be bought out before the buildings could be demolished. The site was bounded on two sides by main thoroughfares—Broad Street and Parks Road—and on the two

other sides by the gardens and Library of Trinity College. It therefore gave no opportunity for expansion, but this defect was in part remedied by the reservation of ground outside Oxford on which a repository might subsequently be erected for the storage of little-wanted books.

The main problem, which had hardly been faced by the Commission, was how to get on this restricted site a building capable of holding about five million books. Building regulations and aesthetic considerations combined to rule out a lofty tower. One type of plan and one alone was found to satisfy all requirements. In the instructions to the architect the building to be erected is defined as 'a solid block with a book-stack in the centre, and a basement devoted to book-stack and other suitable uses (e.g. machinery) over almost the whole area of the site beneath'. The Commission had contemplated screening the stack on the Broad Street frontage by a building which should contain rooms for staff and other purposes. But more space was needed for Library experiments in order to implement the University's supplementary resolutions. Consequently the instructions given to the architect prescribed a range of rooms round all four sides of the stack. A compact central stack, surrounded by external rooms and so dependent on electric power for its lighting and ventilation, was a departure from previous ideas, but the conception was not entirely a novelty, for the new Library of Columbia University in New York, then just completed, and the annexe, at that time only commenced, to the Library of Congress at Washington, have the same general plan. Its adoption allowed Sir Giles Scott to achieve architectural unity and a harmonious design.

Eighteen months were required for the production of architect's plans and working drawings and for the placing of a contract, with the result that work upon the new building was begun in December 1936. In the following summer Queen Mary

laid the foundation-stone. When war broke out the building was nearing its completion, and, although work was unavoidably slowed down, it was finished, apart from a few minor fittings, in the course of 1940. Its formal opening, originally fixed for 14th June 1940, has been unavoidably postponed till now.

The New Library, as it is justifiably termed, is a square block with frontages 41 feet in height and a central block which rises 78 feet above ground level. Each frontage has three stories. The western range contains staff quarters, including a bindery; rooms for reception, accessioning, and cataloguing of books; a canteen and staff common room; and links up with a porter's lodge on Broad Street. A large reading-room with seats for 80 readers occupies the whole of the first floor on the north side of the building and is designed to serve those modern studies which most depend on stack access. A gallery separates the reading-room from the stack and will house a copy of the catalogue. This gallery leads at its western end directly to the quarters of the cataloguing staff. Above the reading-room are rooms for photography and for the reading of micro-films. Two exhibition rooms and a committee room fill the ground and first-floor levels of the southern range. On the east front a room in the centre of the first floor is fitted up for consultation of maps. The remaining rooms on all four fronts are allotted to research or are held in reserve.

The central stack consists of eleven decks of which three are below ground level and extend under the whole site. Its six middle decks are surrounded by the three floors of the outer range, of which each floor could be converted, if so required, into a two-storied book-stack. The two topmost decks of the stack rise above the rest of the building and consequently possess natural lighting. Each deck is a little over 7 feet in height. With the exception of the two lowest, which will not be brought into permanent use for some years to come, the decks are fitted

throughout with ranges of steel stack, broken by gangways and having alleys 2 feet 6 inches wide between each range. Lifts and internal staircases provide communications between the decks. Plenum and extract ventilation is provided throughout the stack, and the whole building is heated by water provided from a thermal storage plant in the basement.

Readers will be admitted to work in the reading-room, in research rooms, or in the stack itself. The privilege of using research rooms will be given to persons engaged in co-operative research, such as the carrying out of a specified piece of work by a Professor or senior member of the University in collaboration with colleagues or pupils with a view to publication; to individual scholars of any Faculty engaged in protracted research, and to advanced classes for the study of manuscripts and other material not easily accessible elsewhere. Stack access is to be granted to members of University Faculties, to persons recommended by the Boards of Faculties, and to other persons at the Librarian's discretion. On the upper decks of the stack twenty-four carrels have been provided and there is room for a hundred more. These will be allotted to readers who require to work for a prolonged period in proximity to certain classes of books. Fifty-two movable desks and chairs have been distributed throughout the stack and are available for readers unprovided with carrels.

By way of providing a rapid book-service between the stack and the 'enlarged range of reading-rooms' which remain to be fitted out in the Old Library in accordance with the Commission's proposals, a tunnel has been driven under Broad Street and a mechanical conveyor installed. There is a receiving and dispatch station on every floor, so that books can be dispatched or returned by automatic action to or from any level of either building. A pneumatic tube system has been similarly introduced for messages and book orders and has been extended to the Camera.

Parallels to many of the features of the Bodleian Extension Scheme may be found in the libraries of the United States. Like the Johns Hopkins Library at Baltimore it aims at giving a large number of reading-rooms for special studies and, within limits, at providing opportunity for reading in proximity to related sections of the book-stack. The general design of the New Library, as has already been pointed out, presents resemblances to the Library of Columbia University and to the annexe to the Library of Congress. But in the main the scheme is individual. Founded on compromise, it is an experiment in working a new library building into an old historic framework.

(Adapted from *The Bodleian Library Extension Scheme*, by H. H. E. Craster, in the *Bulletin of the John Rylands Library*, vol. 25, 1941)

THE NEW LIBRARY BUILDING

by SIR GILES GILBERT SCOTT
O.M., R.A.

THE NEW LIBRARY BUILDING is primarily a book-store, and consists of a vast central stack with rooms ranged round the outside. These outer rooms are so constructed that each, if necessary, can be converted into two floors of book-stack. The designing, planning, and construction of rooms to serve two entirely different purposes presents some difficulties if the requirements of both purposes are to be satisfactorily met. This, however, was a small matter; the main problem was to provide a vast book-store on a limited site in a building that for aesthetic reasons had to be kept low enough to conform with the general height of the neighbouring buildings. These requirements could only be met by providing a large book storage below ground level and adopting a central block of artificially lighted book-stacks.

The plan therefore differs fundamentally from that adopted at Cambridge, where natural lighting for the book-stacks was required, necessitating the arrangement of stacks around open courts, a type of plan requiring a larger site than was available at Oxford.

In spite, however, of the underground storage and the type of plan adopted it was still necessary to carry up a portion of the superstructure to a considerable height, but this has been confined to the centre of the building, while the outer portions forming the road frontages have been restricted to a height of only three stories, conforming to the general height of the

THE NEW LIBRARY

THE ENTRANCE HALL

adjoining buildings. By this means the building does not appear overwhelmingly high, although a considerable portion of it contains eight stories above ground.

The book-stack itself, which forms the core of the building, is equipped with metal book-cases supported by an elaborate system of steel construction, the floors being of reinforced concrete only $3\frac{3}{4}''$ thick. The apparent simplicity of these stacks with their flush ceilings and absence of beams is deceptive, but it proved no easy task to achieve this apparent simplicity.

The book-cases also, though simple in appearance, are designed to conceal the structural steelwork necessary to support the enormous weight of the closely packed books. These book-cases embody some original features and, among other details, the method of fixing the movable shelves deserves notice. In no other feature of modern book-stack design is there so much variation amongst manufacturers as in the method of fixing movable shelves, and the Bodleian provides still another ingenious solution.

The lighting of the gangways between the book-cases should also be noticed, with the specially designed shades to throw the light on the books while screening it from the ends of the gangways.

A peculiar feature of this Library is that the books are stacked in the new building while the reading-rooms are mostly situated in the Old Library on the other side of the road; this arrangement necessitated the introduction of a book conveyor. This ingenious mechanical equipment deserves special notice as it enables books to be conveyed to and from all floors in both buildings. The journey is one of considerable length: a book is placed in the conveyor at any one of the floors in the stack, it descends to the basement, is conveyed through the tunnel under the road and ascends in the Old Library, where it is automatically discharged at the correct floor level. The ghost of

Bodley must gaze in astonishment at this mechanical equipment in his Library, and one is tempted to wonder whether he views it with consternation or delight.

Books are very sensitive to atmospheric conditions, and the modern central heating required for human comfort can cause much damage to books and their bindings. It is therefore necessary to instal not only heating but a system of air conditioning in order to maintain the correct humidity.

An elaborate system of heating, ventilation, and air conditioning has been installed but is hardly visible to the casual observer, though the size of the heating chamber and its intricate mechanical equipment gives some idea of the importance of this section of the work. The system of air conditioning relies for its effectiveness upon the windows being kept closed, as the introduction of outside air upsets the carefully adjusted flow of conditioned air.

The metalwork of the windows, which for appearance sake was required to be light in colour, is of anodized aluminium alloy which has been selected in order to dispense with the necessity for periodical painting, an item of considerable expense in a building of this size.

As the new Library is primarily a book-store, and many of the rooms are designed to be convertible into book-stacks, there is not much scope for interior architectural effects, the large Reading Room and Catalogue Room on the First Floor, together with the Entrance Halls on the Ground Floor, forming the only features of architectural interest inside.

The entrance halls and the corridors have dadoes of Taynton stone—a light brown stone from an Oxfordshire quarry—above which is rough plaster. Subdued natural lighting reaches the corridors, through the rooms in the outer range, by means of fanlights. All the outer rooms are plainly decorated to provide a background to the hardwood book-cases and furniture,

the walls being roughly plastered and finished greyish white. Relief is supplied by a simple beam treatment in the ceilings designed to support the book-cases on the floor above, should it be decided to convert these rooms into book-stacks. The Reading Room has a similar ceiling decorated entirely in inlaid woods, while the walls are lined with book-cases in Sapele mahogany. All the floors are of rubber. The main staircases, placed at the four corners of the building, have treads and risers faced with cork and balustrades of metal painted with gilt-bronze paint.

The exterior provided an interesting problem, and consideration for the size and character of adjacent buildings largely influenced the design. It is frankly transitional in character, showing modern influences upon a traditional background representing an evolutionary change not out of keeping with general cultural development in an old university.

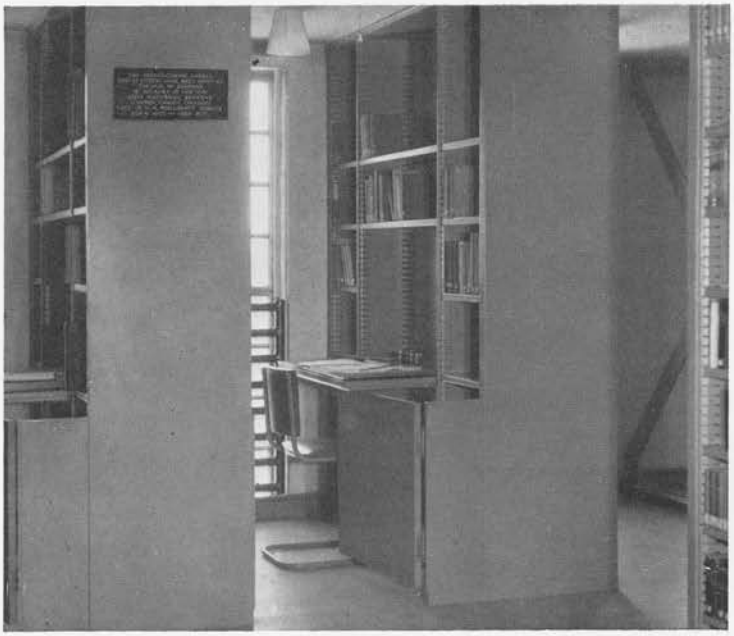
The external walls are of Bladon stone quarried a few miles from Oxford, with Clipsham dressings.

The construction of all modern buildings is largely dependent upon team work, and this is especially true of this new Library, involving, as it does, so much complex engineering work and technical equipment.

I have only touched upon a few of its main features and have purposely refrained from mentioning names, much as I have been tempted to do so, for where all deserve mention it would be invidious to mention only a few, but a list of those who have contributed to the building of the Library is appended and to them all goes the credit and my grateful thanks for their skill, fine work, and craftsmanship.

Architect	SIR GILES GILBERT SCOTT, O.M., R.A.
Quantity Surveyors	MESSRS. FLOWER & WELLS
Consulting Engineer	BERNARD GREEN, ESQ., M.INST.C.E.
Consulting Electrical Engineers	MESSRS. DOLBY & WILLIAMSON
General Contractors	MESSRS. BENFIELD & LOXLEY, LTD.
Clerk of the Works	MR. P. J. LUXTON
SUB-CONTRACTORS	
Structural steelwork	REDPATH BROWN & CO., LTD.
Reinforced concrete, precast concrete floors	CONCRETE, LTD.
Damp-courses and asphalt	RAGUSA ASPHALT PAVING CO., LTD.
Waterproofing materials	SIKA-FRANCOIS, LTD.
Casements and window furniture	JAMES GIBBONS, LTD.
Fireproof doors	JOHN TANN, LTD.
Metal stair balustrades, gates, &c.	POTTER RAX GATE CO., LTD.
Lifts	EXPRESS LIFT CO., LTD.
Electrical lighting, telephones, clocks, and bells	G. N. HADEN & SONS, LTD.
Electric light fittings	FALK STADELMANN & CO., LTD.
Electric fires	BRATT COLBRAN, LTD.
Loud-speaker installation	RELIANCE TELEPHONE CO., LTD.
Central heating, ventilation, hot water, fire hydrants, and sprinklers	FRED G. ALDEN, LTD.
	G. N. HADEN & SONS, LTD.
Bull silent motors	BULL MOTORS BRANCH OF E. R. & F. TURNER, LTD.
Sanitary fittings	LEEDS FIRECLAY CO., LTD.
Toplights	HAYWARDS, LTD.
Plastering	TROLLOPE & SONS (DECORATORS), LTD.
Glazement internal wall treatment	HOYLE, ROBSON, BARNET & CO., LTD.
Precast partitions	CAMBRIDGE ARTIFICIAL STONE CO.
Joinery furniture and office fittings	GREEN & VARDY, LTD.
Book-stacking and metal equipment	RONEO, LTD.
Door furniture	N. F. RAMSAY & CO., LTD.
Ornamental bronzework and stone carving	H. H. MARTYN & CO., LTD.
Marblework	J. WHITEHEAD & SONS, LTD.

THE CATALOGUE GALLERY



CARRELS ON THE UPPER FLOORS OF THE STACK

A PORTION OF THE STACK

Vacuum cleaning plant and pneumatic tubes	LAMSON ENGINEERING CO., LTD.
Fumigating plant	W. EDWARDS & CO. (LONDON), LTD.
Sewage-sump pumps	RALPH E. EMART, LTD.
Book conveyor	SOVEX, LTD.
Wood-block flooring	ACME FLOORING & PAVING CO. (1904), LTD.
Rubber flooring	ST. HELENS CABLE & RUBBER CO., LTD.
Cork treads and landings to staircases	KORKOID DECORATIVE FLOORS
Linoleum	INLAID RUBOLEUM TILE CO., LTD.
Sunblinds	ACCORDO BLINDS, LTD.
Blinds	J. AVERY & CO.
Curtains	WATTS & CO., LTD.
Lightning conductors	J. W. GRAY & SON, LTD.