THE NEW INSTITUTE OF ANATOMY AT UNIVERSITY COLLEGE, LONDON.

BY

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In a previous article I gave an account of the circumstances in which the Rockefeller Foundation endowed the Department of Anatomy and provided for the extension of the Department of Physiology and also explained the general ideas that inspired the design for the new building. I propose now to give a brief sketch of the measures that have been adopted to give expression to these principles. Of the five floors in the building the lowest is devoted mainly to practical work in anatomy—that is, dissecting and radiography; the next floor to teaching accommodation and museums; the third and fourth to research in anatomy, histology, and embryology; and the top floor to teaching in microscopic anatomy.

The building, designed by Professor F. M. Simpson, F.R.I.B.A., faces Gower Street, and has a frontage of 154 ft. exclusive of the end gateway, which gives access to the south quadrangle. At the back it joins the physiology building. It consists of five floors and a sub-basement in addition, which contains the heating chambers, coke cellars, tank and specimen rooms. The students' entrance is in the south quadrangle at the basement level. On the same level are the large top-lighted dissecting room (55 ft. by 52 ft.), with prosectorium and annexe, the x-ray rooms, injection room, workshop, and cloak rooms for men and women students.

The rooms for the x-ray examination of the living subject and for the study of x-ray plates are close to the dissecting room, so that the students may be able, when dissecting any region of the body, to correlate the x-ray appearance with what they see and handle in their dissections. The x-ray equipment, the chief features of which are mentioned later in this account, has been superintended by Major Charles E. S. Phillips, O.B.E., who has spared no trouble in devising the best possible equipment for teaching anatomy by radiography.

The main entrance from Gower Street is at the ground floor level, and leads by an oak-panelled vestibule to the hall and central staircase which serves all floors. On the ground floor are the museum (52 ft. by 50 ft.) and preparation room, lecture theatre (48 ft. by 40 ft.), fitted with the latest Zeiss epidiascope, demonstration theatre, and rooms set apart for teaching and research in anthropology.

On the first floor in front are the Medical Sciences Library and periodical room, oak panelled, together 66 ft. long by 25 ft. wide, with book-store adjoining, the room for the lecturer in the history of medicine, the private room and laboratory for the professor of anatomy, dean's office, a series of research rooms, including the laboratory for comparative neurology. In the latter will be housed a collection of neurological preparations, the nucleus of which consists of sections made by the late Dr. Page May and Sir Victor Horsley, and others presented by the Central Institute for Brain Research in Amsterdam at the instance of Dr. Ariens Kappers.

On the second floor are located the research laboratories for the professor of embryology; and a lecture room seated for about ninety students, with apparatus for projection of histological preparations. In addition, on this floor are situated the advanced laboratory for histology and embryology, a small chemical laboratory, the laboratory for research in experimental embryology, and the microphotographic and dark rooms, whilst two rooms provide accommodation for the collections of preserved material and microscopical preparations. These rooms are well equipped for all kinds of photographic work, both macroscopic and microscopic. Professor J. P. Hill has made a very rich collection of mammalian embryos and aims at making as complete a series as possible of human embryos. For research in Comparative Embryology the Institute offers unique opportunities.

The main students' laboratory for microscopical anatomy (52 ft. by 50 ft.) is situated on the third floor. It extends across the width of the building and is well lighted by two continuous skylights facing north, as well as by windows facing the south quadrangle on the one side and Gower Street on the other. The laboratory affords accommodation for about ninety students, each student being allocated a

working place provided with a cupboard, water, gas, and electric light. Adjacent to the laboratory are the preparation room, the research laboratory for the assistant in histology, the modelling and aquarium rooms. Accommodation for the keeping of live animals is also provided on the third floor. Provision has been made of facilities for experimental embryology and for the study of degeneration effects in the nervous system.

A room (32 ft. by 24 ft.) is set aside for the cinematographic study of animal movements. For this purpose there is to be installed a cinematographic apparatus (so-

called ultra-cinema) designed by M. Nagues of the Marey Institute of Paris, by means of which it is possible to take up to 300 photographs a second of moving objects. This is perhaps the best method for the analysis of reflex movements and muscular adjustments such as those of posture. The film being projected at a rate of about 16 to 18 a second the whole movement is observed slowed ten to fifteen times, so that it will be possible to make out the different phases of which the movement is composed. Heavy electric leads are carried to this room so that brilliant illumination by arc or mercury lamps may be employed. In the summer months it will be possible to make use of direct sunlight, the flat roof being admirably adapted for the purpose of cinematography.

The x-ray department is equipped with the latest type of apparatus for radiography in all its medical branches. Facilities are provided for rapid work as well as for the study of movement and anatomical structure as revealed by the latest x-ray technique. The appliances include an arrangement specially designed to enable great sharpness of image to be obtained upon the photographic plate or film.

The power unit consists of a 10 kw. transformer x-ray set which supplies energy to the x-ray tubes, either when working from below or above the operating tables, or when used for fluoroscopy, and arrangements are made whereby the portable trolley control may be connected either at a position near the tables or at a separate wall plug adjacent

ELEVATION TO GOWER STREET.

FIRST FLOOR PLAN.

EXISTING INSTITUTE OF ANATOMY

GROUND FLOOR PLAN.

THIRD FLOOR PLAN.

SECOND FLOOR PLAN.

to the fluorescent screening stand at the far end of the room.

One of the x-ray operating tables is fitted with automatically moving plate carriers beneath the top, which itself is hinged so as to render the tube box and diaphragm mechanisms readily accessible. The other operating table is fitted with the Bucky-Potter grid, and is the second table of the kind that has come to this country from the United States. As well as a large screening apparatus there is a heavy type tube stand for general use, and a number of minor accessories. Apparatus for the special radiography of the head is also provided.

The high tension overhead leads are made of nickel-plated tubing of sufficient diameter to reduce the formation of corona to a minimum, and a high tension switch actuated by strings serves to connect the transformer terminals with the set of leads required for each apparatus as desired. The protection of all engaged in the work of the department has been carefully provided for, and stray radiation is prevented from entering adjacent rooms by a covering of lead six feet high upon the walls. The lead sheet, carefully lapped at the joints, is hidden beneath stout boarding which serves to absorb the soft component of any secondary radiation which may be produced from the lead by stray radiation. The floor is covered with rubber. An adjoining dark room and large viewing room together with a plate store complete the department. The installation has been carried out by Messrs. Watson and Sons (Electro-Medical) Ltd., London, who not only did the work of equipping the x-ray rooms but gave Major Phillips the benefit of their experience in designing x-ray apparatus.

The Rockefeller gift has also rendered it possible to effect certain much needed alterations and extensions in the department of biochemistry, pharmacology, and physiology. On the ground floor the general biochemical laboratory receives an extension behind the anatomy theatre, providing additional places for advanced students in biochemistry. The biochemical research laboratories are also enlarged by taking in the whole ground floor of the pharmacology building, providing in this way two additional research laboratories and a private room for the professor of biochemistry. In pharmacology further accommodation for research is procured by dividing the present pharmacology lecture theatre into two laboratories. The pharmacology lectures will be delivered in future in the physiology theatre.

This department receives also two extra laboratories on the second floor of the physiology building in compensation for the laboratories it gives up on the ground floor to biochemistry.

A large part of the first, second, and third floors of the building connecting the present Institute of Physiology with the Institute of Anatomy is used for increasing the accommodation for research in physiology. On the first floor three additional laboratories are provided for research as well as two rooms which will be used as a workshop. On the second floor two laboratories are provided adjoining the main students' laboratory, for the use of advanced students. There are in addition three other laboratories set apart for research. The third floor of this connecting block contains three rooms allocated to the Foulerton research professor, the caretaker's apartment, and the common rooms for the staff of all the departments in the building.

On the three upper floors there is free communication with the Institute of Physiology. From the basement a tunnel leads under Gower Street to connect with the medical school.

The Gower Street front is entirely in Portland stone; the back portions in Arlesley brick with stone dressings to match the existing physiology and pharmacology buildings. The floor of the dissecting room, annexe, and prosectorium is of white mosaic, and the walls of white glazed brick. On the corridors is a strip three feet wide of quarter-inch cork carpet, with margins of white terrazzo in basement, and of oak or pitch pine on other floors. A dado of terrazzo, with green panels and white frames, runs up the whole of the staircase and along the sides of the principal corridors. The floors of most of the working rooms are cement covered

with linoleum. The steps and landing of the staircase are oak on concrete with iron balustrade, and the museum, library, periodical room, and entrance vestibule from Gower Street have oak floors.

A passenger lift runs from the basement to the top of the building, serving all floors, and hand-power lifts are provided from the injection room down to the tank room, and from the tank room up to the annexe of the dissecting room. The whole of the building is steel-frame construction.

It is the unfortunate result of this new development that the department of anatomy becomes separated from that of zoology and comparative anatomy, with the work of which a very intimate association and co-operation have developed. But the hope is still entertained of reuniting these departments by further extension of the Institute of Medical Sciences along Gower Street. Thus a new department of zoology would be added to the new Institute of Anatomy. In this connexion it is interesting to remember that only four doors away from the new building is the house in which Charles Darwin began the compilation of the notebooks upon which *The Origin of Species* was based. It would be singularly appropriate to erect upon this site a building which would be at once a permanent memorial to the great Englishman who revealed to the world a new intellectual horizon and a home for those subjects—biology, anthropology, and psychology—which were directly stimulated by his work. Professor Richardson, of University College, has given immediate expression to this hope in a sketch now being exhibited at the Royal Academy.

Scotland.

THE ASSOCIATION OF PHYSICIANS IN EDINBURGH.

The annual meeting of the Association of Physicians of Great Britain and Ireland was held in Edinburgh on May 18th and 19th, under the presidency of Dr. Byrom Bramwell. The discussions took place in the physiology lecture theatre of the university, and various laboratories were visited. On the afternoon of each day cases of unusual interest were demonstrated in the medical out-patient department of the Royal Infirmary. A dinner was held on Friday evening in the hall of the Royal College of Physicians.

PRESENTATION OF PORTRAITS OF DR. BYROM BRAMWELL.

At a meeting of subscribers and friends, numbering some 200, held in the hall of the Royal College of Physicians of Edinburgh on May 19th, a portrait was presented to Dr. Byrom Bramwell. The portrait had been painted by Mr. David Alison, A.R.S.A., commissioned by over 250 of Dr. Byrom Bramwell's old students and friends. Dr. F. N. Kay Menzies, the honorary secretary and treasurer of the committee of subscribers, announced that as a much larger sum had been subscribed than was necessary for the original portrait, the committee was enabled to commission the artist to execute a replica, and hoped further to be able to issue photogravures at a later date to the subscribers. The original portrait was presented to Dr. Byrom Bramwell by Sir David Drummond, a former colleague in the Infirmary at Newcastle-on-Tyne. The replica was presented on behalf of the subscribers by Sir Humphry Rolleston, K.C.B., President of the Royal College of Physicians of London, to the Royal College of Physicians of Edinburgh, and was acknowledged by its president, Sir Robert Philip, who occupied the chair at the meeting.

LECTURE BY DUTCH PROFESSOR IN EDINBURGH.

Professor H. R. Kruyt, who occupies the chair of physical chemistry in the University of Utrecht, last week gave a lecture upon the electric charge of colloids in the medical chemistry department of the University of Edinburgh. Professor Sir James Walker presided over a large audience. After paying a tribute to the fundamental researches of the English school of colloid chemists from Graham, its founder, to the present time, Professor Kruyt took as his central idea the proposition that the electric charge is the most important property of colloids, whether suspensoid or