

# **The Rockefeller Institute for Medical Research : history, organization and equipment.**

## **Contributors**

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Royal College of Surgeons of England

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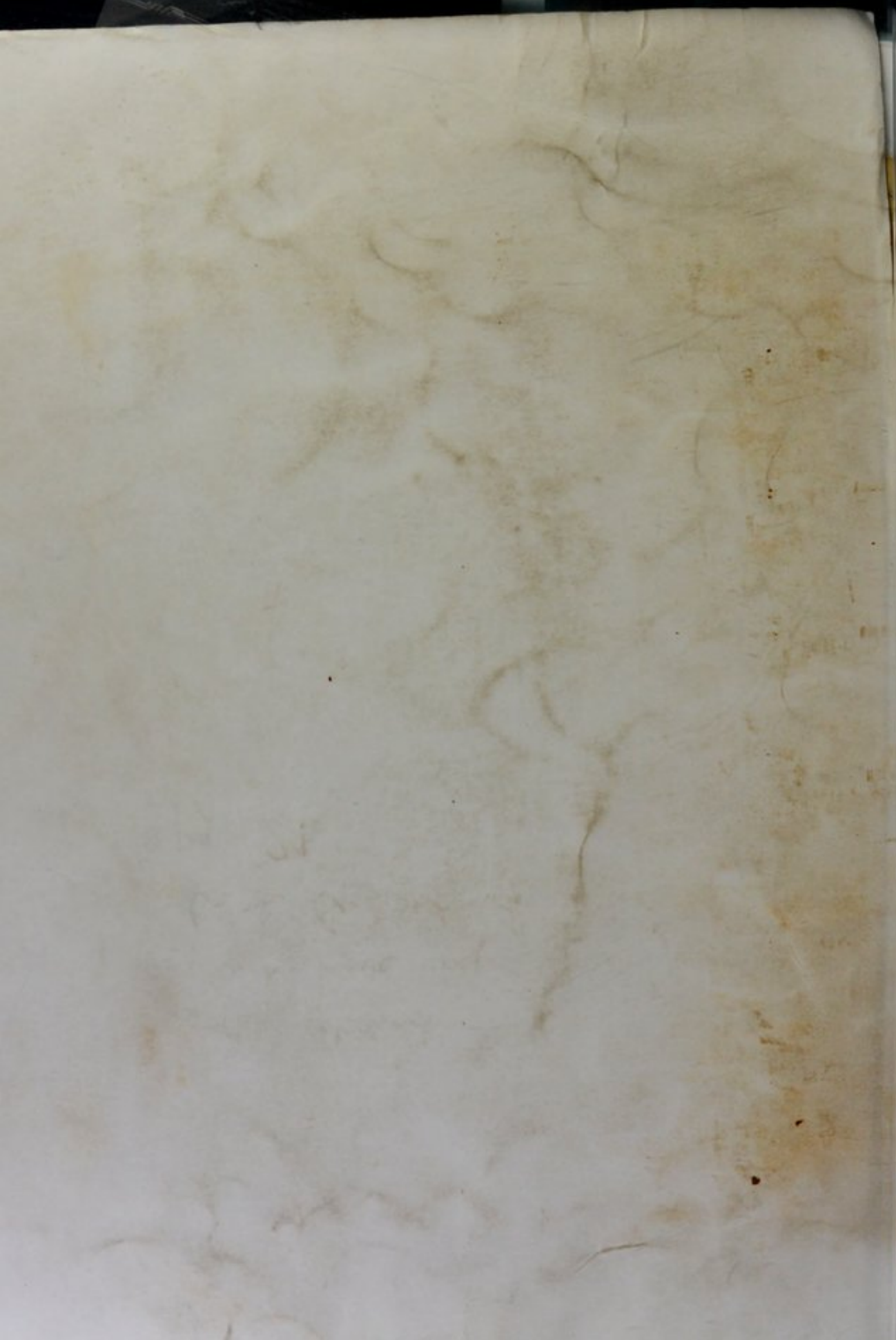
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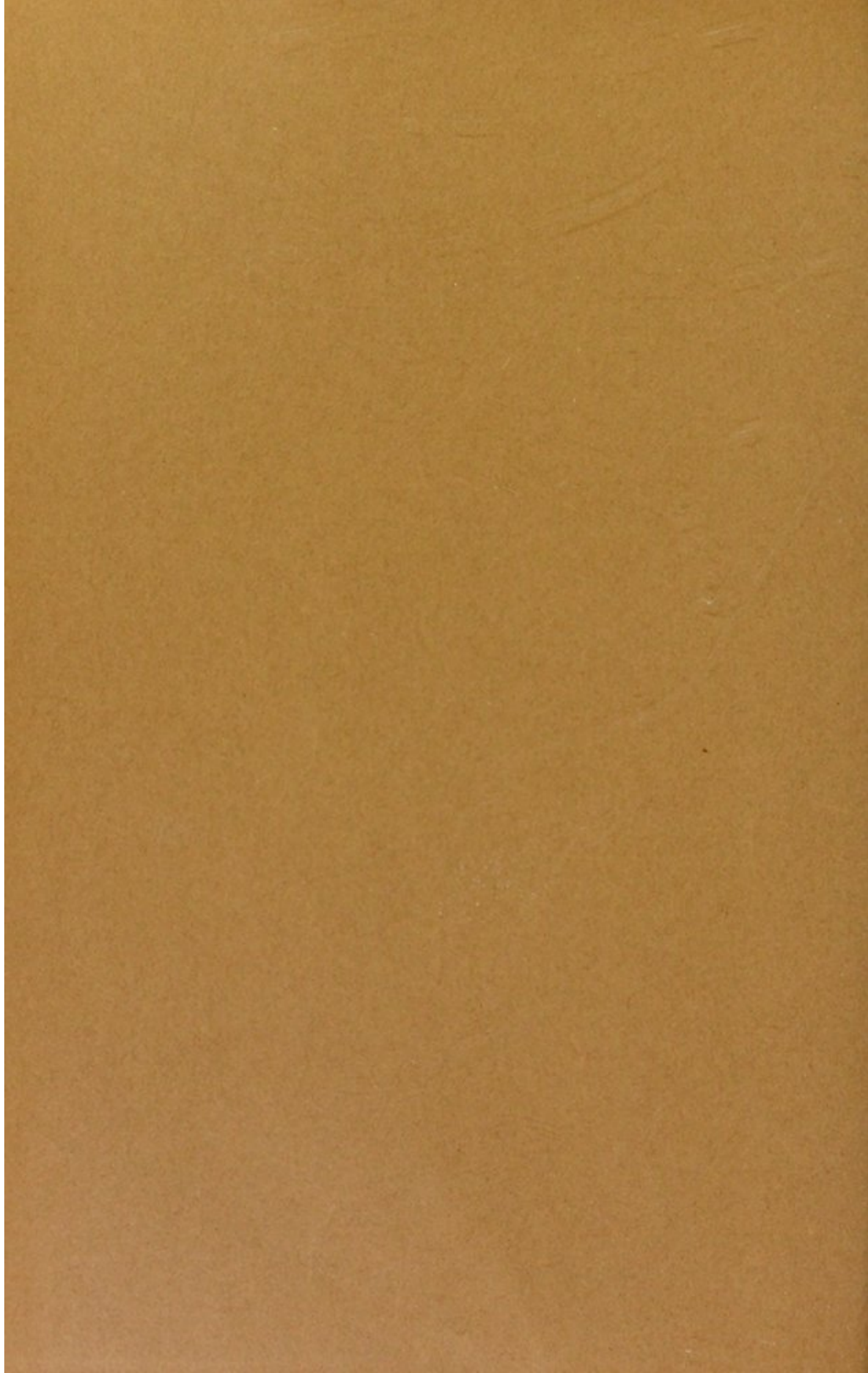
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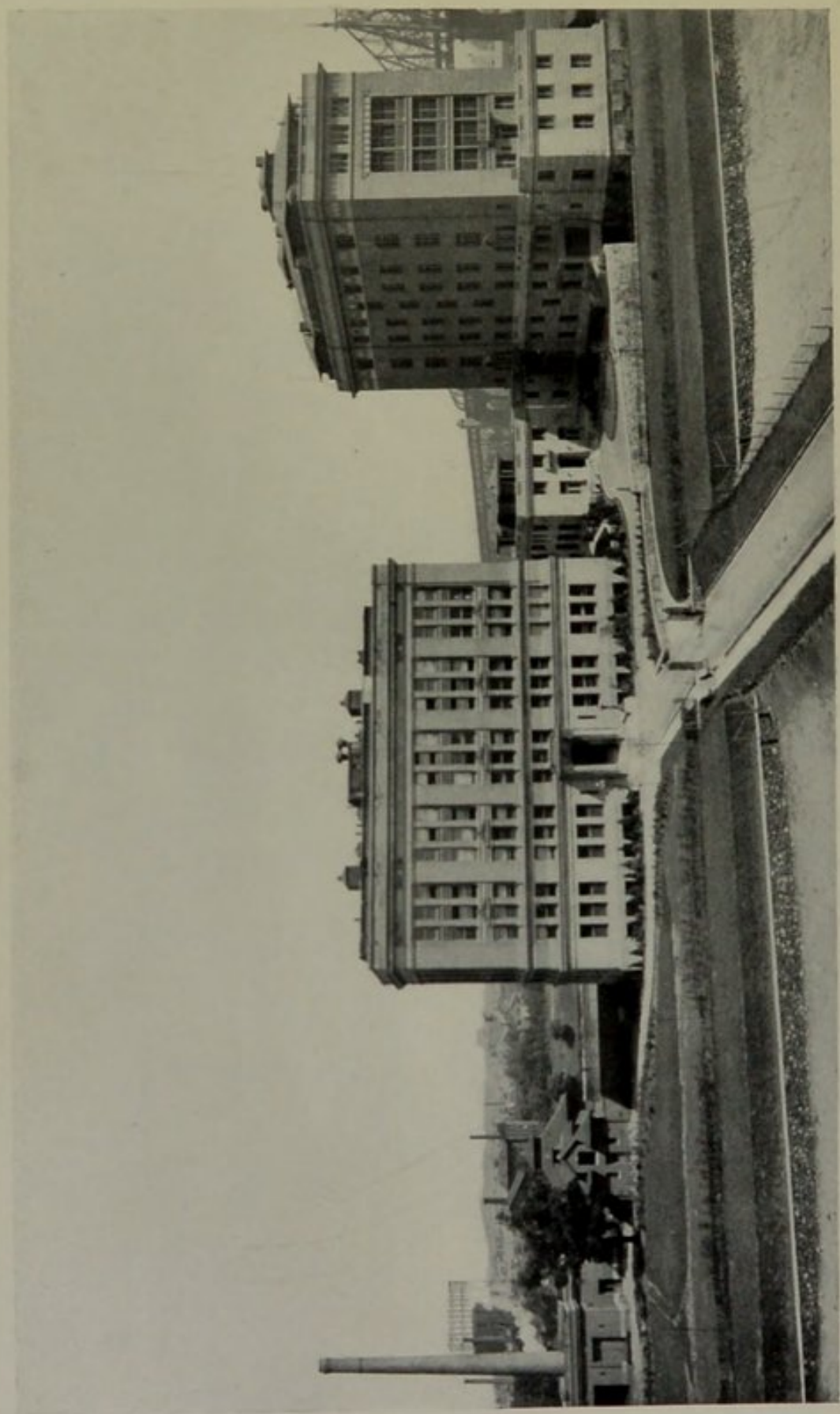


NEW YORK  
THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH  
1911











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## CORPORATION

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Term expires October, 1912.

STARR JOCELYN MURPHY, A.B., LL.B., *Secretary of the Corporation and of the Board*

SIMON FLEXNER, M.D., Sc.D., LL.D.

Term expires October, 1913.

JOHN DAVISON ROCKEFELLER, Jr., A.B.

Term expires October, 1914.

FREDERICK TAYLOR GATES, A.B., A.M., *President of the Corporation and Chairman of the Board*

WILLIAM HENRY WELCH, AB., M.D., LL.D.

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LOUIS GUERINEAU MYERS, *Treasurer of the Corporation*

### *Board of Scientific Directors*

Term expires October, 1912.

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THEODORE CALDWELL JANEWAY, Ph.B., M.D.

THEOBALD SMITH, Ph.B., A.M., M.D.

Term expires October, 1913.

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THEOPHIL MITCHELL PRUDDEN, S.B., M.D., LL.D., *Vice President of the Board*

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Term expires October, 1914.

SIMON FLEXNER, M.D., Sc.D., LL.D.

LUTHER EMMETT HOLT, A.B., A.M., M.D., Sc.D., LL.D., *Secretary of the Board*

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JEROME DAVIS GREENE, A.B., *General Manager*

\*Died December 5, 1910.





## SCIENTIFIC STAFF

### *Members of the Institute*

SIMON FLEXNER, M.D., Sc.D., LL.D.; *Director of the Laboratories; Pathology and Bacteriology*  
RUFUS COLE, S.B., M.D.; *Director of the Hospital; Physician to the Hospital; Medicine*  
PHOEBUS AARON THEODOR LEVENE, M.D.; *Chemistry*  
JACQUES LOEB, M.D., Ph.D., Sc.D.; *Experimental Biology*  
SAMUEL JAMES MELTZER, M.D., LL.D.; *Physiology and Pharmacology*

### *Associate Members of the Institute*

JOHN AUER, S.B., M.D.; *Physiology and Pharmacology*  
ALEXIS CARREL, L.B., Sc.B., M.D.; *Experimental Surgery*  
HIDEYO NOGUCHI, M.D.; Igaku Hakushi; Sc.M.; *Pathology and Bacteriology*

### *Associates*

FRANK WATTS BANCROFT, S.B., S.M., A.M., Ph.D.; *Experimental Biology*  
ALFRED EINSTEIN COHN, A.B., M.D.; *Medicine*  
GEORGE WILLIAM HEIMROD, A.B., A.M., Ph.D.; *Chemistry*  
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PEYTON ROUS, A.B., M.D.; *Pathology and Bacteriology*  
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### *Assistants*

REINHARD HEINRICH BEUTNER, Ing.D.; *Experimental Biology*  
FREDERICK JAMES BIRCHARD, A.B., Ph.D.; *Chemistry*  
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HOMER FORDYCE SWIFT, Ph.B., M.D.; *Medicine; Asst. Resident Physician*  
HARDOLPH WASTENEYS; *Experimental Biology*  
MARTHA WOLLSTEIN, M.D.; *Pathology and Bacteriology*

### *Fellows*

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ELMORE EVEREST BUTTERFIELD, M.D.; *Pathology and Bacteriology*  
LOUIS JOHN GILLESPIE, Ph.B., Ph.D.; *Bacteriology*  
WILLIAM HOWARD TYTLER, A.B., M.B.; *Pathology*

### *Research Scholar*

HELEN LILLIAN FALES, S.B.; *Chemistry*

## ADMINISTRATIVE AND OTHER APPOINTMENTS

JEROME DAVIS GREENE, A.B., *General Manager*  
JAMES URQUHART NORRIS, *Assistant Manager*  
HERMAN GOEPPER, A.B., M.B.A., *Assistant Treasurer*  
GEORGE HENRY ROEDER, S.B., *Superintendent of the Farm*  
LOUIS SCHMIDT, *in charge of the Department of Illustration and Radiography*  
EDITH CROWNINSHIELD CAMPBELL, A.B., *in charge of Publications*  
KATHERINE LILLY, *Nurse in the Department of Experimental Surgery*  
LILLIA MARIE DONNELL TRASK, *in charge of the Library*  
ANNE BOWLEY, *Secretary to the General Manager*

## HOSPITAL ADMINISTRATIVE STAFF

NANCY POULTNEY ELLICOTT, *Superintendent*  
MARY BRYCE THOMPSON, *Assistant Superintendent*  
FRANCES TUCKER TUCKER, *Housekeeper*



## HISTORY AND ORGANIZATION

THE Rockefeller Institute for Medical Research was founded in 1901 when the following persons secured its incorporation under the laws of the State of New York and became the first Board of Directors:

WILLIAM HENRY WELCH, M.D., *Professor of Pathology in Johns Hopkins University, Baltimore, Md.*

THEOPHIL MITCHELL PRUDDEN, M.D., *Professor of Pathology in the College of Physicians and Surgeons of Columbia University.*

CHRISTIAN ARCHIBALD HERTER, M.D., *Professor of Pathological Chemistry in the University and Bellevue Hospital Medical College, New York City.*

LUTHER EMMETT HOLT, M.D., *Professor of Diseases of Children in the College of Physicians and Surgeons of Columbia University.*

HERMANN MICHAEL BIGGS, M.D., *General Medical Officer of the Department of Health, New York City, and Professor of Therapeutics and Clinical Medicine in the University and Bellevue Hospital Medical College, New York City.*

SIMON FLEXNER, M.D., *Professor of Pathology in the University of Pennsylvania, Philadelphia.*

THEOBALD SMITH, *Professor of Comparative Pathology in Harvard University, Boston.*

The purpose of the Corporation, in the language of the certificate, was "medical research with special reference to the prevention and treatment of disease." In 1908 the charter was amended by an Act of Legislature increasing the powers of the Corporation and enlarging the scope of its activities. The purposes of the institution were thus described by the amended charter:

"The objects of said Corporation shall be to conduct, assist, and encourage investigations in the sciences and arts of hygiene, medicine, and surgery, and allied subjects, in the nature and causes of disease and the methods of its prevention and treatment, and to make knowledge relating to these various subjects available for the protection of the health of the public and the improved treatment of disease and injury. It shall be within the purposes of said Corporation to use any means to those ends which from time to time shall seem to it expedient, including research, publication, education, the establishment and maintenance of charitable or benevolent activities, agencies or institutions appropriate thereto, and the aid of any other such activities, agencies, or institutions already established or which may hereafter be established."



The amended charter further defined the powers of the Corporation as follows:

"By way of amplification and not by way of limitation of its powers, it shall further have power to build, purchase, improve, enlarge, equip and maintain laboratories and other buildings in the city of New York and elsewhere necessary or appropriate for its work; to own and operate land and buildings for the breeding, raising, and keeping of plants and animals to be used for its purposes; to furnish treatment for diseases of man and of animals, and to provide and maintain all necessary equipment therefor; to conduct and assist such scientific experiments or investigations upon plants or animals as may be necessary or proper for carrying on its work of research; to appoint committees of experts to direct special lines of research; to aid, co-operate with or endow other associations or corporations engaged in similar work within the United States of America or elsewhere; to aid and co-operate with investigators in its own laboratories or elsewhere; to collect statistics and information, and to publish and distribute documents, reports, and periodicals; to carry on such educational work along the lines of its corporate purposes as it may deem wise; to provide for and furnish public instruction in hygiene, sanitation, and the laws of health; to conduct lectures and hold meetings; to acquire and maintain a library; to erect and maintain museums; and in general to do and perform all things necessary or convenient for the promotion of the objects of the corporation or any of them."

The Corporation was authorized by the Act of 1908 to create by by-law or contract a Board of Trustees to which might be delegated such of the powers, duties, and obligations of the members or directors of the Corporation as might be deemed wise, including the power to choose directors and to have the care, custody, and management of the property. Pursuant to this authority, the Corporation, at a meeting held October 15, 1910, adopted by-laws, and created a Board of Trustees and a Board of Scientific Directors. The functions of these two boards, broadly stated, were, respectively, to hold the property of the Institute, and to control the scientific work supported by the annual income. The affairs of the Institute were managed by the original Board of Directors from 1901 until 1910, when, without change of personnel, the board became the Board of Scientific Directors in the reorganized Corporation. By authority of the old Board of Directors and also of the new Board of Trustees, contracts were then entered into with Mr. John D. Rockefeller which provided, in consideration of his furnishing an addition to the endowment of the Institute, that the By-laws of the Corporation should not be altered or revised except in the manner therein provided.



The financial establishment of the Institute was secured in 1901 by the pledge of Mr. John D. Rockefeller that he would give the sum of \$200,000 for the support of the Institute during a period of ten years. At the end of the first year, Mr. Rockefeller promised the additional sum of one million dollars toward the building of a laboratory and the support of the work for the next nine years. From 1901 to 1904 the funds of the Institute were applied only in the form of grants to support the work of investigators in different parts of the world. In 1904, anticipating the completion of its own laboratory, the Institute leased a small building, formerly a part of the Nursery and Child's Hospital, at No. 127 East Fiftieth Street, and gave it a simple equipment for research in pathology, physiology, and chemistry. Here the first investigations conducted by the Institute were begun, under the direction of Dr. Simon Flexner, who had been elected Director of the laboratories of the Institute in 1902. The original staff consisted of Drs. Simon Flexner, S. J. Meltzer, E. L. Opie, H. Noguchi, J. E. Sweet, P. A. Levene, W. A. Beatty, H. S. Houghton, and J. Auer.

In October, 1902, the present site of the Institute in New York City was chosen, and its acquisition made possible through Mr. Rockefeller's purchase of the Schermerhorn estate situated between Avenue A and East River and extending from Sixty-fourth Street to a line north of Sixty-seventh Street. A plot of land for the immediate needs of the Institute was conveyed to it by Mr. Rockefeller in June, 1904. This land comprised a strip 360 feet long and about 200 feet wide, running southward from Sixty-seventh Street, along the East River cliff. A Laboratory Building, Animal House, and Power House were erected in the two years succeeding, from plans drawn by Messrs. Shepley, Rutan and Coolidge of Boston. The cost of these buildings was about \$300,000. The formal opening took place May 11, 1906. In 1907, the work of the Institute was placed on a permanent basis by a gift from Mr. Rockefeller of \$2,620,610 as an endowment fund. During the same year the Board of Directors were invited to submit a plan, which had been maturing since the foundation of the Institute, for an important extension of the field of medical research, namely, a means of studying human disease in its clinical aspects, under conditions as near as possible to laboratory standards of exactness and efficiency. The acceptance of this plan was accompanied by a pledge of \$500,000 in 1908 for the erection of a Hospital. This sum was augmented by subsequent gifts amounting to \$170,015.20 and a transfer of \$273,487.36 remaining unspent from the pledge of 1902. Messrs. York and Sawyer of New York City were chosen as architects.



The cost of the Hospital buildings and equipment was about \$900,000. On October 17, 1910, the new Hospital and Isolation Pavilion were formally opened and patients were admitted for treatment. On the same day, the newly organized Board of Trustees assumed the custody of the endowment funds and other property of the Institute. They also announced a new gift of about \$3,650,000 from Mr. Rockefeller as an additional endowment to support the enlarged activities of the Institute. On October 14, 1911, the Trustees announced a further gift from Mr. Rockefeller of about \$925,000 for endowment. The endowment funds amounted on that date to \$7,186,554.11.

The lands of the Institute were extended in 1908 one hundred feet to the southward to permit the erection of the Hospital. In 1911, a strip of land fifty feet wide along the western boundary from Sixty-fifth Street to Sixty-seventh Street was acquired through the generosity of Mr. Rockefeller, and the area thus widened was extended from Sixty-fifth Street southward to Sixty-fourth Street, thus giving the Institute an unbroken strip of land from Sixty-fourth Street to Sixty-seventh Street along the East River cliff—a total of nearly four acres including the space covered by the intervening streets. At the same time access to the Institute from Avenue A was secured in perpetuity by the conveyance of a right of way bounded by an extension of the lines of Sixty-sixth Street from Avenue A to the Institute property. In 1907, a farm of about one hundred acres with buildings was acquired in Clyde, New Jersey, as a place for the breeding and care of laboratory animals and the supply of farm products.

## DEPARTMENTS OF THE INSTITUTE

THE Institute is composed at present of the Laboratories and the Hospital. This division corresponds with a natural division of medical research into two branches, the first dealing with the problems of human disease in their pathological or physiological aspects and admitting the fullest use of the experimental method; the second studying disease as it actually appears in human beings, under conditions equally favorable to treatment and to scientific observation. A common motive actuates the Institute as a whole, namely, that of advancing knowledge and of securing more perfect means of preventing and healing disease. Thus the work of the Laboratories and Hospital is unified. Their common aim, and the physical connection of the different buildings with each other, often admits of the same problems being studied both in their biological or pathological and in their



clinical aspects. In the organization of the scientific staff of the Institute, the principle has been recognized that the ultimate purposes of medical research and discovery may be greatly served by the study of biological and chemical problems that, as such, may appear remote from medical applications. It has not thus far been the purpose of the Institute to choose rare and strange diseases, in preference to those more prevalent or familiar, on which to spend its resources. On the contrary, the diseases now under investigation, whether in the Laboratories or in the Hospital, include many of those which are regarded as the chief scourges of mankind.

### THE LABORATORIES

The Laboratories of the Institute are sub-divided as follows: Pathology and Bacteriology, Chemistry, Physiology and Pharmacology, Experimental Biology, Experimental Surgery. The Director of the Laboratories is the chief adviser of the Board of Scientific Directors in regard to the scientific work done in that department, and is the ordinary means of communication between the scientific staff and the Board. He also has immediate control of the work in his own subject. The work in each of the other subjects is conducted by a Member or Associate Member, with a staff of assistants.

The Laboratory Building is a fireproof structure of steel frame, with outer walls of yellowish gray brick and limestone. Its simple façade shows five full stories, and a basement which is half above ground.

The basement is sub-divided into a number of rooms of various sizes which contain some of the machinery of the building and also the heavier laboratory apparatus, such as centrifuges, a vacuum pump, shaking apparatus, etc. One room is connected by a spiral stairway with the Library above and is used for the older files of periodicals or other little-used books. Two of the rooms serve as storage rooms for laboratory supplies, and two as the Janitor's quarters. The remaining space is available for various uses such as temporary storage, machinist's and carpenter work, etc.

The first floor contains the administrative offices, the Directors' Room, the Library, and an Assembly Room. The Library occupies four rooms, or about one-half of the floor space. The Assembly Room seats about one hundred people and is supplied with all connections necessary for demonstration purposes, including a stereopticon. This room is used for society meetings and for the weekly conferences of the Institute staff.



The second floor is devoted entirely to chemistry, and is divided into large and small rooms. The larger rooms are fitted out as general laboratories for a number of workers, while some of the smaller ones are used for special purposes; for example, the distillation room where alcohol and ether are redistilled, the hydrogen sulphide room, combustion room, etc.

On the third floor are laboratories for experimental pathology, bacteriology, and protozoölogy. The private study of the Director is located at the northwest corner. The south end of the floor is occupied by a suite of rooms designed especially for aseptic surgical work. This suite is composed of three rooms: in the first is a bathtub and a hot-air drying chamber; here the animal is prepared for operation. In the second room are autoclaves and other steam connections for the sterilization of dressings and instruments. The room on the east side of the building is the operating room. There is also, in connection with this suite, a fourth room paved with cement, which serves as an animal room. Here animals after operation and other procedures are conveniently kept under observation. Only small animals such as mice, rats, guinea pigs, rabbits, and monkeys are kept in this room. These four rooms are connected by a corridor which also separates them from the main hall of the building.

The large general laboratory for bacteriology, on the western side of this floor, contains a built-in hot-air room whose temperature varies from 35 to 39 degrees C., depending upon the level at which this temperature is taken. This room serves for cultivation and digestion experiments. In this room there is also a small shaking machine.

On the fourth floor are special laboratories for experimental pathology, for physiology and pharmacology; preparation rooms and a centrifuge room. The laboratories for pathology are formed by a series of four communicating rooms at the north end of the floor. They are equipped not only for ordinary pathological work but also for work in chemistry, including gas analysis.

The south end of the floor space is occupied by the department of physiology and pharmacology. The preparation rooms are two rooms on the western side where bacteriological media are made up; here also most of the hot-air and steam sterilizations for bacteriological purposes are carried out. In an adjoining cement-floored room some of the smaller centrifuges are placed. These centrifuges are anchored on rubber and produce very little vibration when in action. There are two other laboratories upon this floor which are designed for individual workers.

All the laboratory rooms are equipped with hoods containing gas, hot and cold water, electrical, and vacuum connections.



The hoods of the chemical floor, in addition, are supplied with steam.

The fifth floor contains, at the south end, the department of Experimental Biology; at the north end, rooms equipped with photographic appliances and other means of reproducing specimens for illustrating publications; a few special research rooms; and, in the center, a dining room for the scientific staff and one for the clerical staff.

Each floor is provided with a large refrigerator which communicates with the main refrigeration plant in the Power House and with a subsidiary refrigeration plant in the basement. The refrigerators in the basement and in the kitchen are arranged for constant temperatures, while those on the second, third, and fourth floors are divided into three tiers of compartments so connected that each tier may be maintained at an independent temperature.

The various floors of the building, including the roof, communicate with each other by two stairways at the northern and southern ends of the building. There is also an electric elevator.

All the various floors and departments are connected with each other by a house telephone, and on each floor is a telephone booth for city and long distance connections.

The roof really forms a sixth floor, for a considerable portion of the space has been covered by an iron house sheathed with copper. This house has been sub-divided into a number of small rooms in which dogs and smaller animals are kept. Each of these rooms has a concrete floor and communicates with an outside, tiled runway. This runway is separated by heavy wire fences into as many compartments as there are rooms. A separate room is provided for the preparation of the food for the animals.

At each end of this roof house is a suite of operating rooms similar to that on the third floor. In the southern suite, all the operations of experimental surgery are carried on. The operating room of this suite faces north, and its north wall and roof are constructed of glass so that sufficient light is secured for the most delicate work.

### ANIMAL HOUSE

For the proper housing and care of the principal stock of animals, an Animal House stands just north of the Laboratory Building. It is of "semi-fireproof" construction and is connected with the main building by a covered passage-way. The first floor contains stables for horses, sheep, and goats. On the second floor are large, well-lighted spaces where monkeys, cats,



rabbits, guinea pigs, and birds are housed. A small room provided with a series of tanks is used for the storage of frogs. There is also a loft for the storage of grain and hay.

## HOSPITAL

THE Hospital consists of a main building and an Isolation Pavilion. The first two stories of both buildings are built of limestone, and the upper stories of the Hospital of a light brown brick with limestone trimmings. The construction is fireproof throughout, steel, concrete, and terra cotta being the materials used. For floor surface, terrazzo is used in most of the corridors, a small round tile for the wards, kitchens, and laundry, hard pine for small rooms and a painted cement for the chemical laboratory and for corridors subjected to rough use.

The main building has eleven stories, counting three basement floors and a housed roof. The lowest basement consists of a gallery of eleven rooms, besides toilet and bathrooms, for the house-maids, built in the cliff overlooking the East River. The next level, known as the sub-basement, extends under both the main building and the adjoining Isolation Pavilion. It contains a large autopsy room with its adjoining pathological laboratory and refrigerator room, a central linen room, a sewing room, a capacious and well-lighted laundry, an incinerating plant, an ice-making tank, four large cylindrical tanks, — two for compressed air and two for water, — furnishing pressure service for all but the three lowest floors of the building, the elevator machinery including that of two elevators and the dumb waiter service connecting the kitchen with all floors, coal bunkers, and several rooms for storage and other purposes. The laundry is equipped with two large washing machines, two centrifugal driers, a drying chamber through which the damp clothing is carried on a slow-moving endless chain, electric irons, a large and a small mangle, and other accessories.

The basement has in its western end, accessible from the sunken driveway for ambulances and service, the rooms devoted to the examination of patients, whether with reference to admission, or to the keeping up of medical records after discharge. The rest of the floor is taken by the main kitchen with its stores, pantries, refrigerators, vegetable room, three service dining rooms, and a room containing the incinerator chute.

The first or office floor contains at the western end the offices of the Director, the Superintendent, and the Housekeeper, a record room, two reception rooms, and, immediately facing the



main entrance, the general office. The rest of this floor is occupied by the resident physicians' quarters, with accommodations for eight in all, besides dining and living rooms.

The second floor is occupied exclusively by the Superintendent, Assistant Superintendent, and nurses. The Superintendent and Assistant Superintendent each have a bedroom, sitting room and bath. Night nurses have their sleeping rooms cut off by isolating corridors and double doors. A dining room, living room, bath and toilet rooms complete the equipment of this floor, which enjoys the complete separation from other parts of the building, made possible, on every floor, by the fact that the stairways are cut off by fireproof screens and doors.

The third floor is devoted to patients, the greater part of the space being taken by single rooms, though rooms with baths are also provided. There are also bath and toilet rooms, work rooms for nurses, and a small clinical laboratory for routine analyses and examinations.

The fourth, fifth, and sixth floors are identical in plan. It was, in fact, the arrangement of these floors that largely determined the plan of the whole building. At each end of the floor are the wards running north and south at right angles to the long axis of the building and exposed to the air and light on three sides. They are connected by a corridor, the space on either side of which is taken by the ward kitchen, toilet and work rooms, and two rooms for the separate accommodation of single patients, for purposes of isolation, examination, dressings, etc. The wards are all eighteen feet wide by forty-eight feet long. They are intended to contain seven beds. Each ward opens on a loggia or balcony at the end of the building, where, if necessary, all the beds in the ward can be placed at one time. The beds are mounted on large casters of special design, which makes it an easy matter to wheel them on to the balcony. The work rooms, bathrooms, and toilets open directly from the wards, and there is also a small clinical laboratory for routine work, which adjoins the west ward on each floor. At the northeast and northwest corners of the building, with direct access from the wards as well as from all the other floors, are enclosed fire-escape stairs leading from the ground to the roof.

The only difference in the use of the three ward floors is that on the fourth floor the large, center room on the south of the corridor is occupied by a hydrotherapeutic equipment and light and vapor baths, while the corresponding space on the fifth floor is occupied by a special diet kitchen, and, on the sixth floor, by a constant temperature room for experiments in metabolism.

The seventh floor is occupied exclusively by laboratories, those



for chemical work being placed at the eastern end, the biological laboratories at the western end, and the physiological in the center. The chemical laboratories are provided with water under forty pounds' pressure, gas, electricity, compressed air, and vacuum. A balance room, an animal room, a large constant temperature vault, and two stacks of refrigerators each containing nine compartments are included in the equipment of this floor.

The eighth floor or "roof" has a small operating suite intended rather for occasional or emergency use than for the regular accommodation of surgical cases, a doctors' wash-room, a closet for warming blankets, a kitchen for the service of patients who may be placed on the roof, a photographic and X-Ray suite, a special room for the storage of mattresses (the mattresses being hung vertically), toilet rooms for patients, and rooms for the ventilating fans. Doors at the center and ends of this floor open on large roof spaces, the space at the center, with southern exposure, being sheltered overhead.

The ventilation of the building is of the simplest description. The hoods in the kitchens and laboratories are operated by fans on the eighth story, as are also the flues leading from the two large fireplaces on the inner wall of each ward. Similar artificial ventilation is provided for certain other rooms, but in general the wards and single rooms depend upon the windows and doors for their ventilation.

### ISOLATION PAVILION

The basement of the Isolation Pavilion contains a special laundry and sterilizing apparatus for the clothing and bedding of infected patients, the infected material being dropped through a trapdoor in the receiving room above, into a chamber whence the only communication with the laundry is secured by passage through the sterilizers. Also in the basement are found a clinical laboratory, an orderlies' room, and service rooms.

The main floor of the Pavilion is divided by a corridor running east and west. On the southern side are seven single rooms, separated from each other by partitions of plate glass. On the north side are the reception room, toilet and work rooms, kitchen, and, at the eastern end, two more patients' rooms, separated by plate glass. The Pavilion is administered as a single ward rather than as a series of private rooms, the glass partitions being intended to facilitate the supervision of patients. The plan of this ward rests upon the well-grounded assumption that the com-



municable diseases largely depend, for transmission from one person to another, upon the carrying of infectious matter by direct contacts. The risk inherent in mere proximity is regarded as so slight, if any, as to be negligible. On the other hand a rigid aseptic technique is imposed on physicians, nurses, and others who have occasion to be in the ward or to go from one patient to another.

The rooms or compartments of the Isolation Pavilion are dependent on windows and doors for the intake of fresh air. Ventilation is aided, however, by flues running from each room to the roof, in which a rising current of air is created by steam pipes. These flues can be thoroughly cleaned by a jet of live steam, turned on for as long as may be necessary.

The second floor of the Pavilion is entirely occupied by nurses' rooms, including a dining room. The floor is divisible into two parts, the one restricted to the use of nurses in attendance on infectious patients, the other, accessible from the main building by means of a bridge, and available for other nurses. The roof is partially sheltered and is available for beds, or as a place for the recreation of nurses or patients.

## MEDICAL AND NURSING STAFF

The medical work of the Hospital is in charge of the Director, who also has the title of Physician to the Hospital. In the care of patients he is assisted by a staff consisting of the Resident Physician and a number of Assistant Resident Physicians, all of whom are paid salaries in addition to board, lodging, and laundry service. They are required to have had hospital experience and to have shown an aptitude for scientific investigation along clinical lines. The full utilization of the Hospital wards may from time to time require the service of additional resident or non-resident physicians.

Special workers in chemistry, pathology, bacteriology, and physiology reinforce the clinical staff, in the investigations carried on by the Hospital.

Only graduate nurses are employed. No training school for nurses is maintained by the Institute. The number of nurses varies not only with the number of wards that are utilized but also with the character of problems under investigation.

## ADMISSION OF PATIENTS

The capacity of the Hospital is about seventy beds. The work at any one time is confined to selected cases that bear upon a limited number of subjects chosen for investigation. The subjects chosen in the first year were acute lobar pneumonia, acute anterior poliomyelitis (infantile paralysis), syphilis, and certain types of cardiac disease. Patients are admitted only by the Resident Physician to whom cases are referred by physicians or hospitals, or by direct application. The Director issues bulletins from time to time informing physicians of the diseases chosen for investigation. While making the fullest use of its opportunities for observation and study, the Institute recognizes at all times the paramount right of the patient to receive the most effective treatment within the power of the attending physicians. A patient does not impair that right by the voluntary character of his application for admission.

## SERVICES OF THE INSTITUTE FREE

Under the By-laws of the Corporation, no charge can be made to persons treated at the Hospital, for professional care or service rendered, or for board and lodging. All discoveries and inventions made by any person while receiving compensation from the Institute become the property of the Institute, to be by it placed freely at the service of humanity in accordance with the beneficent purposes of the founder.

## POWER PLANT

Steam heat, electric light and power, and refrigeration are furnished for the buildings of the Institute by a Power House situated at the northern end of the grounds. Exhaust steam is used almost exclusively for heating purposes. The equipment of the Power House includes four 60 horse-power return tubular boilers; three side crank engines driving one 100-Kilowatt and two 50-Kilowatt direct-current generators; one twenty-five-ton compression type refrigerating machine; one three-cylinder motor-driven vacuum pump; a machine shop, including lathe, drill press, shaper, pipe machine, a grindstone—all motor driven. The ice-making plant in the Hospital has a capacity of 900 pounds of clear ice every twenty-four hours. The subsidiary refrigerating equipment in the Laboratory Building includes a six-ton absorption type machine.



## APPOINTMENTS TO THE SCIENTIFIC STAFF

APPOINTMENTS to the scientific staff are made by the Board of Scientific Directors, upon the recommendation of the Director of the Laboratories or of the Director of the Hospital. The following grades are fixed by the Rules of the Board: Member of the Institute; Associate Member of the Institute; Associate; Assistant; Fellow; Scholar. Members of the medical staff of the Hospital may have in addition to the appropriate Institute titles, as above, the following titles indicating their special functions; Physician to the Hospital; Assistant Physician to the Hospital; Resident Physician; Assistant Resident Physician. Appointments of Members of the Institute are made without limit of time; of Associate Members for a term of years; all other appointments are made for a term not exceeding one year.

As a rule all appointments to the scientific staff, whether in the Laboratories or in the Hospital, are made with stipend and engage the full time of the incumbents. No provision is made for the enrolment of individuals or classes for formal instruction in the medical sciences or in laboratory or clinical methods.

Applications for appointment may be made at any time. Blank forms of application are furnished on request. Appointments are ordinarily made only as vacancies occur. They may be sought for the purpose of permanent or indefinite association with the Institute, or for the purpose of temporary association with the Institute with one or the other of the following objects: (1) Experience in methods of investigation generally, or (2) training in a special line of investigation, or (3) opportunity to work more or less independently on a particular problem. The qualifications for appointments to the scientific staff include preliminary training such as would be represented by a medical degree, and, in addition, a knowledge of methods of research; or a training such as would ordinarily be appropriate to the higher degrees in the biological or physical sciences.

## GRANTS

A LIMITED amount of money is assigned by the Board of Scientific Directors each year to the support of investigations carried on at other institutions. All applications for grants should be in the hands of the General Manager before May 1. Blank forms of application are furnished on request. Grants are made for a



single academic year ending June 30, unless otherwise agreed. Payments are ordinarily made by instalments, one-fourth when the work is begun (due notice being given to the General Manager) and one-fourth on each of the following dates, — October 1, January 1, April 1.

A grant may be used for any purpose required for the investigation, whether for the purchase of apparatus and materials or for the employment of assistants, subject to the following conditions: (1) A grant is not intended merely to eke out salaries or appropriations paid by other institutions for the same work; the use of each grant must be identified with the particular problem for which the support of the Institute is desired. The Board must be satisfied in the case of every application that the spirit of this rule will be carefully observed. (2) Apparatus purchased from grants may, at the discretion of the General Manager, be claimed as the property of the Institute upon the completion of the investigation.

A director or head of a laboratory receiving a grant from the Institute may recommend an assistant working under him, for the purposes of the grant, for formal appointment by the Board as Research Student, Research Scholar, or Fellow, of the Rockefeller Institute.

Unless otherwise provided it is expected that those whose work is aided by grants will devote their entire time to research.

Publication of the results of investigations may be made in such form and place as those conducting them may select; but before such publication, unless otherwise arranged, the paper should be submitted to the General Manager for approval by the Board of Scientific Directors. Due acknowledgment of the aid granted by the Institute must accompany all publications of investigations, and the titles Research Student, Research Scholar, or Fellow, of the Rockefeller Institute, are to be used after the names of authors possessing them.

A stated number of reprints of each paper are furnished to the Institute at its expense, the bill for the same, certified as correct by the author, being sent to the General Manager. These reprints are uncut, unstitched, and uncovered, but folded, and the size of the page should be that of *The Journal of Experimental Medicine* ( $6\frac{3}{4} \times 10\frac{1}{4}$  inches,  $17 \times 26$  cm.). They should be sent by express to the Rockefeller Institute.

No change in the topic of investigation, nor transfer of a grant to another person, may be made without the consent of the Board.

It is understood that all who receive grants in aid of research accept them subject to the conditions and regulations above stated.



## PUBLICATIONS

### THE JOURNAL OF EXPERIMENTAL MEDICINE

SIMON FLEXNER, M.D., and BENJAMIN T. TERRY, M.D., Editors

*The Journal of Experimental Medicine*, which was conducted by Dr. William H. Welch at Johns Hopkins University from 1896 to 1905, has been published since the latter date under the auspices of the Institute. It is designed to cover the field of experimental medicine, and is a medium for the publication of work conducted in the laboratories of the Institute, or elsewhere under its grants. The Journal also accepts contributions of a suitable character from other sources.

Beginning with the year 1911, *The Journal of Experimental Medicine* is published *monthly*. The issues of one calendar year make two volumes of about 600 pages each.

Contributions should invariably be written in the English language, and limited preferably to twenty printed pages, not counting the space occupied by illustrations. Articles which exceed in length twenty-five printed pages will be returned to the authors in order that their contents may be reduced to this maximum. Authors receive fifty reprints of their papers free of charge; additional copies may be obtained at cost.

Subscriptions (for a year: \$5.00, 21 shillings, 21 marks, 26 francs; for single copies: 75 cents, 3 shillings, 3 marks, 4 francs) may be sent to the Publication Department of The Rockefeller Institute for Medical Research, Sixty-sixth Street and Avenue A, New York; to the Macmillan Company, London; to Gustav Fock, Leipzig; or to Masson et Cie, Paris.

### MONOGRAPHS

Under the head of *Monographs of the Rockefeller Institute for Medical Research* are published from time to time scientific papers which are so extensive, or require such elaborate illustrations, as to render them unsuitable for current periodical issues. The *Monographs* are published at irregular periods, determined by the available material on hand.

Manuscripts for which publication in the series of *Monographs* is desired should be sent to the Publication Department of the Rockefeller Institute for Medical Research, Sixty-sixth Street and Avenue A, New York.

*Monographs* will be sent post paid on application, at \$1.00 each, payable in advance by check or money order.



## STUDIES

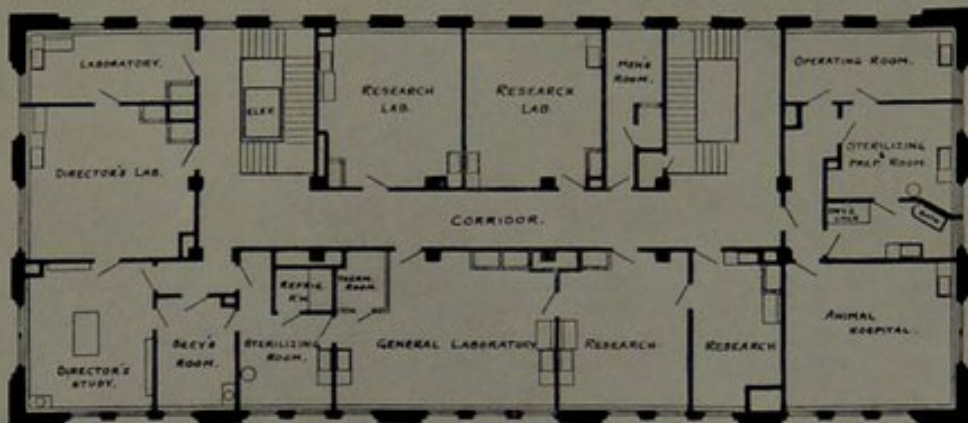
The published results of investigations conducted in the laboratories of the Institute, or under its grants, are assembled at irregular intervals and bound into volumes designated *Studies from The Rockefeller Institute for Medical Research*. A small number of the *Studies* are distributed free of charge to libraries, learned societies, and laboratories in which medical research is carried on. A few copies are reserved for sale, and may be obtained at \$5.00 each.

## GENERAL ADMINISTRATION

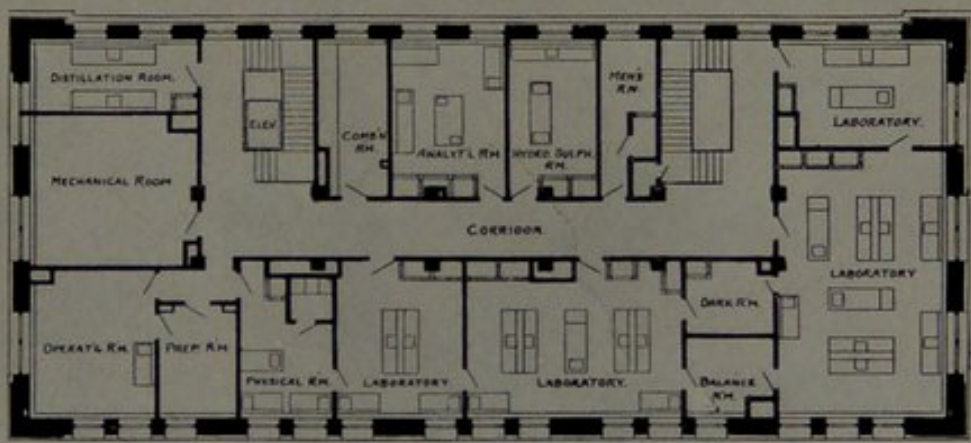
The general administrative and financial conduct of the Institute, as distinguished from its strictly scientific activities, is delegated by the Governing Boards to the General Manager. He is responsible to the Board of Trustees for the care of the grounds, buildings, and equipment of the scientific establishment. He is the treasurer of the Board of Scientific Directors and is responsible to them and to the Budget Committee of the Corporation for the proper expenditure of the income, in accordance with the budget. As far as possible he relieves the Director of the Laboratories, the Director of the Hospital, and the other members of the scientific staff from administrative cares, and in general is expected to make and keep the entire plant an efficient instrument in their hands for the scientific purposes of the Institute. In the Hospital the Superintendent is responsible for the nursing staff, housekeeping, and the purchase of supplies. She is assisted by an Assistant Superintendent, in direct charge of the nursing staff, and a Housekeeper. Stenographic service is provided for the scientific workers as well as for the administrative officers.

## EXPERIMENTS ON ANIMALS

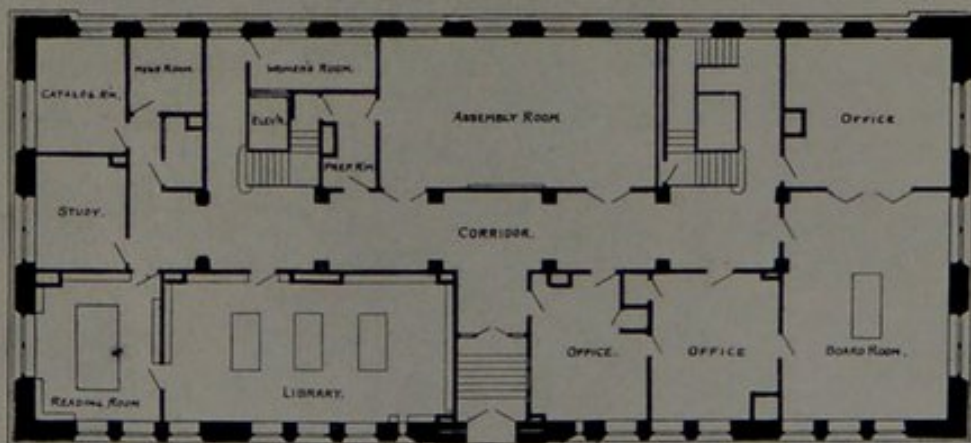
The authorities of the Institute believe that the use of animals for the purpose of advancing the knowledge of disease, its prevention and cure, is well justified on the grounds of humanity and necessity. They also believe that whenever the sacrifice of any animal is required by the welfare of human beings, or of the lower animals, that sacrifice should be exacted with the least possible infliction of pain or distress consistent with the attainment of the object in view. Members of the scientific staff are required to conform to this standard in all operations upon animals, and the chief of each laboratory is held responsible for the actions of his assistants in this regard.



THIRD FLOOR PLAN



SECOND FLOOR PLAN

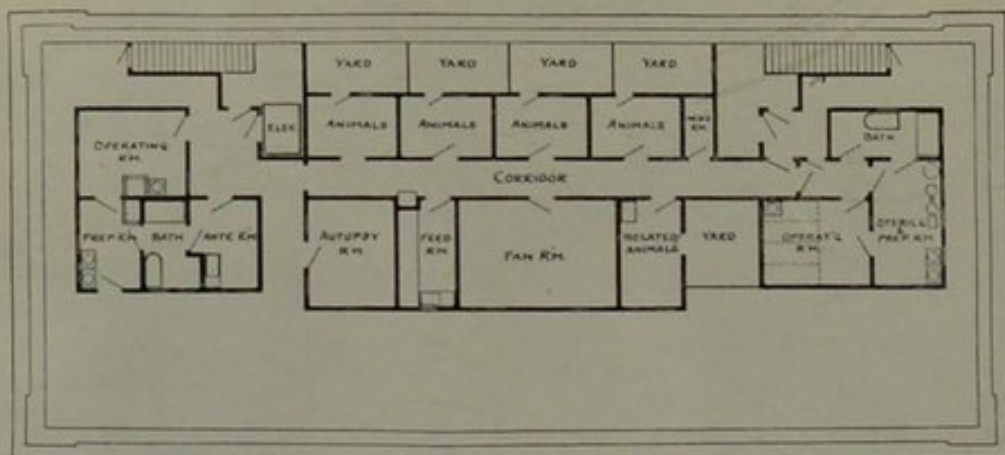


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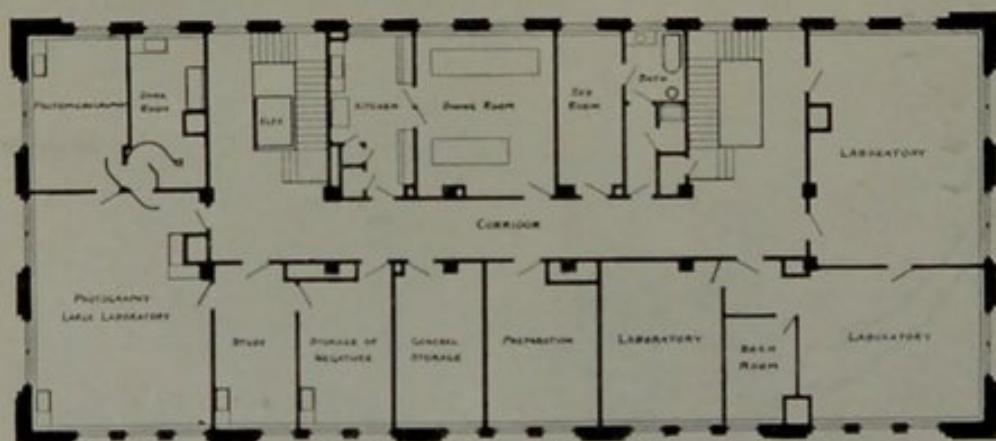
THE ROCKEFELLER INSTITUTE  
FOR MEDICAL RESEARCH

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SHEPLEY RUTAN & COOLIDGE  
ARCHITECTS

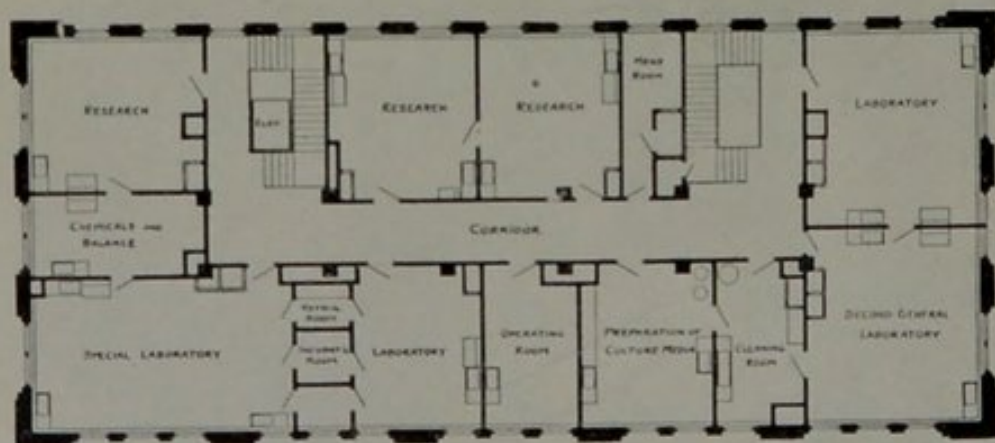




ROOF PLAN



FIFTH FLOOR PLAN

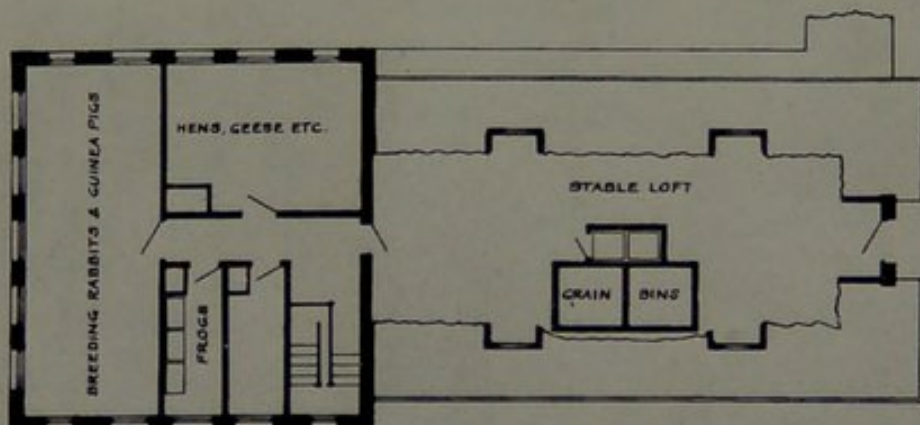


FOURTH FLOOR PLAN

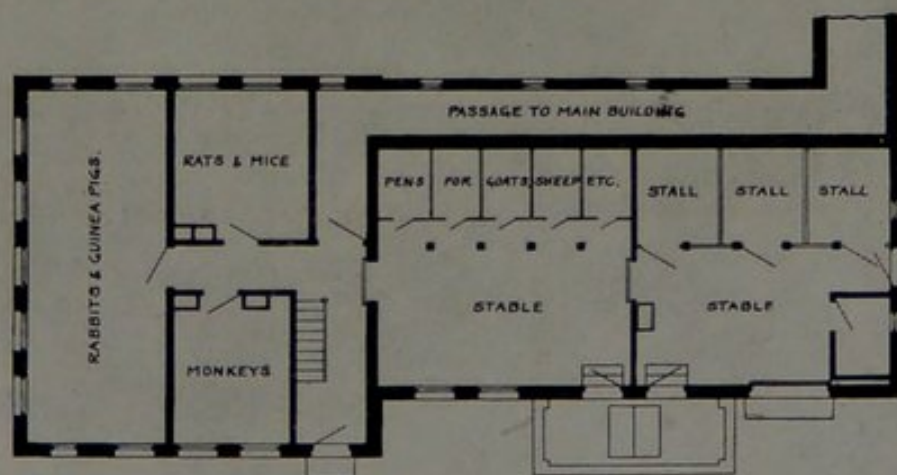
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ARCHITECTS

LABORATORY BUILDING

SCALE 1" = 10'



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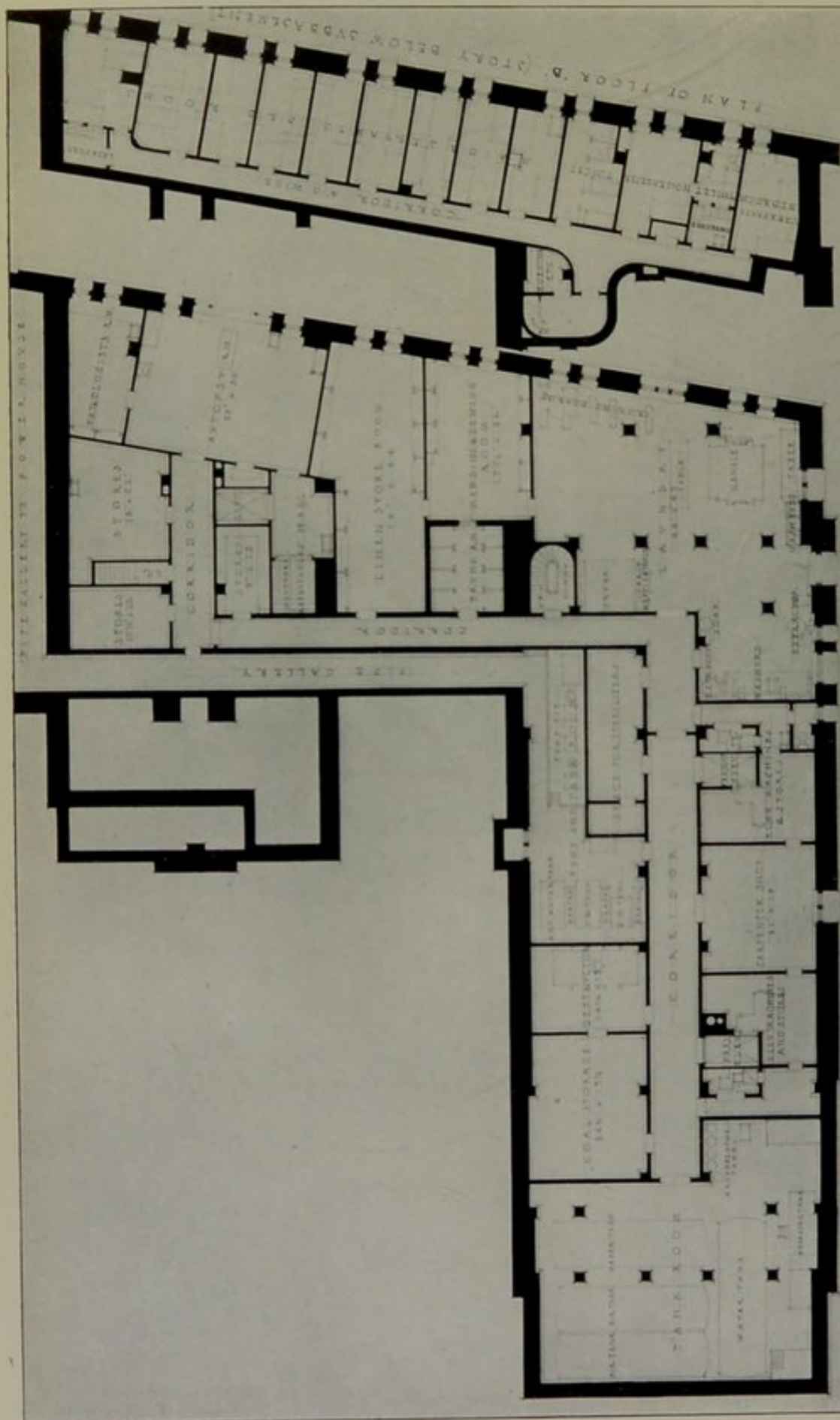
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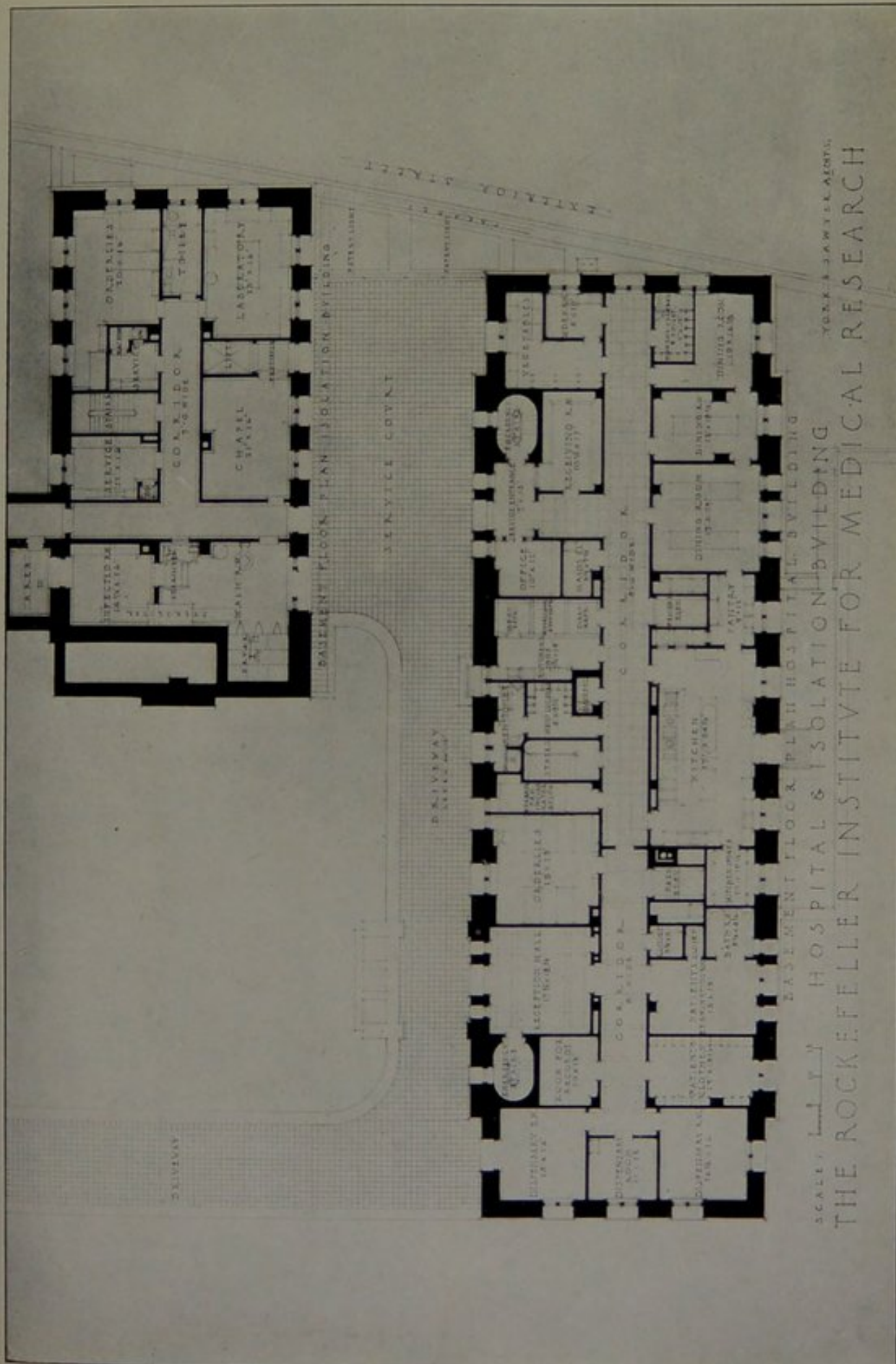
ANIMAL HOUSE





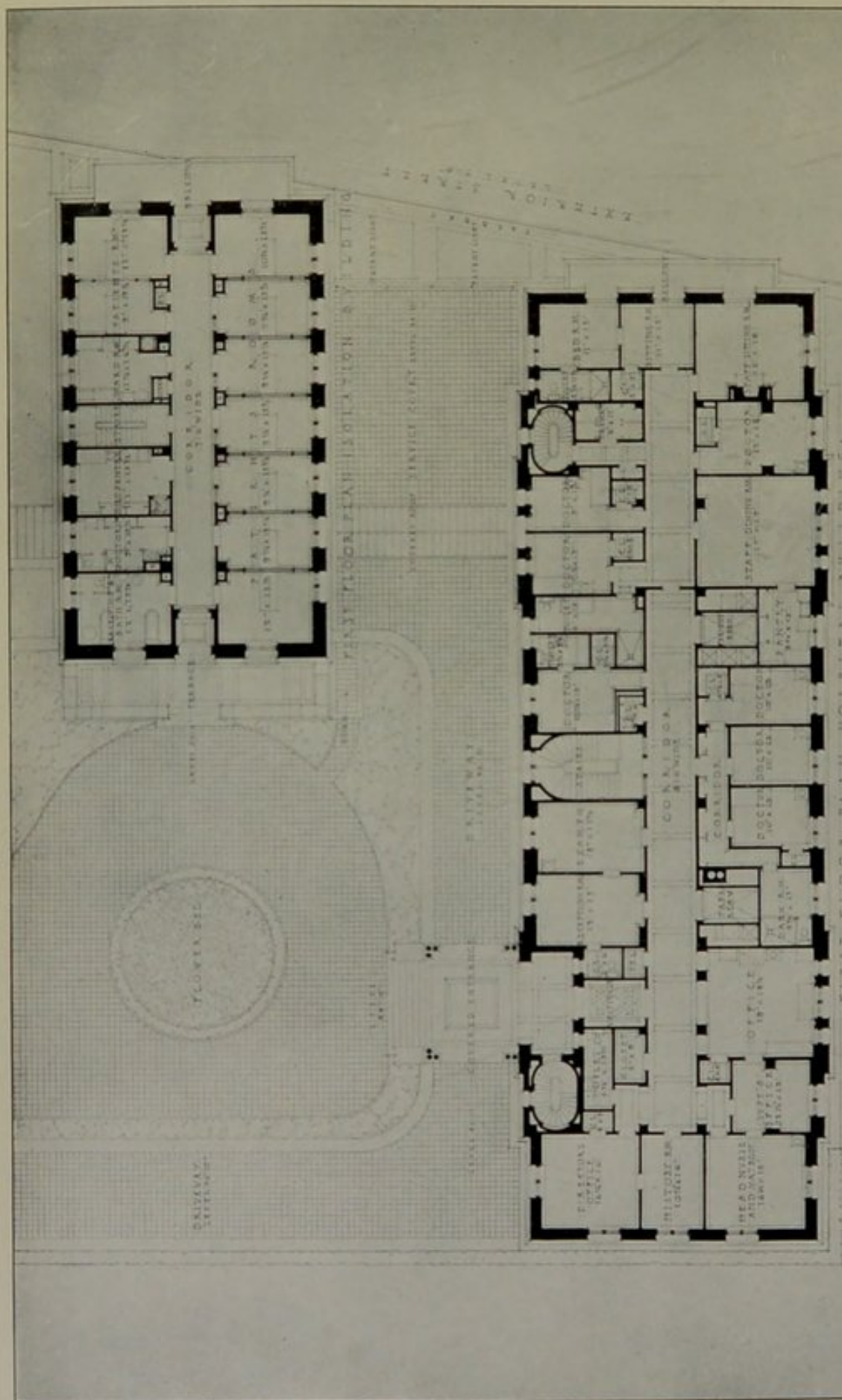
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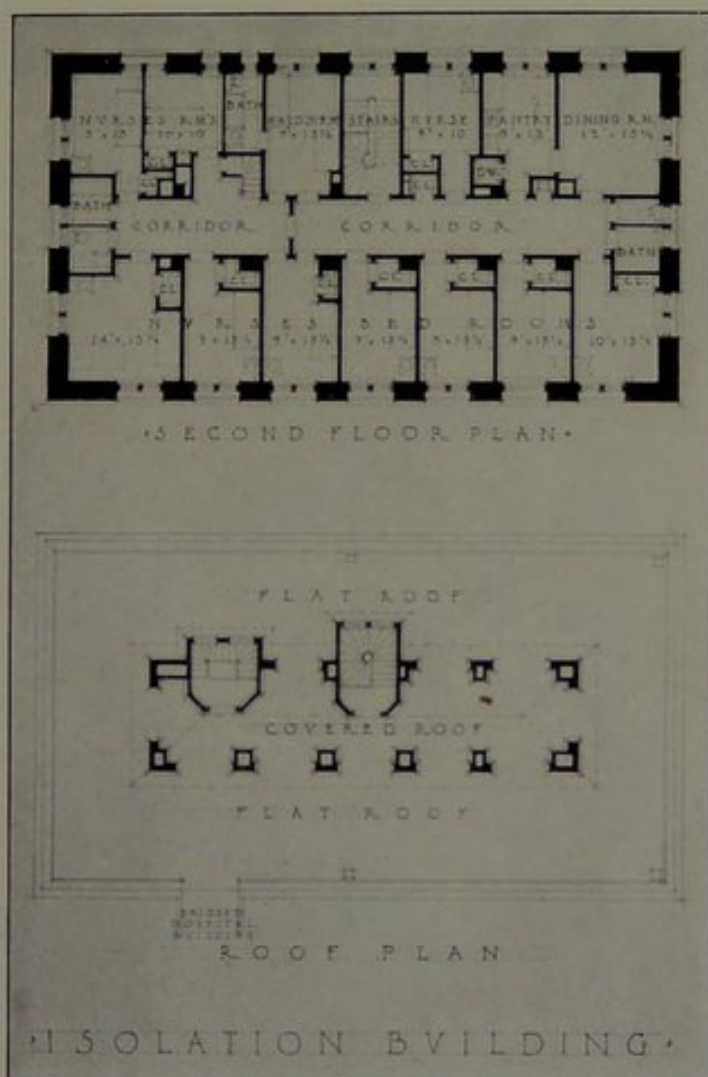
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THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH



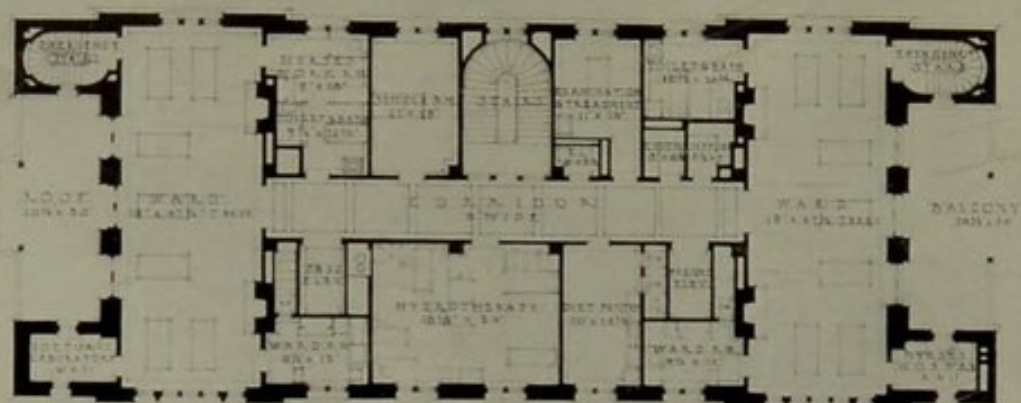
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 YORK & JAWYER ARCHT.



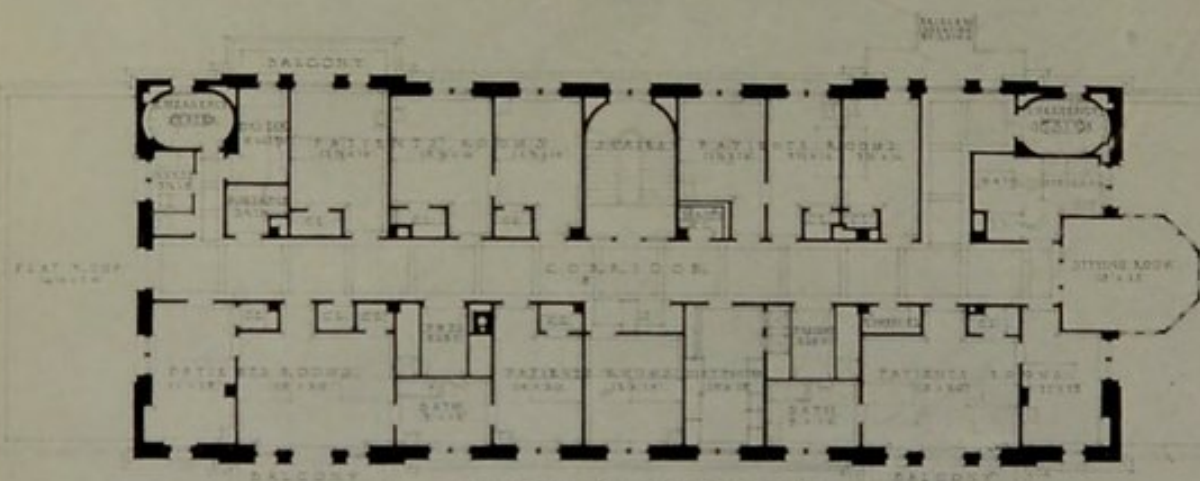




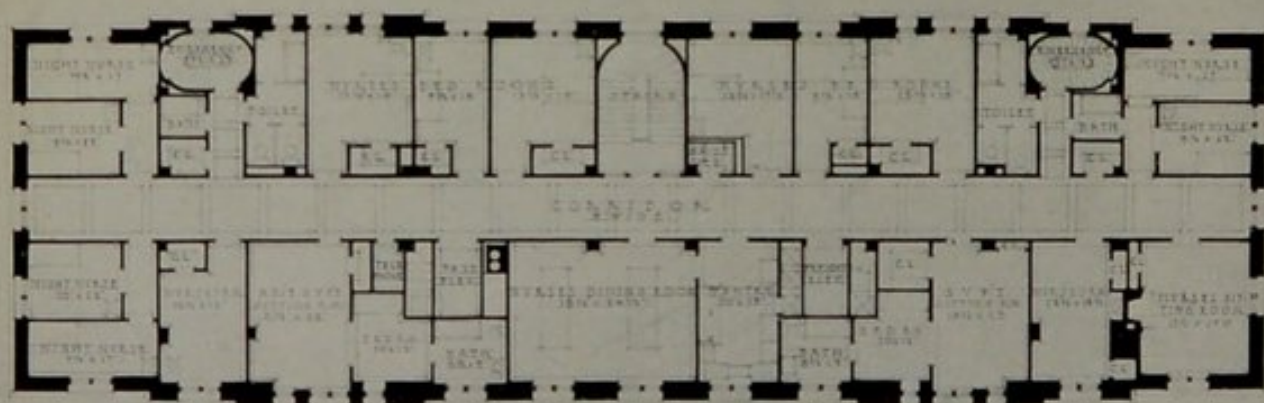




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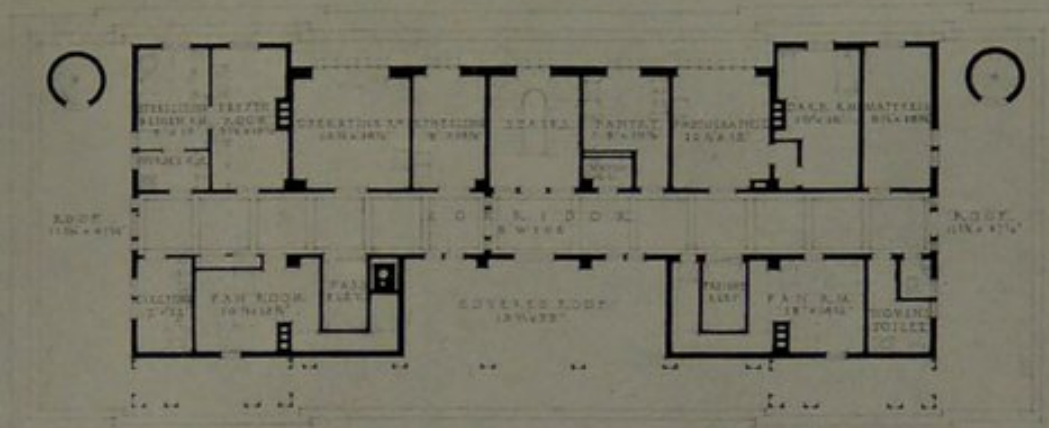


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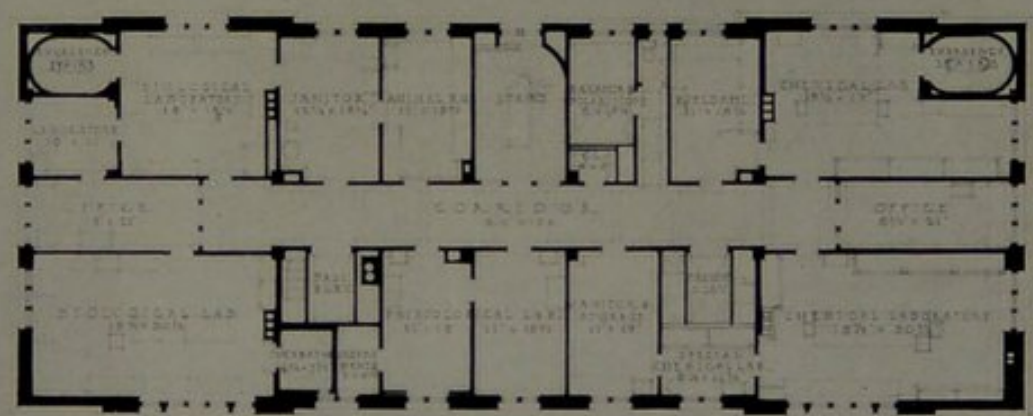


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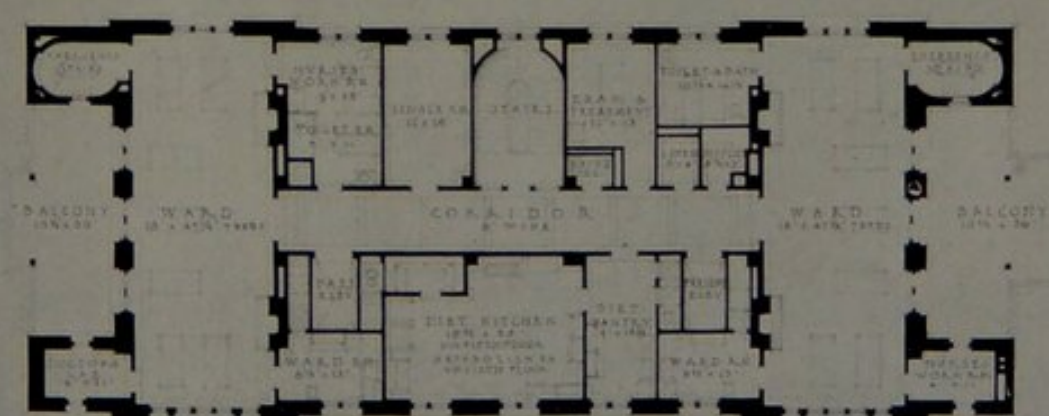
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THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH



EIGHTH FLOOR PLAN



SEVENTH FLOOR PLAN



FIFTH & SIXTH FLOOR PLANS

SCALE: 1" = 10' HOSPITAL BUILDING YORK & JAWYER, ARCHTS.  
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