Methods and problems of medical education. (610.7 MET 610.7 MET)

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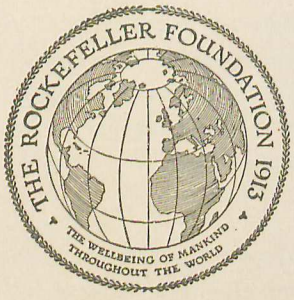
METHODS AND PROBLEMS
OF
MEDICAL EDUCATION

(TENTH SERIES)



DIVISION OF MEDICAL EDUCATION
THE ROCKEFELLER FOUNDATION
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INSTITUTE OF GENERAL EXPERIMENTAL PATHOLOGY ROYAL UNIVERSITY OF FLORENCE

BY

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DESCRIPTION OF THE BUILDING

The Institute of General Experimental Pathology and Bacteriology of the Royal University of Florence was inaugurated in the year 1923, but the construction was begun before the outbreak of the war (1914) which interrupted all building activities. A law issued by Parliament in 1913 provided for the erection in accordance with the latest conceptions of modern sanitary engineering of a medical faculty in the University, including all the biological institutes and some clinics, to be built on an area of some eight hectares in one of the most picturesque and healthy districts in Florence where some small buildings had already been erected for the Hospital of Santa Maria Nuova of Florence.

The constructions for the Biological Institute, including the Institute of Hygiene, General Anatomy, and Forensic Medicine, have already been begun, whereas, the Institute of General Pathology is completed. The plans for the other biological institutes have been prepared but have not yet been approved.

The building for general pathology covers an area of approximately 1,750 square meters. Facing the new hospital square it has an eastern exposure, 45° to southward and a planimetrical formation in the form of a U, with open courtyard to give natural light to the various laboratories.

The wings of the building are on one floor, 1.60 meters above the ground and have covered terraces and sunny

FIG. 1.—INSTITUTE OF GENERAL PATHOLOGY, FLORENCE, ITALY

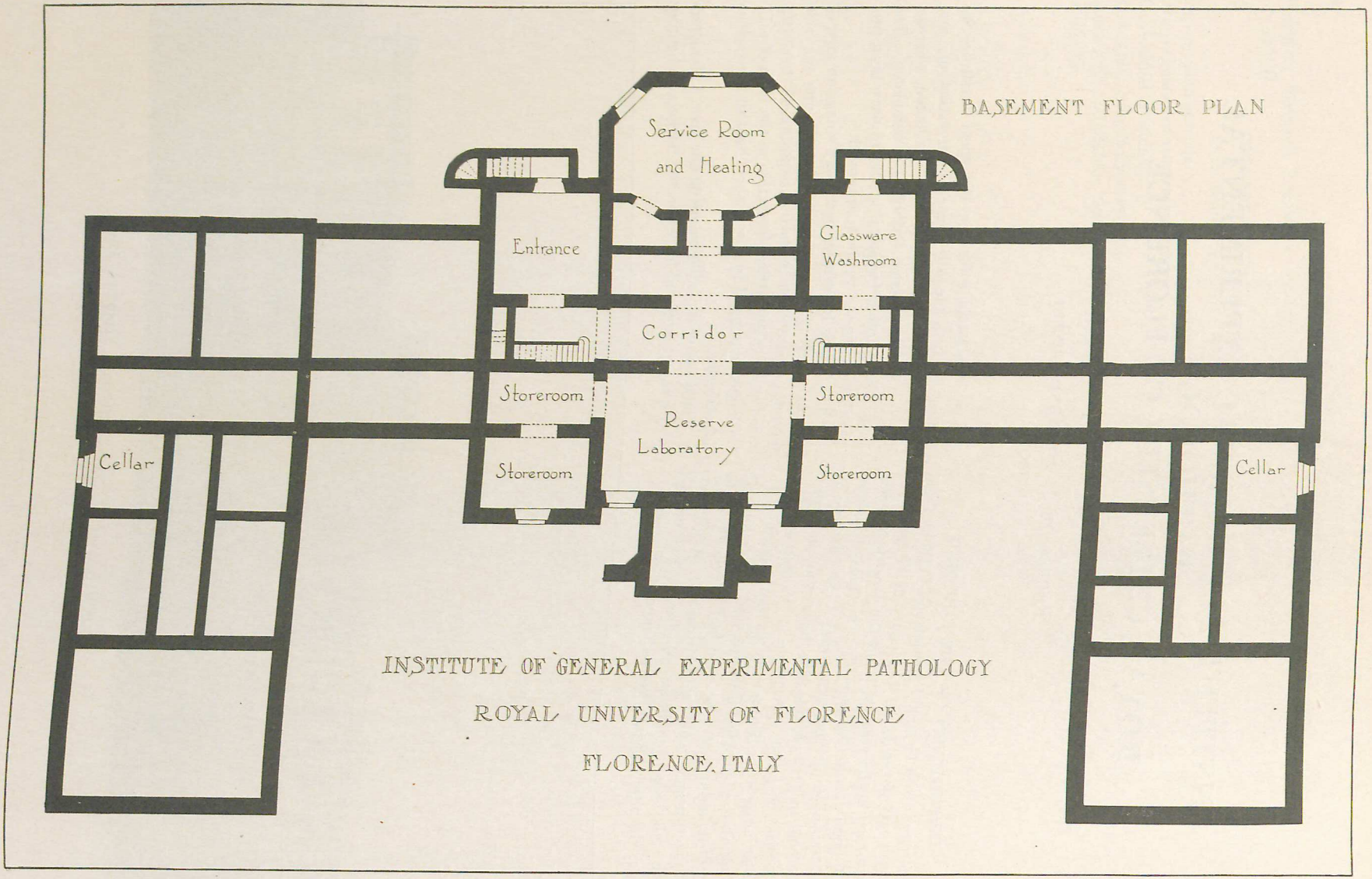
BASEMENT FLOOR PLAN
Service Room and Heating
Entrance
Glassware Washroom
Corridor
Storeroom
Storeroom
Reserve Laboratory
Storeroom
Storeroom
Cellar
Cellar
INSTITUTE OF GENERAL EXPERIMENTAL PATHOLOGY
ROYAL UNIVERSITY OF FLORENCE
FLORENCE, ITALY

Fig. 2

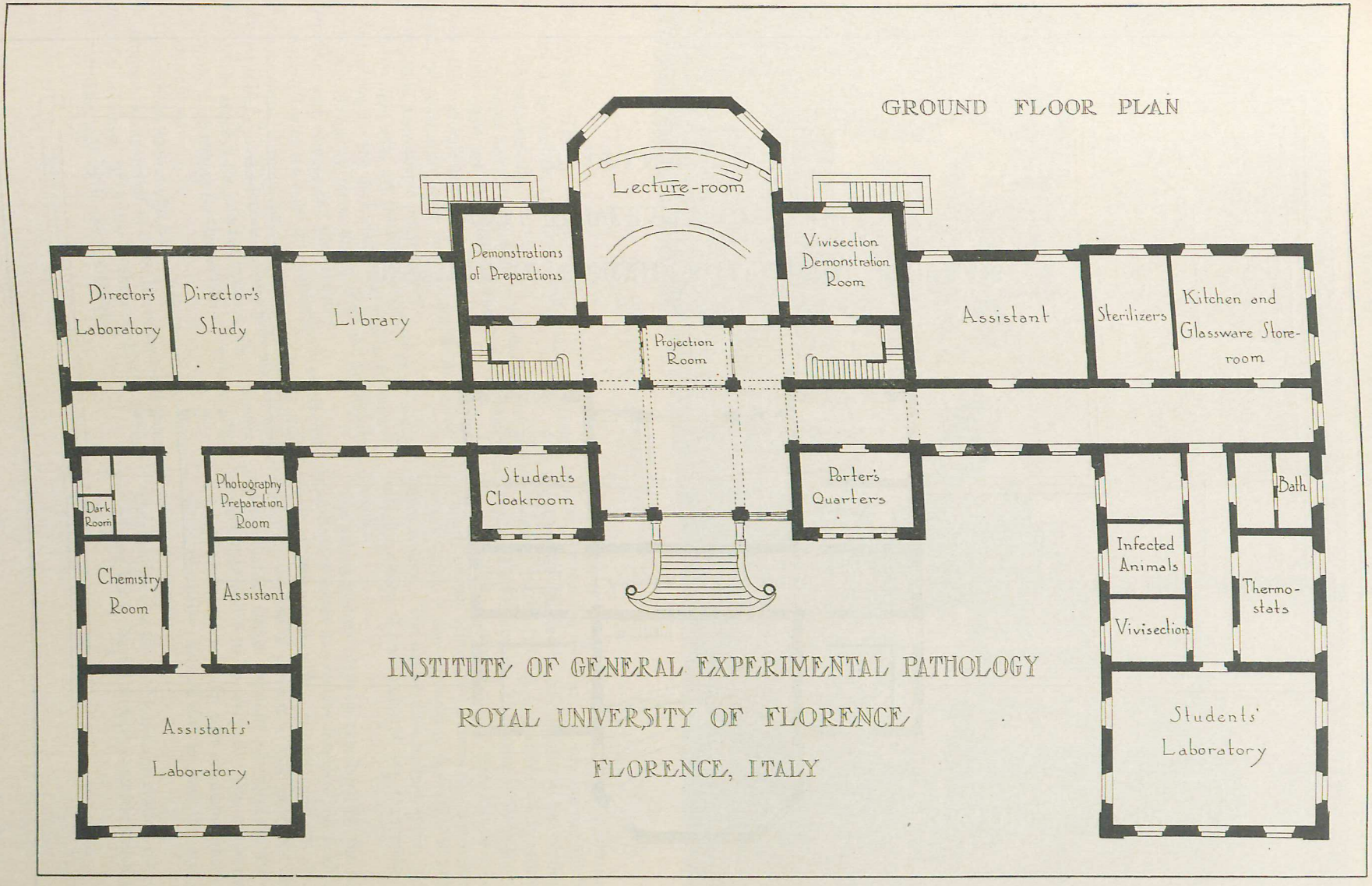
GROUND FLOOR PLAN
Lecture-room
Demonstrations of Preparations
Vivisection Demonstration Room
Director's Laboratory
Director's Study
Library
Projection Room
Assistant
Sterilizers
Kitchen and Glassware Store-room
Dark Room
Photography Preparation Room
Students Cloakroom
Porter's Quarters
Bath
Infected Animals
Chemistry Room
Assistant
Thermo-stats
Vivisection
Assistants' Laboratory
Students' Laboratory
INSTITUTE OF GENERAL EXPERIMENTAL PATHOLOGY
ROYAL UNIVERSITY OF FLORENCE
FLORENCE, ITALY

FIG. 3

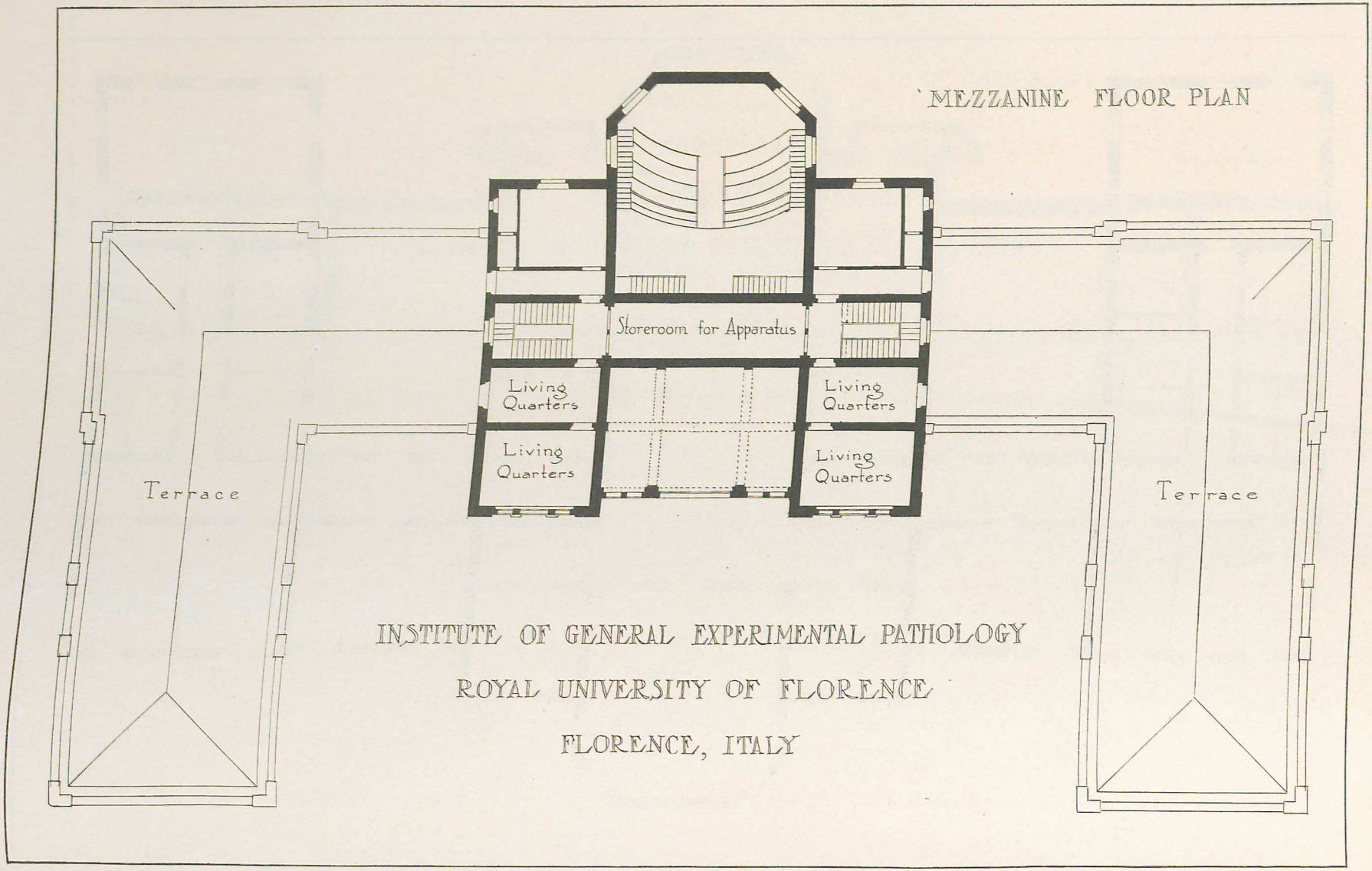
MEZZANINE FLOOR PLAN
Storeroom for Apparatus
Living Quarters
Living Quarters
Living Quarters
Living Quarters
Terrace
Terrace
INSTITUTE OF GENERAL EXPERIMENTAL PATHOLOGY
ROYAL UNIVERSITY OF FLORENCE
FLORENCE, ITALY

FIG. 4

FIG. 5.—ASSISTANTS' LABORATORY

pavements. The center building is of two stories with basement, ground floor, and entresol used as lodgings for the assisting staff.

In the center building, entrance to which is gained by a wide staircase, are the vestibule, the students' cloakroom, the porters' quarters, the lecture-room seating 120 pupils, an instrument room, and a room for the demonstrations of microscopic preparations.

In the right wing are the library, the director's study and laboratory, the dark room, the assistants' laboratory, the chemistry room, and a students' laboratory provided with cement and tiled benches.

In the left wing is a room for sterilization, a storeroom for glassware, a room for experimental animals with special tubular constructions in cement to support and isolate the cages of the infected animals, the vivisection room, and a laboratory for the medical students enrolled for the courses.

The various laboratories have central heating. With a minimum temperature of 5° C. the following degrees may be obtained: 12° in the entrance vestibule, 14° in the corridors, and 18° in the laboratories.

The cubature of the whole building is 5,800 cubic meters, the calories necessary for heating are 105,000. These are transmitted by calculating the loss sustained in the pipes which is 15,000, so that the hourly estimate comes to 120,000 calories. The boiler installed is of the Ciclone type and covers an area of 14.30 square meters, the hourly output being 8,391 calories per square meter. The total area of the radiators in operation is 248.60 square meters. The distribution is from above and is made by means of two pipes of 3½ to 3 inches in diameter.

The tubing system has been calculated by the Rietschel-Brabbé theory at a vertical length of the maximum circuit of 210 meters with a possible pressure of $\alpha = 43$ limiting the loss of pressure at 0.20 m/m per lineal meter so that the almost constant velocity of the water is between 0.12 and 0.10 per second. The whole plant working in harmony in every part circulates when the water in the boiler reaches 45° so that the greatest economy is assured.

The drainage is of the double channel system, the rain water being led in special surface channels which end

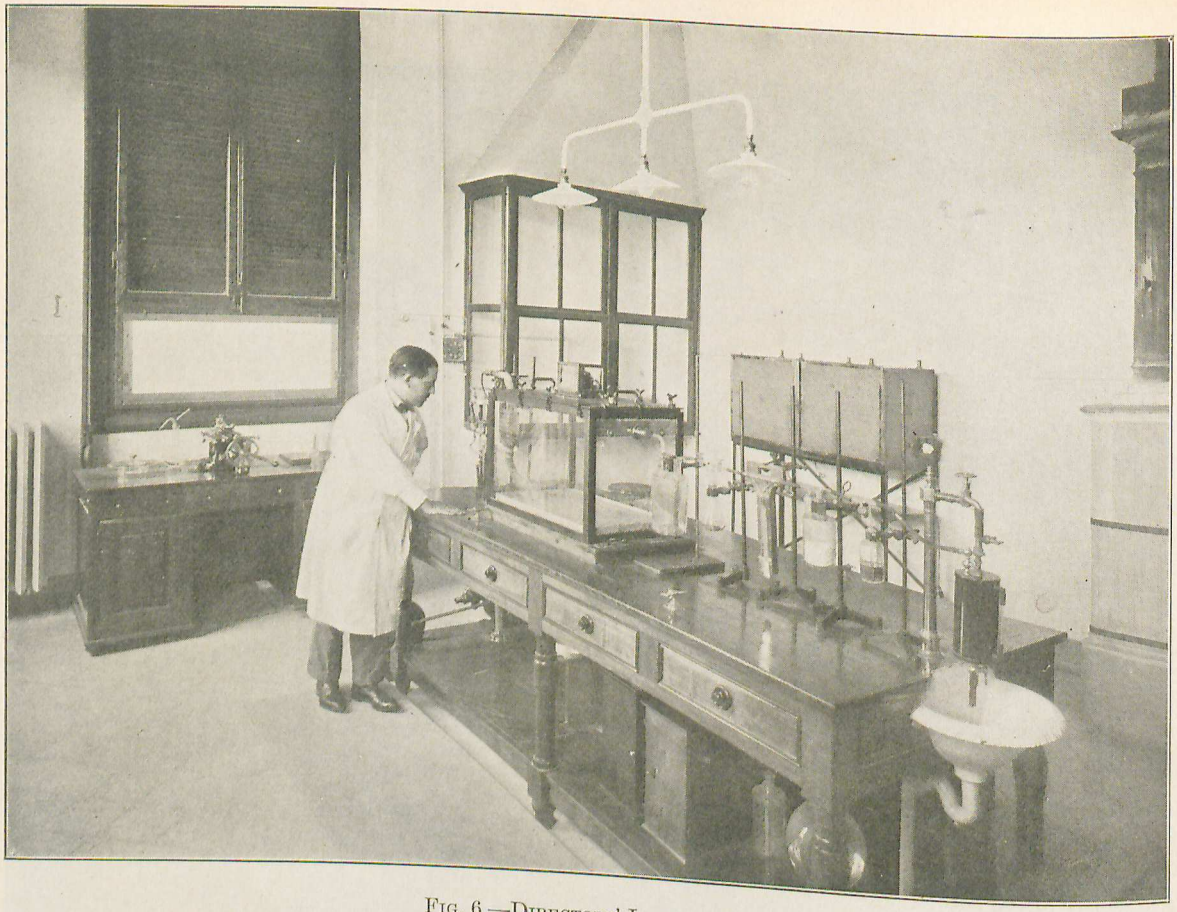

FIG. 6.—DIRECTORS' LABORATORY

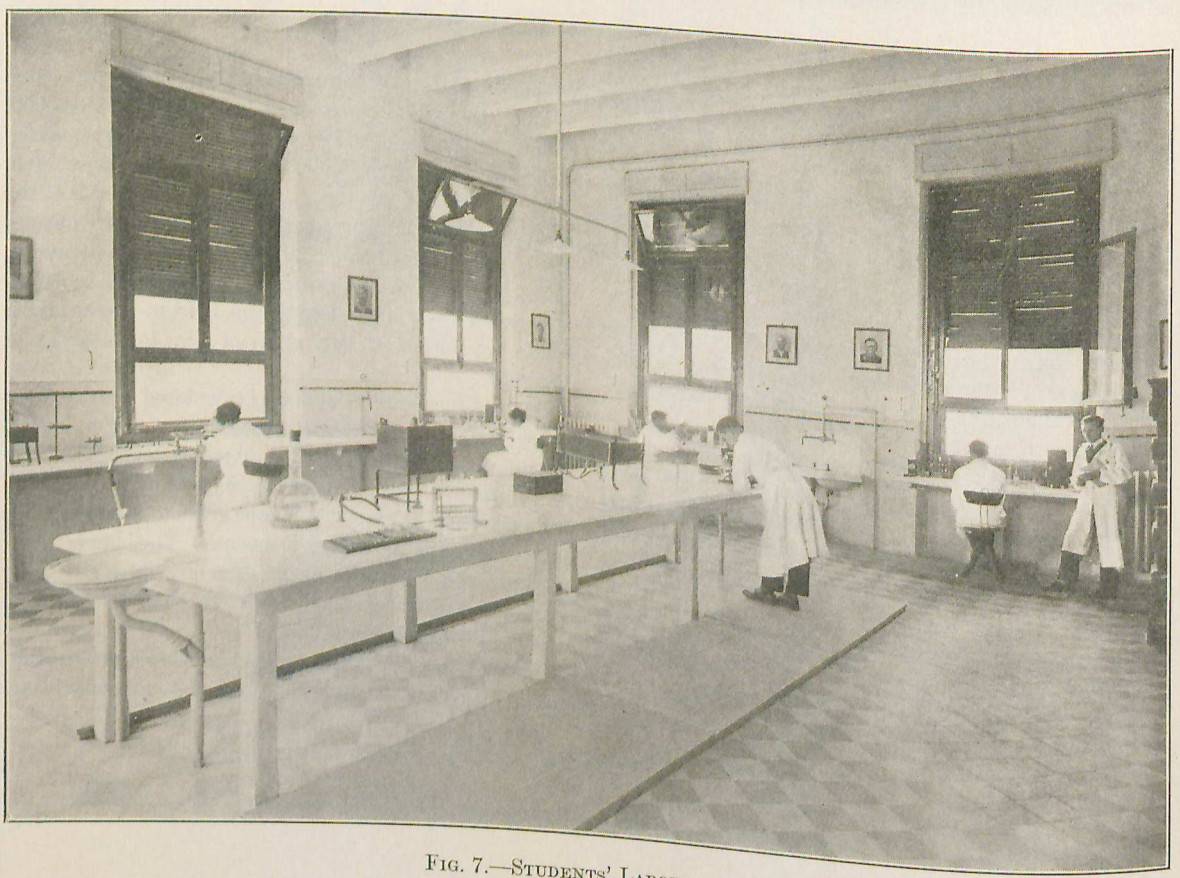

FIG. 7.—STUDENTS' LABORATORY

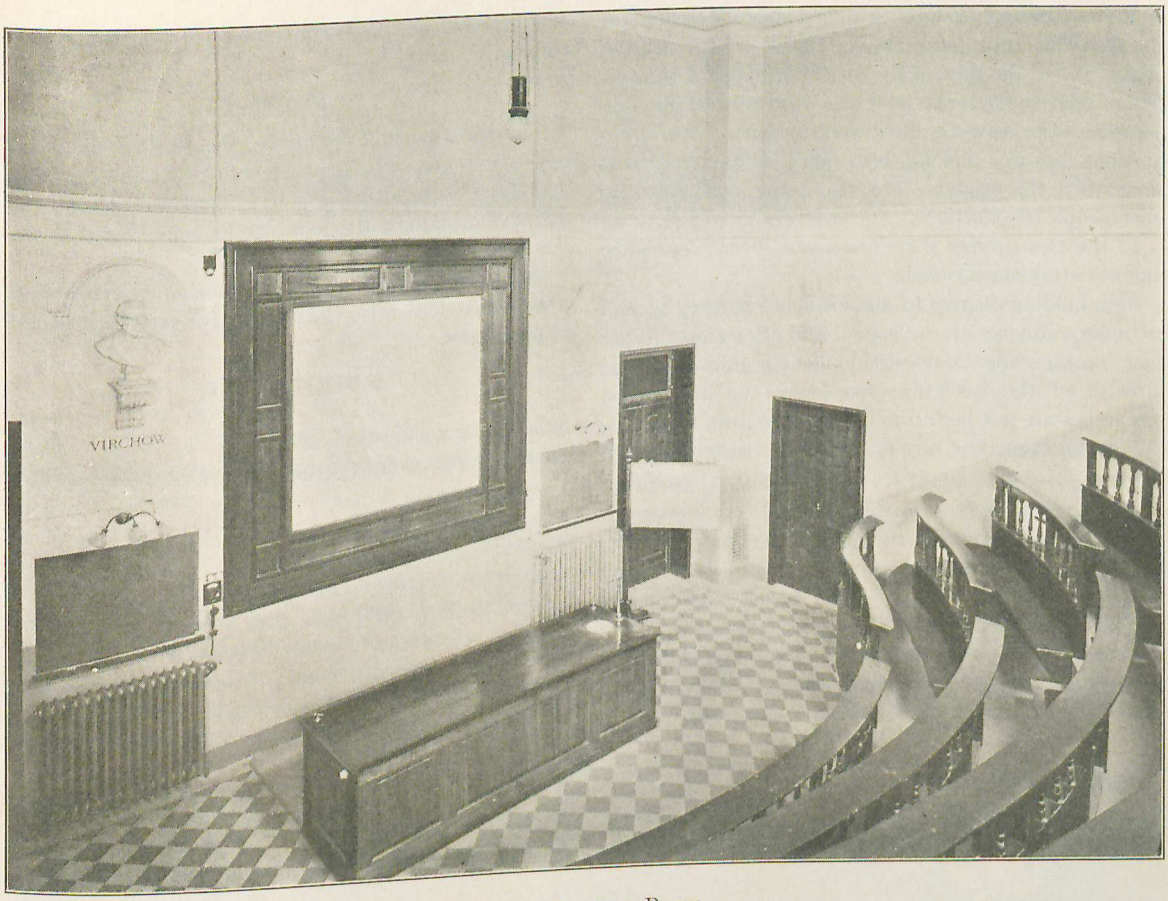

FIG. 8.—LECTURE-ROOM

with appropriate hydraulic intersections in the principal oval collector which receives the refuse drainage of the laboratory, conducted in a tubular system of increasing diameter to the drains of the Florentine Hospital, and hence to the general sewer of the city of Florence. The plans of the biological institutes and of the hospital have been drawn up by Mr. Italo Guidi, architect and engineer, who has been in superintendence of the general work of construction with Professor A. Lustig.

The expenses for the construction and partial furnishing (part of the furnishings and equipment of the old Institute has been utilized) reaches the sum of approximately a million and a half lire, but it is to be noted that at the present day the cost in Florence would be at least five million lire.

METHOD OF TEACHING

The teaching of general experimental pathology in Florence occupies one scholastic year, from November 1st to July and is given three times weekly, whereas in other Italian universities it is given twice weekly. Students of the third year attend these courses (in Italy the study of medicine takes six years; at the end of the sixth year the students take their degree in medicine and surgery and then pass the state examination which qualifies them for professional work).

Enrolled students in the pathology class are obliged to attend the laboratory in turn and to make some laboratory experiments under the guidance of a special assistant in accordance with the program the director of the Institute may compile. It is to be noted that in Florence the teaching of general experimental pathology also comprises instruction in bacteriology and immunology in a separate course, three hours weekly for which the teaching, obligatory for students of general pathology and immunology, is given six hours weekly plus three hours for practical work. In the pathology course, which includes demonstrations, lessons are given principally on the general etiology of diseases and on pathogenesis (the etiology and pathogenesis of infectious and parasitic diseases are expounded in the bacteriology and immunology course), on cellular pathology, inflammation, general pathology of the metabolism, on caloric economy and fever, on the general pathology

of the circulatory system, of the respiratory system, of the digestion tubes and relative glands, of the urinary organs and of the skin, of the secretive glands of the system of relative life forms, and in a word general ideas on tumors. The course is illustrated by microscopic preparations, figures, and lantern views. Regular discussions with the students are also prescribed, aided by microscopic preparations.

In the two courses there are about seventy or eighty medical students enrolled.

Men holding degrees in medicine and surgery as well as undergraduates are welcomed and after a long study carry on experimental research under the guidance of the director of the Institute. Serological or histological researches are not performed in the Institute for profit, but at the request of any doctor, tumors are examined gratuitously, as this is the center for the diagnosis of tumors.

STAFF

The scientific staff comprises: the director, an assistant, who is generally free to devote his time to teaching, and three University assistants. Qualified medical students who frequent the Institute for scientific work also act as assistants.

The technical staff comprises a mechanic, a custodian, a woman to look after the animals for experiments, and two cleaners.

EXPENDITURE

	Lire
Salaries for members of staff	80,000
General expenses for the upkeep of the Institute	50,000

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