FIG. 1 The anatomical institute in Munich. Histology is taught in the dome over the dissecting room.

BOOK REVIEW

DIE NEUE ANATOMISCHE ANSTALT IN MÜNCHEN. Von Dr. J. Rückert. 109 Seiten und 18 Tafeln. Wiesbaden: J. F. Bergmann. 1910.

Professor Rückert's account of the new anatomical laboratory in Munich is of interest to Americans because it will be of great value to those who have similar buildings to plan. We are now in the midst of a development of medical schools which calls for the construction of first-class laboratories by our leading universities. Those who have this task before them will welcome good literature upon laboratory construction.

The first anatomical laboratory built at Munich was planned by Döllinger in 1824. (It may be stated that the anatomical laboratory at Johns Hopkins University is in many respects a reproduction of Döllinger's laboratory.) Soon this laboratory proved to be inadequate, and in 1855 it was rebuilt by Bischoff who made it about as large as

the present beautiful laboratory of the Harvard Medical School. Now there is a third stage in the development of medical education in Munich which has called for this "palace," as the proper home for anatomy in

Fig. 2. Plan of the first main floor showing the distribution of space devoted to the teaching of gross anatomy. The scale is in meters.

a large and great university. This new anatomical institute is an irregular-shaped building, four stories high, and covers an area of about 200 by 300 feet. Like the Harvard laboratory, which is by all odds

our best example, it is a magnificent structure perfect in every respect for the work which is to be done within its walls. However, there are marked differences in the methods and teaching in these two laboratories, which makes Rückert's report especially valuable for the solution of problems of anatomical teaching soon to be encountered by our larger medical schools.

During the past academic year about 2000 students received instruction in anatomy in the Munich laboratory. The main courses given were as follows: Practical anatomy, 900 students; lectures on gross anatomy, 600; lectures on art anatomy, 600; lectures on histology and embryology, 500; exercises in histology, 300; and histological technique, 200. There were also numerous smaller and informal courses given. Since they believe in Munich that the larger a medical school is the better it should be, they have constructed a building in which both large-class instructions and individual instruction are given. One is impressed with what perfection they have met the difficulty of managing large groups, the equipment, machinery and service at the professors' disposal being the best in every respect. The building is immaculate, hygienic and aesthetic, with an ample budget for maintenance and for scientific work.¹ Those who have visited the laboratory are greatly impressed and leave with a feeling that Professors Rückert and Mollier have solved their problem in a most satisfactory way.

The report is detailed and is not only a good morphological but also a physiological description of the building. It is also educational. For these reasons it will be of use to all teachers of anatomy. All sub-departments of anatomy are well represented. The equipment for the preparation of all kinds of anatomical specimens, sections of embryos, museum specimens, skeletons, drawings, photographs, X-rays, experi-

¹ The following figures were obtained from Professor Mollier:

The building cost nearly.....	\$500,000
During the year 1909-10 the budget was, not including salaries.....	27,000
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General service, business manager, porter, technician, mechanic, stoker, etc.....	\$2,200
Heat, light, etc.....	7,600
Library.....	300
Assistants—	
Gross Anatomy (8).....	4,700
Histology (5).....	2,300
For materials, instruments, chemicals, artists, modelers, printing, photography, laundry, scientific apparatus, etc.	
Gross Anatomy.....	7,200
Histology.....	2,700
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Total.....	\$27,000

mental anatomy, etc., is at hand. There is an excellent collection for teaching and a beautiful display of specimens and models for the general public. As is well known, art anatomy is well cultivated and many students of art receive instructions here. In general one wing is devoted to the beautiful entrance and the reception of the students, the other wing to the staff and research, and the center of the building to the teaching of large classes (see figs. 1 and 2). In the sub-basement there are all sorts of cellars, coal bins, boilers, apparatus for ventilation. Above, in the basement there is the public museum, cold-storage rooms for cadavers and for the teaching collection, machine shops, and six residences for servants. The first main floor includes in the center the main lecture room and the large dissecting room built in the shape of a clover leaf. In one wing there are cloak rooms, dressing rooms for both men and women, etc., and in the other, rooms for the staff in gross anatomy. The dissecting room and the lecture hall extend upward through the second main floor, which contains also many rooms for the staff in histology and embryology. The large teaching room for histology is in the dome of the building over the dissecting room on the third main floor. Here there are also a very large demonstration room for histology, dark rooms, photographic rooms, X-ray rooms, etc. Everything is centralized as the main method of teaching is by means of lectures and demonstrations.

The bulk of students are passive; they listen to lectures and they witness demonstrations. Only the better students and members of the staff are active, study nature and are self-instructed, as Döllinger and von Baer would have it, and as is only possible for all students in a small laboratory. Both active and passive methods of teaching anatomy are used upon the same students only in exceptional cases. All in all, they have met the difficult problem of teaching large groups of students exceptionally well in Munich and one cannot study this report nor visit the institute without being greatly impressed with their methods.

Again using Harvard as our best example of an anatomical department with which to compare that in Munich, we find in each two eminent men as professors, and the entire teaching staff numbers about the same in each. However, we find at Munich from ten to twenty times as many students to be taught anatomy as at Harvard. The total cost of teaching this subject at Munich is by no means ten times as great as at Harvard but the equipment for teaching is much greater and the professors receive more than twice the salary that is paid at Harvard. It is clear that in Munich the teaching is fully centralized in the hands of the professors who teach very large classes, while at Harvard it is in sections, and is largely individual and inductive. In Munich all of the elementary instruction is given by the professors, which is not the case in America generally. The Munich method of instruction is more economical than ours, for there the salary of professors is large enough to induce eminent men to do practically all of the work. Therefore, the laboratory is built to aid the professor in his teaching, much more than other members of the staff.

Students who cannot help themselves in München are not stuffed through a Nuremberg funnel; recitations and quizzes are unknown. The teaching is adjusted to the average student, but it is scientific and those who cannot comprehend it are not whipped into line. Just at this point they save enormously in energy and do not commit the sin of trying to make physicians out of the unworthy. Students who desire more instruction than is given in the regular courses, that is, those of ability and originality, are given every encouragement (p. 48). Those who cannot comprehend are constantly eliminating themselves, for they drop out, while the great men of medicine are developed from the group of talented students, through encouragement. It follows that students are not forever being pulled up by the roots to see whether they are growing, but a process of natural selection is at work. Mutations, when recognized, are, however, always preserved.

What has been said above concerns the professors and the students whose work is located mainly in the center of the building at München. But one wing, which is a large laboratory in itself, is reserved for the staff and for research. Here we find the very soul of a laboratory, for it is here that the assistants and advanced students do their work. The greater part of the teaching is done at München by the professors, which in a way protects the assistants whose responsibility is mainly to themselves and to science. They are not worked to death with routine teaching but are permitted to become scientific anatomists, and not drudges. Under these conditions the finest spirit often permeates the entire staff, and for this the professor is largely responsible. After a professor has become well established, his desire for scientific work may wane. Those who have in them some spirit of altruism may continue to contribute to science, but the world, which is not inclined to believe in ideal motives, confounds this with self-seeking ambition. To the extent one's work is reflected in one's pupils and not in one's own publications, to that extent the motive certainly is altruistic. To carry out this ideal the large research wing of the institute exists and it is to be hoped that the altruistic spirit of Döllinger will continue to live in this anatomical palace for generations to come.

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