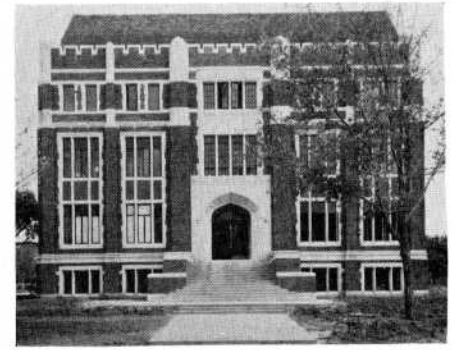


Front view of the new Biological Science building which faces the new South Oval. It is the first unit of a building which eventually will include a similar unit for botany, with connecting link between.



Laboratories, 1936 model

EDITOR'S NOTE—In one of the following two articles, Joe E. Smay, director of the School of Architecture, gives an illuminating description of the new Biological Science building; and in the other, Dr. Aute Richards, head of the department of zoology, tells what the new building means to his department and to the state.

By JOE E. SMAY

CLOTHING a modern laboratory in a vaneer of several centuries ago is not an enviable task, yet such was the requirement when the architect was given the task of designing the new Biological Science building.

The problem was to preserve the harmony of our campus, not through slavish copyism of the authentic Collegiate Gothic style of architecture, but by designing a modern structure whose aesthetic features would not strike an incongruous note on the campus of today.

As finally designed, the building is essentially functional, but it has a simple beauty that blends with other nearby buildings.

Dr. Aute Richards is to be credited with the workability of his fine laboratory building, though he left it to the architect to co-ordinate the details. Dr. Richards had certain definite ideas regarding his new building—ideas which were formulated by years of experience and teaching. He had found that the economic size for a laboratory table was such that 12-foot spacing was essential. Moreover, at those intervals, it was essential that adequate light be provided for microscopic work, that light should be broken up as little as possible.

With those requirements in mind, the architect started to work. Windows must be of unbroken glass area; they should be placed 12 feet on centers; floor construction should be such as to permit holes for plumbing accessories at any desired point. Obviously, the building *is* functional. Form was determined by it, in windows and wall areas, floor and foundation, basement and buttress.

Constant temperature and alcoholic storage needs made a "sub-basement" es-

sential. Cell-like graduate cubicles were properly placed in upper stories to lessen confusion of student circulation. Provision for extensive plumbing to supply laboratories with seven utility services—air pressure, gas, vacuum, hot and cold water and alternating and direct current—left little money for external embellishment.

Ornamentation was achieved through carved bedford stone contrasted with mat-faced brick of mingled hue, concentrated to create emphasis where desired yet distributed enough to give harmony. Thus major ornamentation is concentrated on entrances and buttress caps with sufficient horizontal bands to give unity to the entire structure.

The roof is sharply pitched with graded tones of ceramic tile in mass-like colors of greens at the bottom to vermilion hues at the ridge line.

The west entrance, facing the South Oval, is the one of greatest interest. Directly above on the second floor are library stacks, making necessary a heavy beam-like treatment on the ceiling of the entrance lobby below. The lobby has paneled dado of flemish oak contrasting pleasantly with green tinted terrazzo floor. Corridors are wide enough to contain museum cases which are an essential element in the education of the embryonic zoologist.

We are proud of our typical laboratory rooms. They are light and airy, and are provided with adjustable electric light fixtures especially adapted for microscopic illumination. Many of the ceilings are acoustically corrected, and recessed lockers are plentifully provided for student use. Each laboratory is liberally supplied with utilities.

Third story space is given over to research rooms for graduate students and a rather inadequate space for larger museum specimens. Dr. Richards has hopes yet of additional space for such work. He has worked long and patiently for his building. I hope that space may come while he is here to use and appreciate it.

When you gaze upon the simple beauty and the effective clean-lined solidity of this building, you will not see any melodramatic marble mansion. That was not our aim. Here is a building that provides a maximum of usefulness, with enough or-

nammentation to give it dignity and a measure of beauty.

▲

By DR. A. RICHARDS

As far back as 1918, the construction of a special building to house the department of zoology was strongly urged by University officials, and the legislature at that time appropriated funds for this purpose but the appropriation was vetoed by the governor.

Since that time, the department has been forced to use scattered and inadequate quarters in numerous buildings over the campus, although the growing need for space was emphasized by officials in the biennial reports to the legislature on University building needs.

When the state legislature in May, 1935, appropriated \$250,000 for the Business Administration building, President Bizzell saw an opportunity to present to the Public Works administration in Washington a request for sufficient funds to build the first unit of a building for biological sciences. The request was approved, and after a harried six weeks of work by Architect Joe E. Smay and his staff, the contract was let and work on the building actually began late in February, 1936.

The University was fortunate in the choice of both architect and building company, and much of the credit for the satisfactory design of the building is due to Mr. Smay and his staff. In our case, the architects were perfectly willing to plan the outside of the building around the inside, rather than to insist that the uses of the building should be adapted to the external architectural design. The result is a building which is commodious, adequate for immediate needs, and adaptable to future construction and modifications to meet the changing needs of science and the growing needs of a great University.

The portion of the building which is completed now is a single wing of a plan which has taken shape in the mind of the president of the University as an imposing laboratory for biological sciences on the campus. The complete building will be in the form of a capital "E" with the three portions connected on the west side and its main facade facing the south Oval.

The central wing will house a natural history museum and will have a biology library reading room and a large lecture room. The south wing will repeat for plant sciences what the north wing is for animal sciences. In addition there is to be built a vivarium for the zoology department and a greenhouse for the botany department. The general plan calls for, eventually, a small biological preserve both for plants and for the development of animals, especially invertebrates and the lower vertebrates insofar as it is feasible, in relation to a natural Oklahoma environment.

Function of the building is symbolized in a series of carvings of different animal types, formalized and executed in stone by Joseph R. Taylor of the art faculty. Mr. Taylor achieved what we regard as a very distinct service in creating artistic form and design in his carvings without loss of the essential scientific accuracy. Over the east door are a series of forms representing the lower invertebrates; over the north door the progress of the animal kingdom, arranged according to the scale of complexity, is shown, and a shield directly above the arch shows a cell in mitotic division, representing a phenomenon basic to all living organisms. Over the west door are sculptured a succession of forms representing the different groups of the vertebrates in order of evolutionary advancement.

The building comprises five floors—sub-basement, basement, two main floors, and a top floor which is much too attractive and too useful to be designated an attic.

The unit system of construction of laboratory rooms has been followed. The experience of other institutions has shown this to be the wisest plan for the development of a zoology laboratory. Rooms are 22 by 36 feet, and are intended for 24 students each, this being the largest number which a demonstrator can direct efficiently.

"One feature of the building which ap-

pealed to me was the moderate size of the laboratories," commented Dr. Clarence L. Furrow, '21as, '22M.A., now professor of zoology at Knox college, after visiting the building.

"This will tend to eliminate over-size laboratory sections. I appreciate this feature especially since our large laboratories are nearly always loaded to capacity, with 42 or more to the section. I could not resist getting enthusiastic over the basement floors with their storerooms, constant temperature rooms, dark rooms, etc., all of which are so necessary in the present period of biological advancement. The abundance of smaller rooms delighted me, too, for I wish so often that we had a small room or two for some of my work at Knox."

Laboratories are provided for general zoology, comparative anatomy, ecology, physiology-genetics, embryology, and cytology. There are also other laboratories used by the Department of Botany. There are two lecture rooms accommodating one hundred students each, one classroom accommodating about forty-five students, and a seminar room for conferences and advanced classwork. Laboratories and classrooms are mainly on the lower floors.

There is a library in the west end of the second floor, consisting of a stackroom 27 by 18 feet, a reading room 36 by 22 feet, and a closet for the librarian's records. The total number of items in the biological library is about 7,500. The library takes 241 serials, which might sound impressive, but is small compared to the 1,192 journals received regularly by the library of the WoodsHole Marine Biological station.

One single large museum room for exhibit is available now, on the top floor. This floor also includes a series of graduate cubicles to accommodate a maximum of twenty graduate students. In the center of the floor is a series of service rooms. Instructors' offices are for the most part on the first and second floors.

The sub-basement accommodates specimens preserved in alcohol, and other important collections. Four constant temperature rooms have been built in the sub-basement to make possible experimental work at controlled temperatures. There is a special balance room, where a concrete shelf that is an integral connection to the building's footings provides an extremely rigid base for fine balancing work.

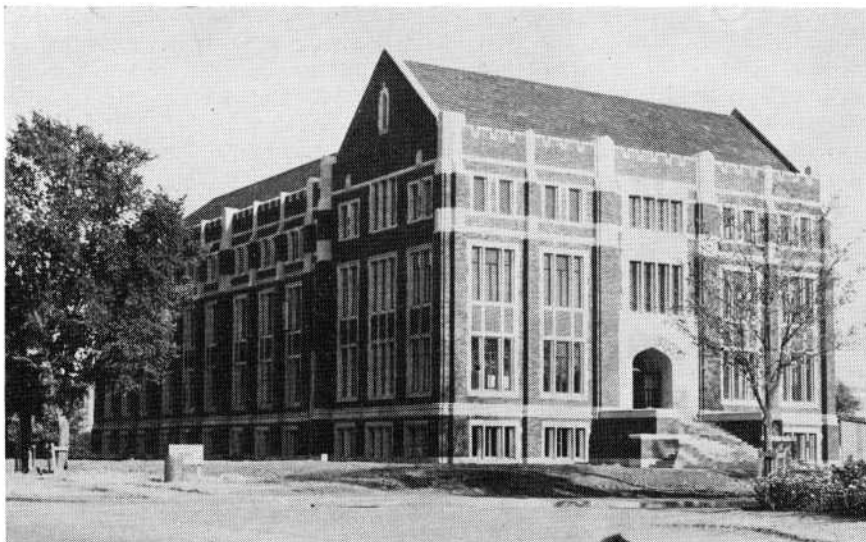
Although the new building offers a great advance in facilities of the departments of zoology and botany, it is not adequate yet for their full needs, and a greenhouse must be built to care for plant work, as well as a vivarium for living animals. While these buildings are in progress the botany department continues to use its old greenhouse attached to the Pharmacy building, and the zoology department is making use of the old zoology laboratory, the former wooden gymnasium building, as a breeding house and animal room. This building is being shared with the University band, which is to use the west half of it.

Many things need to be accomplished here before our biological work can be brought up to most modern standards. During the earlier period of development of biological laboratories, emphasis was on morphology and the study of preserved animals and plants. The modern trend in teaching and investigation is toward the study of living organisms under natural conditions, and however important anatomical information may be as a foundation for the study of the real plant or animal, it is at best only a foundation.

The biological departments of the University are now as adequately housed and equipped for morphological study and investigation as were the corresponding departments in the best universities in America 25 years ago. In the meantime, however, these institutions have progressed, and they are carrying on lines of work impossible for us even with our expanded space.

The biological departments can do their best work only in connection with facilities for the study of the wild life resources of the state. An adequately staffed and equipped biological survey is a necessity if the departments are to make their fullest contributions to the state.

This is important, not only from the viewpoint of the University's reputation as a scientific research center, but from the viewpoint of finding the practical answers to numerous problems involving animal and plant life in Oklahoma.



This angle view of the new Biological Science building shows the long side of it which runs back along Brooks street. The front faces west on the South Oval.