

THE MUSEUM OF NATURAL HISTORY OF THE UNIVERSITY OF ILLINOIS¹

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In these days of strife, when Democracy, Autocracy, and Anarchy are fighting and seeking to control the world, such an institution as a museum, devoted to the peaceful work of interpreting nature's laws, is likely to receive scant consideration. It will be remembered, however, that early in the late war, England for a time closed the museums, art galleries, and kindred institutions, and otherwise curtailed the usefulness of these instruments of education; but the British public sent forth such a protest that the government hastened to reopen the halls and to encourage the people to visit such places, justly realizing that at this particular time such interesting places for healthful recreation are of the greatest value. And not long since, a report came from France, when a vindictive enemy was pounding for admittance within seventy miles of its gates, that a new museum had been founded to exhibit the history and use of the horse—from the time this animal roamed the plains and swamps of America, in those far off Eocene days when it was no bigger than a fox and had five toes, to the present time when it has become one of man's most faithful and important helpers. With these examples before us of museum activities conducted under the stern stress of war, no apology for such an institution seems necessary.

VALUE OF MUSEUMS

Museums differ greatly in their relative values, but all, if rightly conducted, have a very real value to the community. Dr. G. Browne Goode, considered by many the father of the modern American museum, has defined the museum as "a collection of well written labels illustrated by specimens." And the noted English museum expert,

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Sir William H. Flower, says of museums and their purposes, "It is not the objects placed in a museum that constitute its value, so much as the method in which they are displayed and the use made of them for the purpose of instruction." This definition of the veteran museum administrator is perhaps the keynote to the modern expansion of the museum idea.

Museums are of many kinds; some are devoted to exhibitions for the general public and are supported by municipalities; others belong to learned societies, universities, and even private individuals. At the present time more than 600 such institutions, large and small, are known in the United States, and many exist in Europe and other parts of the world.

But it is the university museum to which I wish to direct your attention at this time. It has been urged by some educators that the methods in use in the larger museums of the great cities are not applicable to a university museum; and one wonders why such an opinion should be held because the new museumology is highly educational and of all places it should best fit into the educational plans of a seat of learning, such as a university.

The great public museums, during the past twenty years have passed through a period of active evolution and they have now attained a measure of organization which makes them efficient factors in the educational systems of the larger cities. University and college museums are now passing through the same period of evolution. A few university museums have forged ahead, but the majority have scarcely passed the old stage of the cabinet of natural history so much in vogue two generations ago.

What, then, should be the character of the natural history museum of a large university and how may the collections and exhibits be made of general educational and instructional value? The exhibits should be so arranged as to bring out clearly the phenomena of life observed in nature. These may be a direct help to the instructional staff by providing illustrative material amplifying the information given in the texts and lectures; a synoptic collection, for example, may be so arranged as to give the student a birdseye view of the whole animal kingdom such as would

be impossible from the study of texts alone. Such an exhibit is made intelligible by means of models, drawings of the animals, diagrams of their structure, and descriptive labels binding the whole exhibit into a comprehensive unit.

The student may get from the museum an interpretation of the many phenomena observed in nature which are totally incomprehensible to him without such aid. The interrelationships of animals and plants may be shown by means of groups, transparent photographs, and specially arranged specimens. Under the skilful hands of the artist, the sculptor and the naturalist the animals and plants in natural groups are made to live again and to show in an interesting manner their modes of life, their associates, both friends and enemies, and the working of the great biological laws that are ever adjusting these creatures to their environment.

The testimony of the rocks, under the hand of the trained geologist, may tell us of the great drama that has been played during the long period of time that has elapsed since the dawn of life on our globe, and by the proper arrangement of the objects that we call fossils, which are the bodies of the actors, there may be unfolded a continuous picture of the different acts in this great drama, during which life has passed through so many changes and has finally culminated in Man, who thus boldly chronicles the history of his long pilgrimage.

The museum may not alone be confined to the exhibition of those objects related to pure science. Here the student taking a commercial course may study the evolution of some common commodity from the raw material to the finished product—pearl buttons from river mussels and pearl oysters, silk from the silkworm, cloth from the cotton field, oil from petroleum, and so on down the list. And the farmer may come to the museum and see in a group the enemies of his corn field, his orchard, and his grains, and he will be able to comprehend better, after seeing the carefully prepared groups, just how the insect damages his crop and also how best to combat this enemy. Of course, all this information is available in the literature, but a model will give at a glance more real information than pages of description.

The museum is also of real value to another class of students not usually considered when thinking of a museum of natural history, namely, the students who casually visit the museum out of curiosity, invited by the queer and unfamiliar objects, or from the "exploring" instinct so deeply instilled in the human species. These students, if interested, will acquire a fund of facts relating to nature which will be second only to that acquired by the regular students taking courses. In passing, it might also be added that the exhibits are of value to another class of students, those taking English composition and related subjects, for the objects in the museum are very suggestive for studies of this kind. Some of these classes in the University of Illinois have already made use of the museum for this purpose.

And thus one might go on enumerating the various subjects that can be treated in a museum of natural history that are of value to a university, but the inference is plain and need not be dwelt upon further. In addition to all that has been said, the museum affords a place for quiet and healthful recreation and often provides a stimulus to the enthusiasm of many students. It must be remembered, also, that a museum is always on the job, continuously teaching all who will but tarry long enough to examine the exhibits. They are thus perpetual instructors.

AIMS OF THE UNIVERSITY OF ILLINOIS MUSEUM

It is the aim of the Natural History Museum of the University of Illinois to provide all that is inferred in the foregoing discussion. The lack of room, aside from insufficient funds, is the chief drawback to the proper expansion of the museum exhibits. It is probably not generally known by either the student body, the alumni, or even the faculty, that the museum possesses enough material at the present time to require a building as large as the University Library for its proper display.

It is quite pertinent to note here briefly the character and extent of the collections now in the possession of the University Natural History Museum. Perhaps of chief interest is the material brought back by the Crocker Land Expedition from Northern Greenland. This includes many fine specimens illustrative of the culture of the

north Greenland Eskimo, embracing weapons of the chase, wearing apparel, domestic implements, games, toys, etc. This collection, contrasted with a somewhat similar one from Point Barrow, Alaska, represents quite well the difference in the cultures of the two groups of Eskimo represented by these regions. From this northland the expedition also brought back enough musk-oxen, caribou, polar bears, blue foxes, and other smaller mammals as well as birds, to make a very instructive exhibition of the fauna of this Arctic region.

Of insects the museum possesses the great Bolter collection containing upwards of 100,000 specimens of insects from many parts of the world, but particularly representative of North American species. Stored in the Physics Building are many fine specimens of corals, echinoderms, mollusks, and other invertebrates, from many parts of the world, but chiefly American, which aggregate 50,000 specimens. These include an almost complete series of the Unionidae or fresh water mussels of our rivers obtained by that veteran collector, Mr. A. A. Hinkley. In addition there are several thousand fossils from American formations. It is not making too large an estimate to state that the University Museum possesses at the present time about 200,000 specimens as a nucleus with which to build up a modern Natural History Museum.

To fulfill its ideal function the museum must be developed along two quite distinct lines. First, the exhibit series, which may be made of educational value to many departments in the University. This series should contain synoptic collections of both living and extinct animals and plants; evolution series showing the development of many forms of life through past geological periods; series illustrating correlation of structure with function; geographic distribution series; habitat groups showing the ecological relation of animals and plants to their environment; showing the relation of natural objects to agriculture, industry, and commerce; series showing the geological history of the planet upon which we live, including the minerals and ores obtained from the rocks; and many other topics which can be treated by the exhibition method.

The second line of development is the study or research series. This should include large series of specimens,—animals, plants, fossils, minerals, etc.,—which may be

used for research purposes and which would be the basis for scientific papers. It is highly desirable that the University should accumulate a large amount of research material which has been used for the advancement of Science, that it may draw men to study this material in connection with further advancement of knowledge. Such collections should be placed in comfortable rooms, systematically arranged in easily accessible cases, the different subjects occupying separate rooms. The possession of type material places a museum in a position of value and usefulness not possible for an institution not having such collections. A good beginning has been made in this line of development and new material is being added very rapidly. Collections which have formed the basis for one large volume and a number of smaller papers are now in the research series of the Natural History Museum.

The present available exhibition space in the Natural History Building is limited to the small museum hall and the corridors on the three floors of this building. A synoptic series of animal life, including both living and extinct groups, is being prepared and is partly completed and on exhibition, which will fill half of the space in the museum hall. This includes selected, typical specimens representative of the higher groups; models, diagrams, drawings, and full descriptive labels. A model showing the twelve most injurious insects that infest the corn plant has been prepared, the group containing models in wax of the corn plants with the insects in all stages of growth feeding upon the plant. Carefully prepared labels describe the insects and their work and are made simple enough for the average farmer to understand. A habitat group, with a photographic enlargement of the old Brownfield woods near Urbana for its background, and with the plants characteristic of such a locality, shows the animal life in and about an old decaying log. Other exhibits along these educational lines are in preparation.

A number of our American universities possess museums of large size,—Harvard, Yale, Princeton, Pennsylvania, Chicago, Michigan, Iowa, Kansas,—and some of these museums contain material that has formed the basis for classical works in the Natural Sciences. Why should not Illinois also be numbered among these universities with a museum containing valuable and interesting collections

made available for the lay visitor, the undergraduate, the research student, and the scientific specialist? And why may not Illinois be a leader in museum work among the universities? The time is not far distant when a museum building will become a necessity on the campus, a building which may not be numbered among the largest of museum edifices, but which may well be one of the best buildings devoted to the particular needs of a university community and an efficient aid to the educational forces of the University in nearly all its departments.

To hasten the realization of the aims outlined, may I ask the cooperation of the members of the State Academy. There are doubtless collections in different parts of the State that could be obtained if their owners knew that special attention is now being given to the development of the museum along modern lines. Many of the members may be in position to make collections during their summer vacations and these might form really valuable additions, especially if the material came from a locality which was little known scientifically. Much of the material obtained in this way is of considerable research value, frequently revealing new species to Science or adding information of value concerning geographical distribution or variation. The alumni of the University should be especially active in the museum's behalf, as is the case with many of the universities previously mentioned.

In closing let me express my appreciation of the labors of my predecessor, Professor Frank Smith, of the Department of Zoology, who laid the firm foundation for the development of the museum along the lines outlined above, and who established a standard of equipment and a system of record that has made possible the present and future development along the most approved modern lines.