# SCIENCE

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## EDUCATION AND EXPLORATION BY THE AMERICAN MUSEUM

THE report of President Henry Fairfield Osborn, of the American Museum of Natural History, for the year 1921 is a concise recountal of the accomplishments of the institution and records the firm establishment of the policy inaugurated in 1917—the policy of a broader and more varied service calculated to prove of scientific and educational value, not alone to the citizens of New York, but also to those of the entire nation.

The most conspicuous event of the year last past was a favorable attitude adopted by the city administration toward this institution—the decision to begin the construction of additional wings which have been urgently needed for more than fifteen years, but which because of the war and the high cost of building immediately following, it was found impracticable to start before the current year. At a meeting of the Board of Estimate and Apportionment, held on December 26, 1921, the sum of $1,500,000 was unanimously voted to erect the southeast wing on Central Park West and the southeast court building adjacent thereto as planned in 1875. In providing these additional halls, the city administration is liberally supporting the public educational activities of the museum's work. During the past year the museum, which serves alike the schools of the five boroughs, reached 1,500,000 school children, 869 natural history collections were in use among the elementary schools. This is exclusive of the number of lantern slides distributed which illustrate the work of the museum in all parts of the globe and provide the latest accepted methods of visual instruction in geography, zoology, forestry and history, totaling 210,000, or a service of 182 schools. The number of schools reached outside the museum was 477 in all of the boroughs, and the number of scholars was 1,247,515. By the methods initi-

ated in this museum, the observations and results of its field workers in Australia, Asia, South America, Africa, Polynesia and Western Europe are made acceptable to the use of the teachers of our public schools in less than twelve months, and this phase of the museum's activities has far outgrown the space capacity of the insttution to care for it properly. On a single day as many as 2,500 boys and girls may be found in the museum preparing for their examinations. For this purpose adequate space must be provided. Still greater care is necessary for the large classes coming for a day from the outlying sections of the city or from neighboring cities in New York and New Jersey, which also are finding the museum in increasing numbers. To care properly for this enormous number of school children, a special school service building has been planned in the southwest court, to be devoted exclusively to their use.

On April 21, 1922, the Board of Estimate and Apportionment of the City of New York unanimously appropriated $570,000 for the construction and equipment of the School Service Building of the American Museum of Natural History. This action of the city authorities opens a new period in the history of the museum's relation to the schools and is significant appreciation of what the museum is doing in bringing nature to the boys and girls of the city. The work of the museum with the schools during the last eighteen years has been carried on with inadequate facilities. The Department of Public Education, which has immediate charge of these activities, has been housed, for the most part, in corridors, basements and anterooms in various parts of the present edifice. In fact, under the circumstances, it is surprising that the museum has attained the position of usefulness that it now holds in the educational system of the city.

The School Service Building is to be located in the southwest court of the museum. It will be a four-story and basement structure, connected by covered bridges in the first and second floors with the north wing on the east and the southwest wing on the west. The basement and the first floor will be 160 x 88 feet, and the second, third and fourth floors will be 160 x 53 feet. The height from the basement to the peak will be 91 feet and the cubical space approximately 1,000,000 feet. It is estimated that from 3,000 to 5,000 children may be properly taken care of daily in the School Service Building, or from ten to twenty times the number that the present facilities of the museum will permit.

How highly the educational service of the museum is estimated may be inferred from a reading of the following resolution adopted by the Board of Superintendents of the Board of Education of New York City on March 27 by way of endorsement of the application of the American Museum for funds for the School Service Building:

*Whereas,* The American Museum of Natural History since 1881 has been conducting educational work with teachers, and since 1904 has been supplying the public schools of the City of New York with lectures and with nature-study material of all kinds, with lantern slides and other visual education aids in teaching geography, history and natural science; and

*Whereas,* The American Museum, entirely at the expense of the trustees, through its explorations in all parts of the world, is bringing to New York rare and valuable educational specimens which are made freely available for the use of the teachers of the city; and

*Whereas,* The museum is lacking in adequate facilities for receiving the school children who visit the museum and for housing the administrative work connected with its operation with the public school system of the city, and has therefore made application to the Board of Estimate and Apportionment for the appropriation of $570,000 for the erection of a four-story School Service Building in the southwest court of the American Museum of Natural History.

*Resolved,* That the Board of Superintendents of the Board of Education of the City of New York desires to record its unreserved approval of the valuable service which the American Museum is rendering to the schools of the City of New York, and heartily indorses the plans of the trustees for making it more thorough and effective and hereby recommends to the Board of Education that it request favorable consideration from the Board of Estimate and Apportionment of the museum's application for funds to erect and equip the School Service Building.

While the practical side of the school work

of the museum is cared for by the city, the scientific side is entirely cared for from trustees' funds. It is interesting to record that during the past sixteen years the total amount contributed by the trustees, members and friends of the museum to the endowment and to the enrichment of the collections was $11,871,722. Although the present city government has been more liberal than any of its predecessors, providing for annual maintenance the generous sum of $352,025.52, the generosity of citizens of New York so far exceeds this provision by the taxpayers that it nearly doubles it. Thus, for every dollar contributed by the city from tax funds, the citizen receives $3.00. The growing appreciation of the museum by the public is shown by the attendance which has risen from 613,152 in 1910 to 1,174,397 in 1921. Sunday opening, which was one of the most warmly debated questions in the early history of the museum, leading to the resignation of some of our strict Sabbatarians, during the year 1921 totaled 327,888, showing that the museum is sought for wholesome and inspiring education during the Sunday afternoon hours by constantly increasing numbers. The Sunday attendance during January, 1922, alone has been 51,062.

Like all other educational and municipal institutions, the operating cost of the museum has doubled during the last decade. This increase, however, is not due to the increased number of employees or to extravagance, but to the necessary increase in salaries and material required for the proper upkeep. For the year 1921 the museum experienced a deficiency of $88,249.48, to meet which $56,000 was contributed from the accrued interest on the Margaret Olivia Sage Fund and $32,348.42 was contributed individually by the trustees. For the year 1922 the trustees have reluctantly cut down the work of the museum by the amount of $81,059.56, and have guaranteed to raise $40,000 through their personal contributions and the gifts of members and friends. Realizing that this deficiency can only forever be obviated by increasing the general endowment fund and that for the immediate future the sum of $2,000,000 should be raised, the trustees announced at a meeting of the executive committee of the board, held on May 20, 1922, that their efforts to raise $2,000,000 during the present year by public contributions to its permanent endowment fund were receiving united and generous support from public spirited citizens, who, after a thorough investigation of the educational activities of the museum, were convinced of the worthiness of the undertaking.

The initial subscription of $250,000 came from Mr. George F. Baker, who, in addition to his previous gifts, now contributes that sum to the capital fund of the museum, the income from which is to be at the disposal of the trustees. Closely following Mr. Baker's gift, Mr. John D. Rockefeller, Jr., wrote to President Osborn that he long had felt that the American Museum of Natural History was an important factor in the educational and scientific life of New York City, and that it gave him pleasure to contribute $1,000,000 toward the permanent endowment, the income of which was to be available for any of the current needs of the museum. Mr. Rockefeller stated that he realized the unwisdom of seeking to forecast the requirement of the distant future, and was fully conscious of the dangers attendant upon the establishment of any endowment fund in perpetuity and, therefore, it would be agreeable to him, if in the judgment of the trustees it was wise, to have the whole or any portion of the principal of this gift devoted to any of the corporate purposes of the museum. To the above sums is to be added the amount received from the Eno bequest by which, according to the settlement of the contested will, the museum receives $272,000, of which $200,000 is to be added to the endowment fund.

Through the generosity of friends and from museum funds, work in the field has been undertaken with renewed efforts. The third Asiatic expedition, under the leadership of Roy C. Andrews, has begun preliminary work in China and has already forwarded valuable zoological material. This expedition will be in the field for five years. Rollo H. Beck, working under the auspices of the Whitney fund, is securing thousands of specimens of bird, animal and plant life from the remote islands of the South Seas. In Australia, Dr. W. K. Gregory and Harry C. Raven established most cordial

working relations with the government authorities and as a result the small collections of fauna of that continent which we now possess will be greatly enriched. Captain Harold E. Anthony and George K. Cherrie, on an expedition to Ecuador, secured 4,000 specimens of birds and mammals. On this expedition the little-known country of the head hunting Jivaro Indians was penetrated, and valuable photographs secured. In Africa, Carl E. Akeley has been successful in obtaining a family of five gorillas. With the photographs and accessories which this well-known taxidermist, sculptor and hunter has secured, it will be possible to complete the finest group extant of these man-like apes. Entomological work has been carried on by Dr. F. E. Lutz in the Pine Barrens of New Jersey and Northeastern United States. Ethnological studies were made in Utah, New Mexico, California and Peru. By far the most important work in this field of science has been made possible through the funds provided by Mr. Archer M. Huntington for the completion of a restoration of the ruins at Aztec, New Mexico. Earl H. Morris, who has this work in charge, has forwarded highly important specimens found in these ruins and his observations will go far toward establishing the cultural area of the early inhabitants of our great southwest. Mr. Barnum Brown has sent important paleontological specimens from Egypt, Abyssinia and India, and Albert Thomson has continued, with success, work in the fossil fields of Nebraska. Through exchange and by gift, as a result of the Neolithic tour in Europe. Professor Henry Fairfield Osborn secured collections enriching our European archeology and established most agreeable working relations with eminent scientists of England, Norway, Sweden, Denmark, Belgium and France, to the end that new discoveries bearing on the antiquity of man in those countries will at once be forwarded to the American Museum.

At the beginning of the year the trustees recommended the grouping of the scientific work of the museum into four divisions in order to harmonize the work of the different departments, and in order to produce greater efficiency and economy for the future harmonious development of the exhibition halls of the museum. The following scheme of work is now in effect:

I. *Division of Mineralogy, Geology, Paleontology and Paleography:* Curator William Diller Matthew, F.R.S., in charge. Under leadership of Curator Matthew, Curators Whitlock, Hovey, Reed, Osborn, Granger and Brown will confer and cooperate in the development of their respective subjects and exhibition halls.

II. *Division of Zoology and Zoogeography:* Curator Frank Michler Chapman, N.A.S., in charge. This division will include mammals, birds, reptiles, amphibians, fishes, insects and marine and terrestrial invertebrates. Curators Andrews, Anthony, Gregory, Chapman, Murphy, Noble, Dean, Nichols, Gudger, Lutz and Miner will confer and cooperate in the development of their respective lines of exhibition and scientific work.

III. *Division of Anthropology:* Curator Clark Wissler, Ph.D., in charge. This division will be coordinate with the present Department of Anthropology but will include direction of the Galton Laboratory and progress of the Galton Society, also William K. Gregory as representative of comparative anatomy, J. Howard McGregor in human anatomy, Honorary Curator Osborn in geologic relations and prehistory of man.

IV. *Division of Education, Books, Publication and Printing:* Curator George H. Sherwood, M.A., in charge. This division will include the officers and chief of the Department of Public Education, of the library, of *Natural History*, of the printing and publication departments, and of public information.

*Outstanding Publications:* The publications of the American Museum of Natural History for the year have been the *Bulletins*, the *Memoirs*, the *Anthropological Papers*, the *Novitates*, *Natural History*, and the *Museum Journal*.

## THE NECESSITY OF BALANCING DIETARIES WITH RESPECT TO VITAMINES

THE fairly recent discovery that small amounts of unknown substances are necessary constituents of a complete diet has opened up a large and evidently attractive field of research. The enthusiasm with which this work is being prosecuted and the novelty of many of the results obtained, have apparently led to the conviction in many quarters that vitamines are of great importance in practical