Mayas of Yucatan are exceptions. However, even in these systems, the ten (or five) forms a subsidiary system, apparently developed first. The further important fact should be noted that with the development of these numerical systems, both these civilizations included their systems of weights and measures. We may even say that it appears probable that the system of weights and measures was first brought to the sixty system among the Babylonians, and weights and measures to the twenty system among the Mayans, and from this carried over to the number system. Note that this reduction took place in Babylon as much as four thousand years ago. These ancient civilizations found it necessary, then, to make their number systems conform to their systems of weights and measures, including time.

The first systematic treatise on decimal fractions was printed in 1585, first in Flemish and then in French, by Simon Stevin, of Bruges. This work is addressed to astronomers, surveyors, masters of money (of the mint), and to all merchants. Stevin says, of this work, that it treats of "something so simple, that it hardly merits the name of invention." He adds:

> We will speak freely of the great utility of this invention; I say great, much greater than I judge any of you will suspect, and this without at all exalting my own opinion. . . . For the astronomer knows, . . . the difficult multiplications and divisions which proceed from the progression with degrees, minutes, seconds and thirds . . . the surveyor, he will recognize the great benefit which the world would receive from this science, to avoid . . . the tiresome multiplications in Verges, feet and often inches, which are notably awkward, and often the cause of error. The same of the masters of the mint, merchants, and others. . . . But the more that these things mentioned are worth while, and the ways to achieve them more laborious, the greater still is this discovery *disme*, which removes all these difficulties. But how? It teaches (to tell much in one word) to compute easily, without fractions, all computations which are encountered in the affairs of human beings, in such a way that the four principles of arithmetic which are called addition, subtraction, multiplication and division, are able to achieve this end, causing also similar facility to those who use the casting-board (*jetons*). Now if by this means will be gained precious time; . . . if by this means labor, annoyance, error, damage and other accidents commonly joined with these computations, be avoided, then I submit this plan voluntarily to your judgment.

What can one add to these words of the first writer on the subject, and an independent discoverer of decimal fractions? All that Stevin says applies to-day, hardly with the change of a letter. The genius of Stevin is evident in the comprehensive grasp which he had of the universal application of decimal fractions to affairs. Much of the benefit of this invention is lost to us in America, because we persist in using non-decimal weights and measures.

LOUIS C. KARPINSKI
UNIVERSITY OF MICHIGAN

SCIENTIFIC EVENTS

THE ANNUAL MEETING OF THE BOARD OF TRUSTEES OF THE AMERICAN MUSEUM OF NATURAL HISTORY

A REPORT of the nature and scope of the past year's work of The American Museum of Natural History was made on the evening of February 7 by President Henry Fairfield Osborn, at the annual meeting of the board of trustees, which was held at the home of Dr. Walter B. James. The president regards the year 1920 as one of the greatest years in the history of the museum, inasmuch as the institution's educational value has for the first time been fully recognized by the present city administration, and gifts, collections and funds for expeditions presented to the museum represent a total of $500,000.

Commenting on the financial condition of the museum, it was announced that the year's work had been concluded without the necessity of requesting the trustees to make their usual personal contributions to supplement the budget. This was due to the enforcement of the most rigid economy and to the fact that the city authorities, after a searching investigation of its affairs, recognizing the importance of the institution as a vital and ever developing adjunct to the city's educational system, had increased the annual maintenance allowance by $150,000 over the appropriation

for 1919. Appreciation was also expressed for the generous response to requests for membership and for support of exploration work.

The popularity of the museum as an educational center was evidenced by the visits of 1,040,000 persons during the year.

Regarding the museum's work of cooperation with the public schools, it was reported that 1,180,000 students had made use of the nature study collections which are loaned, without cost, to the schools; that 88,000 pupils had attended the lectures in the museum provided so that they might visualize the subjects treated in their studies; that 1,650 blind children had "seen" the material selected for their use and attended special lectures; that 136,500 people had made use of the collections loaned to the public libraries; and that 116,500 slides had been distributed to public-school teachers to enable them to give illustrated talks on travel and natural history subjects to their pupils. A new line of contact with the schools has been developed through a series of background lectures, given by the museum staff to the city's teachers in training, designed to give the student teachers a greater fund of information and breadth of vision and to familiarize them with the museum material and the ways in which it can be used to supplement class-room work. As a further development of this cooperative work with the public-school system, the museum's department of health, at the request of the Board of Education, has prepared a set of twenty exhibits, each set including food models, composition blocks and charts, and constituting an aid to the instruction of school children in dietary hygiene.

EXPEDITIONS AND ACQUISITIONS OF THE AMERICAN MUSEUM

The field work of the year included several important expeditions. In September, an expedition financed by Mr. Harry Payne Whitney and headed by Mr. Rollo H. Beck, started on a five-years' investigation of the birds of Polynesia. This is the most important expedition ever sent into the field by the department of ornithology. Mr. George K. Chorrie collected birds in southern Ecuador, and Mr. Harry Watkins worked in Peru. Mr. H. E. Anthony collected mammals and vertebrate fossils in Jamaica and southern Ecuador. Mr. J. C. Bell obtained specimens and casts of sharks and rays at Cape Lookout, North Carolina. The department of anthropology continued excavations at the Aztec, New Mexico, ruin (which work was provided for by the Archer M. Huntington Fund), sent a party into the Grand Gulch region of Utah to explore cliff-dwellings, and began with the Bishop Museum of Honolulu a joint investigation of racial problems in Hawaii. Members of this department also represented the Museum in Honolulu at the First Pan-Pacific Scientific Congress, at which plans were made for future Polynesian exploration and investigation, in which the American Museum will participate. The department of geology made investigations in New York and Pennsylvania, Tennessee and Kentucky, Arizona, California and Hawaii, collecting in these regions being done by Curator E. O. Hovey, Associate Curator Chester A. Reeds, and Mr. E. J. Foyles. Messrs. Albert Thomson and George Olsen excavated large fossil vertebrates in Nebraska, for the department of vertebrate paleontology. Dr. Henry E. Crampton, curator of the department of invertebrate zoology, began an extended trip through the South Seas and the Far East. Dr. F. E. Lutz, associate curator of the same department, explored in Wyoming, Colorado, Idaho, Utah and Indiana, and Mr. F. E. Watson did field work in Jamaica. Mr. Paul Ruthling collected in Mexico and Mr. Elwood Johnson obtained specimens in Colombia for the department of herpetology. Through cooperation with the New York Zoological Society, under the supervision of Mr. C. William Beebe, collecting has been carried on for the museum in British Guiana at the Zoological Society's Tropical Research Station there.

Important new acquisitions made during the year, other than material secured by the expeditions just mentioned, included a large collection of paleolithic stone implements from Egypt, presented by August Heckscher;