

expedition of 1916. The archeological collections include more than a thousand specimens of prehistoric pottery, textiles, weapons and implements from the Cliff and Pueblo ruins of northern Arizona, by the University of Arizona.

THE university senate of Western Reserve University has voted to establish a committee on research to be affiliated with the National Research Council. The committee is composed of Dr. George N. Stewart, chairman, School of Medicine; Dr. Torald Sollmann, vice-chairman, School of Medicine; Professor H. P. Cushing, secretary, Adelbert College; Professor H. W. Springsteen, Adelbert College; Professor F. H. Herrick, Adelbert College; Professor O. F. Tower, Adelbert College; Professor H. A. Aikins, College for Women; Professor Edward Spease, School of Pharmacy.

THE Duke of Bedford, who presided at the annual meeting of the Zoological Society of London, on April 30, explained the steps taken by the council to save food. He said that the total number of animals had been very greatly reduced; first, because they had not replaced any of the large animals which had died during the war; and, secondly, because they had destroyed a number of those which could be replaced in normal times. With the reduction of the number of animals came a corresponding reduction in the amount of food consumed. The principle adopted had been, wherever possible, to cease using food which was also human food. The following details were given:

Meat is limited to horseflesh purchased from the army. Never was the supply more abundant or the quality better, on account of the enormous number of horses in government service.

Potatoes.—We used to use over 15,000 pounds a year—we use none now.

Bread formerly used for the apes and monkeys and some small mammals has been replaced by flour not up to the Board of Trade standard for human consumption, and by ship's biscuits which have made one or two voyages unused and are then rejected as no longer fit for issue. The sale of bags of stale bread to the public for feeding the animals has been stopped.

Wheat is no longer used for any of the mammals

or water-fowl. As substitutes we use dari, paddy rice and locust beans.

Oats.—The quantity used has already been very greatly reduced and the remainder is being successfully replaced by a mixture of split horse beans and maize.

Hay.—The hay used in the gardens consists of those trusses which the army buyer, who buys first, has not selected. Arrangements have been made to use the cut grass from the London parks and squares, and to use larger quantities of foliage.

Fish.—The fish used is unsuitable for human food, except some small quantities required by birds to which salted or stale fish is fatal.

Eggs.—The eggs used for small soft-billed birds are Chinese pickled eggs or undersized imported eggs.

Fruit.—Bananas, formerly used for a very large number of the small mammals and birds, have been, to a great extent, replaced by boiled man-gold wurzels and beetroots. Some few small and delicate mammals and birds refuse to take beetroot, but these exceptions are insignificant. The bananas which are still used, as far as possible, are over-ripe ones, unfit for table purposes, but quite nutritious for animals. The dates used are of a quality not up to the Board of Trade standard for human food.

Sugar.—The sugar used for the animals consists of what is known to the trade as "foot" sugar, which is not suitable for human food, and the total quantity amounts to about 5 pounds a week.

Greens.—About 11 bushels are used a week, but these consist of those not sold for human consumption.

UNIVERSITY AND EDUCATIONAL NEWS

THE American Association of University Professors will hold its next annual meeting at Chicago, probably on December 27 and 28.

As has been noted in SCIENCE, Governor Ferguson has vetoed the legislative appropriation for the University of Texas, amounting to one million six hundred thousand dollars for the next two years. It is said that this was done because the board of regents was unwilling to dismiss the president and members of the faculty. There have been various lawsuits, and the attorney general has now given an opinion that the veto is ineffective.

THE new Stanford University Hospital, which is being erected at a cost of approximately \$500,000, will, it is expected, be ready for occupancy about October 1.

MR. V. EVERIT MACY, commissioner of charities and corrections, West Chester County, has undertaken to support three fellowships, of the value of \$500, each for work and investigations in the West Chester County penitentiary.

THE following changes have been made in the staff of the anatomical department of the Johns Hopkins University: Dr. Florence R. Sabin has been promoted from associate professor of anatomy to professor of histology; Dr. Lewis H. Weed, from associate to associate professor in anatomy, and Dr. Charles C. Macklin, from instructor to associate. Professor O. Van der Stricht, of the University of Ghent, becomes lecturer in anatomy. Dr. Edmund V. Cowdry, associate in anatomy, has resigned to accept the professorship of anatomy in the Peking Union Medical College which is now conducted by the Rockefeller Foundation of New York. Dr. Eldon W. Sanford becomes assistant in anatomy.

MR. W. G. WATERMAN, recently assistant professor of biology at Knox College, has been appointed assistant professor of botany at Northwestern University.

ASSOCIATE PROFESSOR WILLIAM A. KEPNER has been promoted to a professorship of biology in the University of Virginia.

AT the University of Minnesota, Henry T. Moore has been appointed assistant professor and Karl S. Lashley instructor in psychology, with salaries of \$2,500 and \$1,700, respectively.

DISCUSSION AND CORRESPONDENCE

HERITAGE AND HABITUS

THE word "habitus" as distinguished from "heritage" was defined in 1913 by Gregory¹ as follows:

The totality of the cœnotelic or recent adaptive characters of an animal may be called its *habitus*; the totality of its palæotelic characters may be

¹Gregory, W. K., "(IV.) Convergence and Allied Phenomena in the Mammalia," *Rept. Brit. Assoc. Adv. Sci.*, 1914 (1913), pp. 525-526.

referred to as its *heritage*. The *habitus* tends to conceal remote phylogenetic relationships, the *heritage* to reveal them. Thus, the diverse *habitus* of *Thylacinus*, *Notoryctes* and *Phaseolomys* concealed their remarkably uniform underlying *heritage*.

The *habitus* of a race of fishes is the totality of their cœnotelic characters, *i. e.*, of all those characters which have been evolved in adaptation to their latest habits and environment. The *heritage* of a race of fishes is the totality of their palæotelic characters, *i. e.*, of all those characters which were evolved in adaptation to earlier habits and environments and which were transmitted in a more or less unchanged condition, in spite of later changes in habits and environment.²

The derivation is, of course, from *habitus*, meaning attire, but by a natural extension *habitus* is taken to mean among other things, *e. g.*, *facies* (Century Dictionary, p. 2675). The word "habitus" is common property. It is a word of wide significance. Gregory applied it in a limited sense without entirely losing sight of its generally accepted meaning (*e. g.*, *habitus* of plants).

The terms *habitus* and *heritage* may become very useful and be generally adopted among naturalists. The reptilian *heritage* of ichthyosaurs stands in clearest contrast to their marine *habitus*; so too the mammalian *heritage* of bats and cetacea, the primate *heritage* of man, the avian *habitus* and diapsid *heritage* of pterosaurs, the struthious *habitus* and theropod *heritage* of *Strouthiomimus*, etc.

Lillie recently uses the term *habitus* in the same general sense in which Gregory has used it, but the latter gives it a more precise meaning, *viz.*, the totality of all characters evolved in response to the latest or final life zone. "Somatic *habitus*" as used by Lillie means "general bodily characteristics," while *habitus* in botany means the sum of the adaptive characters, much as Gregory uses it. These adaptive characters are, of course, inherited.

The words cœnotelic and palæotelic, also proposed by Gregory, are perhaps still better terms, because they are self-explanatory to those who know even a little Greek. Cœnotelic signifies characteristics evolved during present life habits; palæotelic signifies in-

² *Ann. N. Y. Acad. Sciences* for 1913, p. 268.