THE STORY OF THE BEAR IN THE FIRST PRINTING OF DARWIN'S "ORIGIN OF SPECIES"

IN a previous letter to SCIENCE, it was mentioned that Hearne's story of the black bear is a distinctive feature of the first edition of Darwin's "Origin of Species" which was omitted in the second printing of this famous work. Professor E. B. Poulton, the greatest living authority on the works of Darwin, writes as follows on March 27, 1927:

> I'm not sure that Hearne's story of the Black Bear is fabulous. Anyway this is the reference: "Journey from Prince of Wales's Fort in Hudson Bay to the Northern Ocean: 1769 to 1772." Samuel Hearne; Edited by J. B. Tyrrell, Toronto; Champlain Society: 1911: pp. 344–345. The original edition was published in 1795 and the reference in it is pp. 370–371, at least Major Leonard Darwin believes it is so. I expect the Bodleian has a copy, and, if so, I will look it up and write to you again.

HENRY FAIRFIELD OSBORN

A NEW FIND OF THE WOOLLY ELEPHANT IN MICHIGAN

OF the numerous elephantine remains found in this state more than three fourths have been of the mastodon variety rather than that of the true elephant, or mammoth type.

So far as known there have been but eight finds of elephant within the state, only four of which have been specifically identified.

Elephas columbi, northern part Jackson Co.
Elephas (*primigenius*) *boreus*, near Three Oaks, Berrien Co.
Elephas (*primigenius*) *boreus*, near Eaton Rapids, Eaton Co.
Elephas boreus, near Gladwin, Gladwin Co.

The find here given is a tooth fragment, rounded so as to resemble a cobblestone found in the fall of 1925 in a gravel pit in the southwestern part of Oakland County, about one and a half miles north of New Hudson. The gravel deposit is of the nature of a kame ridge associated with the Interlobate Moraine of the Late Wisconsin ice-sheet. Some 140 acres of this deposit are owned by the Standard Gravel Company, eight to ten acres of which have been opened and operated for the last eight and one half years. The superintendent is Mr. O. E. Gooding and Mr. Rex Gooding, the night foreman, who picked up the specimen and noticed something peculiar about its appearance. The gravel deposit here is about one hundred feet thick and the tooth came from a depth of about seventy feet but may have rolled into this position from above. It was associated with rounded pebbles, cobbles and an occasional boulder, the bulk of which is of Canadian origin. The specimen was carried home, broken open in the direction of the plates, and a fragment consisting of five plates given to a former pupil of the writer, Mrs. William A. Campbell, who in October, 1926, submitted it for identification.

The fragment was apparently broken from somewhere near the middle part of the tooth, the base being so rounded as to give no indication of roots. The height is 16 to 18 cm, greatest width 920 mm, distance across the four plates still in position about 45 mm, or the equivalent of about nine plates in 100 mm. These plates are flat, very regular and encased in a delicate enamel shell having a thickness of about 1½ mm. These plates come to the sides at right angles, suggesting that we have an upper tooth, while the number of plates indicated suggests one of the later molars. The specimen is greatly weathered, when compared with the ordinary mastodon teeth, the dentine and cement having the appearance of chalk or kaolin, except where discolored by iron stain. There can be little doubt but that the specimen tooth is that which has been generally identified with *Elephas primigenius* of the Old World and Alaska but now separated by Hay under the name of *E. boreus*. If this proves to be specifically distinct from the former the name *boreus* seems to the writer especially well chosen, since its occurrence in the lake region westward and its apparent relation to the till sheets and recessional moraines of the Iowan and two Wisconsin ice-sheets suggests strongly a much closer association with the actual ice than in the case of *E. columbi* and *E. imperator*.

W. H. SHERZER
MICHIGAN STATE NORMAL COLLEGE

THE CONTROL OF COTTON-WILT BY THE USE OF ORGANIC FERTILIZERS

IN a recent article concerning the means by which the cotton-wilt fungus, *Fusarium vasinfectum*, induces wilting (*Jour. Agr. Res.*, v. 33, p. 1143-1162, 1926), the writer called attention to the fact that in a medium containing inorganic nitrogen the fungus produces substances that are deleterious to cotton. On the other hand, when organic nitrogen was used in the medium, no toxic effects were obtained.

In view of these findings, attention is now directed to the possibility of controlling wilt by the use of organic fertilizer, either in the form of barnyard manure or of some green manure, preferably some nematode-resistant legume. As the parasite causing wilt is a soil inhabitant, there is considerable possibility that its metabolic products in the soil may or may not exercise a deleterious effect on the roots, depending upon the chemicals present in the soil.

Cotton-wilt is much more restricted in its range and prevalence on different kinds of soil than certain other vascular diseases caused by species of Fusarium, as, for example, tomato wilt or stem rot of sweet potatoes. Barring the presence of nematodes, if a grower reports that he has considerable cotton-wilt, it can reasonably be predicted that his soil is rather poor or worn out, lacking particularly in organic matter. If nematodes are present, then the use of organic matter in such soil will not remove the possibility of wilt development, although it may partially alleviate the losses that might be incurred by stimulating the growth of the plant. Thus, as with wilt-resistant varieties, the presence of nematodes interferes with the ability of the plant to ward off infection.

To explain these phenomena, the following theory is at present held by the writer. *Fusarium vasinfectum* is a wound parasite and invades only after some injury has occurred to the roots. This injury may be caused by various agents, including diverse microorganisms, nematodes or other soil-inhabiting metazoa, or by chemicals. Having once gained entrance into the vascular system of the root, it lives a semi-parasitic existence within the water-conducting tubes, confining itself for a large part to the non-living material within the dead vessels. Only after the living tissues are killed or greatly weakened in advance of mycelial invasion will the fungus grow and fructify in those parts. This theory is in part borne out by the fact that no amount of inoculum applied to the top of a plant will induce infection on living parts.

Because of the importance of cotton-wilt, attention is directed in this preliminary note to the possibility of its control by the use of organic fertilizers. Orton's findings (U. S. Dept. Agr. Farmers' Bul. 333, 1910), which have doubtless acted as a deterrent in the use of organic fertilizers for the control of wilt, are based on very little experimental data, and his results are contradicted by the work of Fulton (La. Agr. Exp. Sta. Bul. 96, 1907). The writer has some data which seem to confirm Fulton's work.

H. R. ROSEN

AGRICULTURAL EXPERIMENT STATION,
UNIVERSITY OF ARKANSAS

EDITORIAL ETHICS IN SCIENTIFIC PUBLICATIONS

SOME weeks ago I was honored by an invitation to give a short address on "The Rôle of Wave Length in Modern Theories of Radiation," this being part of a program in connection with a joint meeting at Schenectady of the Union and Rensselaer Chapters of Sigma Xi. The address was broadcasted by WGY. For publicity purposes, an advance copy of the address was furnished to the Associated Press.

In the issue of *Telegraph and Telephone Age* for May 16, 1927, on page 225, there appears what purports to be an article contributed by me to that periodical under the title, "The Rôle of Wave Length in Modern Theories on Phenomena of Radiation." This article contains certain parts of my address, but, in addition to the change of title, certain unfortunate omissions were made.

This material was published over my name, but without my permission having been first obtained; without advising me in advance that the article was to be thus published, and, what is of far more significance, *no acknowledgment whatsoever was given of the occasion for which the material was prepared.* The casual reader will assume, of course, that the article was prepared specially for *Telegraph and Telephone Age.*

In view of the fact that I have experienced previously several other incidents of this kind and know that others have had similar experiences, I am recording these facts in the nature of a protest against such a practice as this, which is becoming all too common. It seems to me that the ethics of the editorial profession should be based upon the ordinary courtesies which ought to be extended to an author or speaker.

F. K. RICHTMYER

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A MICRO BLOOD SUGAR METHOD AND THE BLOOD SUGARS OF INSECTS

CHEMICAL analyses of the constituents of the blood of insects have been largely neglected because of the lack of suitable quantitative micro-methods. Biological fluids, especially of insects, are always present in minute quantities, and analyses of these fluids must necessarily be made by micro methods. This is especially true if the insect, after the extraction of the blood, is to continue living. Recent work on insect blood seems to have been largely qualitative in character.[1,2] Bishop,[3] however, gives quantitative data for the blood of honey-bee larvae, using blood collected from fifty animals. Considering the variations among individuals, such results can hardly be compared.

[1] Muttkowski, R. A., 1923, Bull. Brooklyn Ent. Soc. Vol. 18, p. 127; 1924, Bull. Brooklyn Ent. Soc. Vol. 19, p. 4.

[2] Haber, V. R., 1926, Bull. Brooklyn Ent. Soc. Vol. 21, p. 62.

[3] Bishop, G. H., 1925, *Jour. Biol. Chem.*, Vol. 66, p. 77.