MESSRS. JOHN WILEY AND SONS, INCORPORATED, write that they supply filing-card announcements of their new books covering scientific and technical subjects, in accordance with the plan recommended by Mr. Wilhelm Segerblom in the issue of SCIENCE for January 5. They will send copies of these cards to those who may be interested.

UNIVERSITY AND EDUCATIONAL NEWS

THE Billings family of Chicago, headed by Mr. C. K. G. Billings, has given one million dollars to the University of Chicago toward the endowment of the medical school. The money is to be used to provide a hospital in connection with the school.

THE late Mr. John D. Archbold has bequeathed the sum of $500,000 to Syracuse University.

MR. JACOB H. SCHIFF has given the sum of $50,000 to New York University toward the fund of $300,000 for the division of public affairs in the school of commerce.

THE alumni of Harvard University plan to collect a fund of ten million dollars for the permanent endowment fund of the university.

PROFESSOR A. A. NOYES, director of the research laboratory of physical chemistry at the Massachusetts Institute of Technology, will spend the next five months at Throop College, Pasadena, Cal., where the new chemistry building will be occupied about February 1.

DR. ROSWELL ANGIER, assistant professor of psychology at Yale University, will during the second half year give at Yale University one of the courses given by the late Hugo Münsterberg. The other courses will be given by Assistant Professor H. S. Langfeld and Dr. L. T. Troland.

THE *Journal* of the American Medical Association states that the senate of Queen's University, Kingston, Ont., has issued a memorandum covering its objections to the action of the University of Toronto in deciding to establish in 1918 a six-year academic course in medicine. A conference had been held between representatives of the two universities but no other universities interested in Canada had been asked to participate in that conference. Queen's University says that the proposals come at a time when there is an unusual demand for the services of medical men from the British and Canadian governments, and that the great need for medical men will not immediately cease when the war is over.

DISCUSSION AND CORRESPONDENCE

THE INFLUENCE OF DISEASE IN THE EXTINCTION OF RACES

OSBORN[1] has called our attention to the part disease may have played in the extinction of certain mammalian groups especially. He based his suggestion on the prevalence of certain diseases among modern mammals, such as Texas fever, "rinderpest," biliary fever and the disease transmitted by the tse-tse fly. He says:

> Thus in these diseases we have all the conditions favorable for the wide distribution of insect-borne diseases which in past times may have attacked various types of quadrupeds and resulted in extermination before natural immunity was acquired.

He did not, however, cite any instances in which disease is known to have played a part among the fossil vertebrates, and it is not likely that epidemic diseases of which he spoke should leave an impress on the skeleton.

The writer[2] has already indicated how a study of pathological lesions on fossil bones may show something of the widespread nature of disease in geological time. During the past few months there have been accumulated evidences of at least a score of diseases which are suggested by the lesions found on the petrified skeletal remains. Since the detailed description of these will appear elsewhere, it will only be necessary to say here that disease, as indicated by the above-mentioned lesions, was widespread quite early in the history of the early vertebrates. Pathological bones have so far not been noted in the early or

[1] H. F. Osborn, *American Naturalist*, Vol. XL., p. 836, 1906.

[2] SCIENCE, N. S., Vol. XLIII., No. 1108, pp. 425–426, 1916. *American Journal of Science*, Vol. XLI., pp. 530–531, 1916.

middle Paleozoic, but in the Permian diseased bones have been described by Renault, which were afflicted with caries, and he was able to discern something of the nature of the bacteria producing these lesions. Walcott[3] has indicated the presence of bacteria in a much earlier period but, so far as I am aware, nothing of the diseased nature of fossil forms is known earlier than that stated above.

The lesions so far studied are the results of accidents, or of infections and none of them are very extensive. It is improbable that any of the lesions so far studied were so severe that the life of the individual afflicted was endangered. Certainly none of them are severe enough to have endangered the race. Troxell[4] has suggested in the description of a pathologic camel phalanx from the Pleistocene of Texas:

> The interesting pathologic phalanx is probably a result of exostosis or uncontrolled deposition of bony material. The bone was not broken, because it shows the same length as the normal one of the same size. Possibly the disease which caused the death of the individual also contributed to the destruction of the species.

It is to be doubted if lesions of this nature are ever fatal. They may result in the loss of usefulness of the member afflicted and in the case of the camel, aside from a stiffness in the foot afflicted, probably no other result was noticeable. Troxell has mentioned that the introduction of swampy conditions into that region was instrumental in the extinction of the fauna, and it is to be further noted that the swampy condition also produced the arthritic lesion in the camel phalanx, since arthritides are more commonly found in animals inhabiting moist places, and are particularly severe in extinct cave-inhabiting and fossorial animals.

It is not my intention to contend that disease has not been influential in the extinction of races; it probably has been; but those diseases which have left an impress on the fossilized skeleton certainly can not be regarded as among those diseases which would produce widespread extinction. Some other has been the dominant factor. Among the labyrinthodonts, for instance, there is no evidence of disease on the skeletons, and we know that after a sudden rise and world-wide distribution of species, suddenly the whole group went out of existence. The same may be said of other early groups of vertebrates. The present results of the study of fossil pathology indicate the early appearance in geological time and widespread distribution of diseases of many kinds, but none of them, so far as these lesions may be interpreted, were sufficiently severe to have played a part in the extinction of any of the known races of vertebrates. They are to be regarded rather as chronic infectious or constitutional diseases which may have played a part in extinction, but there must have been some other and more powerful ally which is at present unknown.

ROY L. MOODIE
UNIVERSITY OF ILLINOIS,
COLLEGE OF MEDICINE,
CHICAGO

[3] C. D. Walcott, 1915, *Proc. Natl. Acad. Sci.*, April, 1915, pp. 256–257.

[4] E. L. Troxell, 1915, *Amer. Journ. Sci.*, Vol. XXXIX., p. 626, Fig. 14.

VERTICAL FILING FOR PAMPHLET COLLECTIONS

IN the issue of SCIENCE for November 24 Professor Storer calls attention to the important matter of properly caring for pamphlet collections. He also brings together in very serviceable form the data regarding the various methods which have been used in storing pamphlets. The writer merely wishes to add some items from his experience in using for this purpose ordinary commercial vertical filing cases.

When this system is used the pamphlets are placed in the drawers of the cabinet face forward and with the back of the pamphlet uppermost. It is thus possible to read the back title if the pamphlet bears one, or to separate the pamphlets slightly as one would cards in a card index and thus note the title printed or written on the front cover. Guides are inserted at convenient intervals to assist in finding the particular group of pamphlets desired. These guides may provide a series of