women for degrees in the university. The Cambridge University Syndicate appointed to consider the question is divided in opinion; half have reported in favor of admission to full membership, and half in favor of a separate university at Cambridge.

DR. DAVID KINLEY, professor of economics and dean of the graduate school of the University of Illinois, has been elected president to succeed Dr. Edmund Janes James.

DR. LAUDER W. JONES, dean of the School of Chemistry and also of the College of Engineering and Architecture of the University of Minnesota, has accepted an appointment as professor of organic chemistry at Princeton University.

ALICE M. BORING, of the Peking Union Medical College, China, has been appointed assistant professor of zoology at Wellesley College, beginning with the academic year 1920–21.

DR. ELLSWORTH D. ELSTON, of Cornell University, has been appointed assistant professor of geology at Dartmouth College.

ASSOCIATE PROFESSOR J. WEMYSS ANDERSON, has been appointed to the recently established John William Hughes Chair of Engineering Refrigeration at Liverpool University.

DISCUSSION AND CORRESPONDENCE

MODERN INTERPRETATION OF DIFFERENTIALS AGAIN

TO THE EDITOR OF SCIENCE: I regret that in my criticism (SCIENCE, March 26) of Professor Hathaway's exposition of differentials (SCIENCE, February 13) I was led by an unwise desire for brevity into making a statement which, in its unqualified form, will not stand analysis. The statement that "lim $N\Delta y$ is inevitably zero" is certainly not true unless N remains finite, and Professor Hathaway is quite justified (SCIENCE, May 7) in chiding me for this error, since his N is not restricted to finite values.

At the same time I can not feel that I was essentially mistaken in contending that his presentation of differentials "would prove highly misleading to the modern student."

It is true that when he defines the differential dy as the limit of $N\Delta y$ for $\lim \Delta y = 0$, he does allow the multiplier N to vary (as I should have stated); but it is also true that *he gives no indication whatever as to the manner in which N is to vary; and without some such indication his limit of $N\Delta y$, and hence his differential, dy, remain wholly undefined!*

On page 167 (I quote verbatim this time, to avoid the danger of renewed injustice), his formal interpretation of differentials is given as follows: they are "ordinary arithmetical increments, but in a variation defined as *in the first ratio,* or *as the variables begin to increase,* or, *in the instantaneous state,* which are all one."

I maintain that such vague statements are not likely to convey to any student's mind "a rigorous theory, neglecting no quantity, however small, leaving no unexplained symbol." They are much more likely to leave him with the traditional impression that differentials are really as Bishop Berkeley called them, the "ghosts of departed quantities," or, in Professor Osgood's phrase, abominable "little zeroes," unworthy of a place in mathematical discussion.

The object of my brief letter was, as stated, not to discuss historical questions (the importance and value of which no one can deny) but merely to contrast the obscurity of Professor Hathaway's presentation with the clearness and simplicity of the modern treatment—the treatment which has been the commonplace of every treatise of recognized standing since the middle of the nineteenth century.

EDWARD V. HUNTINGTON
HARVARD UNIVERSITY

POPULAR SCIENTIFIC LITERATURE

TO THE EDITOR OF SCIENCE: In the issues of SCIENCE for February 20 and 27 Mr. F. L. Ransome, of the U. S. Geological Survey, published a most interesting article on the "Functions and Ideals of a National Geological Survey."

In this article, attention was given to the

educational work which such a survey might carry on. To a librarian, his statements are of more than casual interest. He called attention to the dearth of popular literature on certain scientific subjects, especially geology. While other branches of nature study, including plant and animal life, appeal to a wider circle, and have been considered in a large number of interesting and attractive books, the same is not true of geology or of some of the smaller forms of animal life, as, for example, insect and fresh water life.

May I venture to call the attention of some scientists who read your journal to the desirability of some small, well-illustrated and attractively written books on geology, both descriptive and historical; on some of the mineral products, such as iron and steel; on pond life; on microscopy; and on the lives of American scientists and scientific explorers.

A book is now in preparation for publication by Scribner's, "The strange adventures of a pebble." From the announcement, this is doubtless the sort of book which has been needed for some time. In the quarterly booklist of the Pratt Institute Library (which library has made a speciality of literature in this field) for January, there is a carefully selected "List of technical and scientific books for boys." Astronomy is pretty well covered. A fairly good boys' book on chemistry was published in 1918. The two titles on geology are those by Heilprin and Shaler, both rather old; and on physics, nothing better than a reprinted edition of Hopkins, "Experimental science," which could very well be entirely revised or even broken up into two less expensive volumes. Certainly there is need for more books of this sort.

In the same line, may I call attention to the need of having books lists, to be distributed through schools and libraries and printed in an attractive style with an illustrated cover, and giving descriptions of the books? The attention of many young people could be called to science as a life career if means like these were adopted. Another device to this same end would be a series of posters or printed reproductions of exhibits, showing some of the interesting phases of nature study or science. These could be printed by such a central bureau or by some national scientific society and distributed to be shown in schools and libraries and at Boy Scout and Camp Fire Girls headquarters.

Joseph L. Wheeler
The Youngstown Public Library

RULES OF THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

In reference to the applications made to the International Commission on Zoological Nomenclature for copies of the rules, the secretary desires to state that the commission has no supply of reprints for distribution. Several years ago, at request of the secretary, Mr. John Smallwood, 524 Tenth St., N. W., Washington, D. C., prepared several hundred mimeographed copies and he still has about 100 on hand. These are sold at a nominal price to cover expense of mimeographing and postage and zoologists desiring copies can obtain them, as long as the supply lasts, by applying directly to Mr. Smallwood.

C. W. Stiles,
Secretary

SPECIAL ARTICLES

ECHINODERMS IN BIRDS' STOMACHS

Through the courtesy of Mr. E. W. Nelson, chief of the Bureau of Biological Survey, Washington, four vials containing echinoderms taken from birds' stomachs have been sent to me for examination. As I think there are no published records of birds' using echinoderms for food, Mr. Nelson has kindly consented to my stating in Science the facts revealed by this trivial investigation and certain important inferences which may be made.

Two of the vials contained holothurian-like objects taken from the stomachs of gulls. The appearance and condition of these specimens indicate that they were picked up on the beach dead and more or less damaged. As they are now quite decalcified, they are hopelessly unidentifiable, and it is probable that one at least is not a holothurian.