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.

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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