instrument on board the *Galilee*, making observations at sea from latitude $55^{\circ} 41'$ north to $45^{\circ} .07'$ south, but was unable to measure the potential gradient. The conductivities found gave as means $\lambda_p = 1.60 \times 10^{-4}$ and $\lambda_n = 1.433 \times 10^{-4}$ electrostatic units, somewhat greater than Gerdien found on land. A description of the method of observation at sea was given and the difficulties mentioned. Calibrations of the electroscope in New Zealand and at the Bureau of Standards in Washington showed its sensitiveness to be nearly constant, but gradually increasing.

C. T. R. Wilson's method of measuring the earth-air current was described. He uses a test plate maintained at zero potential while insulated from the earth, and arrives at a value for the current almost identical with that of Gerdien, namely, 2.2×10^{-16} amperes. Mention was made of Schering's work in Göttingen on the continuous registration of the conductivity of the atmosphere, and his apparatus described. He avoids saturation currents by removing the charged body to a sufficient distance from earthed conductors, and obtained a trace showing the course of the conductivity by means of an electrometer connected with the charged body.

Satterly at the Cavendish Laboratory, Cambridge, Eve at Montreal and Ashman at the University of Chicago, have all made independent determinations of the quantity of radio-active emanation in the atmosphere in terms of the mass of radium per cubic meter required to maintain in equilibrium the observed amount of emanation. Ashman condensed the emanation by cooling with liquid air, Eve absorbed it with cocoanut charcoal and Satterly used both methods. The results give as the radium equivalent per cubic meter according to Ashman 97×10^{-12} gram, Eve 60×10^{-12} gram, from results extending over a year, and with a ratio of maximum to minimum of 7 to 1, and Satterly, 88×10^{-12} gram for the charcoal method and over 100×10^{-12} for the liquid-air method.

On board the *Galilee* practically no radio-active deposit could be collected, yet the ionization was as great as on land, tending to disprove the theory that the ionization of the air is due to the radio-active content.

Attention was called to the need for a well-equipped observatory for research along these lines in this country, where the subject has been almost entirely neglected.

Thermometric Lag in Calorimetry: Mr. W. P. WHITE.

Of late, in calorimetry by the method of mix-

tures, several attempts have been made to avoid an error due to the lag of the thermometer to which considerable importance has been attached.

This error, however, does not exist at all, which may be shown as follows: In a calorimetric run by the method of mixtures, all the temperature data lie upon a temperature-time curve whose form determines both the cooling correction and the main temperature interval. The exact instant at which temperatures on this curve are read is unimportant, so long as the temperature intervals are preserved. If now, all temperatures are plotted the same number of seconds wrong, as they would be when the same lagging thermometer is used throughout, no appreciable error can result. The importance of lag in calorimetric thermometers has, therefore, been greatly overestimated.

R. L. FARIS,
Secretary

THE ELISHA MITCHELL SCIENTIFIC SOCIETY OF THE UNIVERSITY OF NORTH CAROLINA

THE 179th meeting of the society was held in Chemistry Hall on Tuesday, October 13, 1908, 7:30 P.M. The program was as follows:

"Results of the Microscopic Study of the Slate near Chapel Hill," Mr. H. N. Eaton.

"Chemical Energy," Professor J. E. Mills.

"A Further Contribution on the Regenerative Power of Sponges," Professor H. V. Wilson.

ALVIN S. WHEELER,
Recording Secretary

SECTION OF BIOLOGY, PITTSBURGH ACADEMY OF SCIENCE AND ART

THE first meeting of the year was held at the Carnegie Institute on Tuesday evening, November 10. At the invitation of the section about twenty-five geologists attended the meeting, and it was decided that there was sufficient interest manifested to warrant the formation of a Geological Section in Pittsburgh. As the Biological Section had already prepared a program which embraced a large number of topics of interest to geologists, it was thought best to combine the two sections for the present year at least. The meeting was addressed by Director W. J. Holland, Dean M. E. Wadsworth, Mr. R. R. Hice, Mr. F. Hewett, Mr. F. Z. Schellenberg, Mr. E. Andrews, Mr. F. S. Webster, Professor J. G. Ogden, Dr. A. E. Ortmann and the secretary of the section.

PERCY E. RAYMOND,
Secretary