

and are regarded as outwash deposits incident to the earlier glaciation. Between these highest gravels and the valley train of the last stage of glaciation several intermediate gravel-covered terraces occur that are believed to have been developed during the period of interglacial erosion which accomplished the dissection of the old surfaces upon which the early drift was deposited.

ARTHUR C. SPENCER,
Secretary.

THE TORREY BOTANICAL CLUB.

A MEETING of the club was held on January 9, at the American Museum of Natural History, with President Rusby in the chair. Sixteen persons were present.

The annual reports of the treasurer, secretary, corresponding secretary, editor and the editor of *Torreya* were then read and placed on file. The committee on phanerogams, and the committee on cryptogams reported progress.

The following officers were elected for the ensuing year:

President—Dr. H. H. Rusby.

Vice-Presidents—Dr. Edward S. Burgess, Professor L. M. Underwood.

Recording Secretary—Dr. C. Stuart Gager.

Corresponding Secretary—Dr. John K. Small.

Editor—Dr. John Hendley Barnhart.

Treasurer—Dr. Carlton C. Curtis.

Associate Editors—Dr. Alex. W. Evans, Dr. Tracey E. Hazen, Dr. Marshall A. Howe, Dr. D. T. MacDougal, Dr. W. A. Murrill, Dr. Herbert M. Richards, Anna Murray Vail.

A request from Mrs. E. G. Britton for a grant of \$100 from the Herrman fund to be used in illustrating new species of mosses from the southern states and the West Indies was read and the application approved by the club.

C. STUART GAGER,
Secretary.

THE ELISHA MITCHELL SCIENTIFIC SOCIETY OF THE
UNIVERSITY OF NORTH CAROLINA.

THE 162d meeting was held in the chemical lecture room, on Tuesday, January 23, 7:30 P.M. Under the topic 'Tropical Notes,' Pro-

fessor W. C. Coker described in a most interesting way a recent botanical trip to southern Florida and Cuba. Numerous specimens of plants were exhibited. The program was concluded by Professor Archibald Henderson, who discussed 'A Group of Cross Ratios.'

A. S. WHEELER,
Recording Secretary.

DISCUSSION AND CORRESPONDENCE.

ECOLOGICAL ADAPTATION AND ECOLOGICAL
SELECTION.

It seems that in the recent discussion of evolution there is too much importance attached to variation. It is not so certain that variation itself, or the elucidation of the question how certain species came to have certain characters, is the most important question in the origin of species. The segregation of species may be only an ecological process in which the matter of structural variation is of secondary importance. In fact the Darwinian theory does not require the supposition that the origin of a new species begins with a change of structure, so that to insist upon the importance of ecological selection is only to emphasize a factor already recognized by Darwin. By limiting the development of species to the assumption of structural characters the theory of natural selection is made to appear at an unfair disadvantage. Species are characterized by non-competitive habits rather than by adaptive structures. Indeed, I hold that the origin of a new species begins with a change of place or habits and that the characters by which species are distinguished, as well as adaptive structures, follow as a consequence.

In the 'Origin of Species' there are several passages in which a change of habits is specified as a condition of selection. "For as all of the inhabitants of each country are struggling together with nicely balanced forces, extremely slight modifications in the *structure* or *habits* of one species would often give it an advantage over others" (p. 64). "The more diversified the descendants from any one species become in *structure, constitution and habits*, by so much the more will they be en-