

OCTOBER 4.

Mr. CHARLES MORRIS in the chair.

Twenty-eight persons present.

Papers under the following titles were presented for publication:—

“The Batrachia and Reptilia of North Western Texas,” by E. D. Cope.

“On a Collection of Batrachia and Reptilia from Washington and British Columbia,” by E. D. Cope.

“Notes on a Collection of Shells from the State of Tabasco, Mexico,” by Henry A. Pilsbry.

Geology of the Isles of Shoals.—Mr. THEODORE D. RAND remarked that Hitchcock, in his *Geology of New Hampshire*, devotes but a few lines to these islands, stating that their geology has been neglected.

They are evidently the remains of a single island eroded by the Atlantic Ocean and are composed of gneissoid rocks with a number of trap dykes.

The rock is chiefly a coarse orthoclase-muscovite gneiss, of which the orthoclase constitutes probably eighty per cent, the quartz less than twenty and the muscovite probably not over two per cent. Inter-stratified in this coarse gneiss is a fine-grained variety containing much more mica and usually of a dark gray color. In some places this contains serpentine veins of orthoclase, in this as well as in other respects resembling our Manayunk schists and gneisses. Garnets, while not entirely absent, are quite rare, and the rock very rarely approaches a schist. The strike is pretty uniform, about N. 70 E., while the dip varies, though usually 70° to 90° N. W. Through these rocks pass numerous joints, many of them very irregular. Along these joint-planes erosion has taken place leaving a very rough and irregular surface, the remaining rock being hard and not much disintegrated.

Crossing the islands in a general northeast and southwest direction are trap dykes of varying width, from one to ten feet. These form special lines of erosion, and are invariably lower than the adjacent gneiss, though apparently much harder. All exposed masses seem fresh and undecomposed.

Most remarkable among these is one at the southeast end of Star Island. It is about six feet across and extends at an acute angle from the south to the east shore. Its strike is N. 35 E., its dip 85° to 90° N. W., with two sets of joints, one parallel to the dip, the other nearly coincident with the stratification of the adjacent gneiss. At each end the dyke was deeply eroded and the adjacent gneiss in



1892. "October 4." *Proceedings of the Academy of Natural Sciences of Philadelphia* 44, 324–324.

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