

8. *Resume of General Stratigraphic Relations in the Atlantic Coastal Plain from New Jersey to South Carolina.* By Mr. N. H. Darton, Washington, D. C.
9. *Cretaceous Plants from Martha's Vineyard. Results Obtained from an Examination of the Material Collected by David White in 1889.* By Mr. Arthur Hollick, New Brighton, N. Y.
10. *On Asbestos and Asbestiform Minerals.* By Dr. George P. Merrill, Washington, D. C.

The paper treats of the composition, mode of occurrence and mineralogical nature of the various minerals commercially grouped under the name of asbestos, and attempts to explain their fibrous structure as due to abnormal elongation of the mineral parallel to the vertical axis, the individual fibres being in part at least by prismatic faces, that is by the planes of easiest cleavage. The primary cause of this elongation is believed to be mainly dynamical, a result of shearing and other earth movements such as are productive of uraltic hornblendes, schistosity or even slaty structure and slickensided surfaces, where actual fracturing takes place.

11. *Pre-Cambrian Volcanoes in Southern Wisconsin.* By Prof. Wm. H. Hobbs, Madison, Wis.

A preliminary report on the study of a group of isolated areas of igneous rocks which protrude through the Potsdam sandstone in the valley of the Fox River, Wisconsin. Some of these areas represent local outflows of rhyolitic lava which exhibits superb examples of spherulitic, peritic, fluxion, and breccia structures. The originally glassy ground mass of these rocks has become devitrified—hence they are apophyllites, and they have been subjected to dynamic metamorphism and subsequent infiltration of silica. They are intruded by dikes of both basic and acid rocks. Specimens and photographic sections were exhibited.

12. *A Geological Sketch of the Sierra Tlayacac, in the State of Morelos, Mexico.* By Prof. A. Capen Gill, Ithaca, N. Y.
13. *Syenite-Gneiss (Leopard Rock) from the Apatite Region of Ottawa County, Canada.* By C. H. Gordon, Beloit, Wisconsin.

The rock here described appeared in the exhibit of the Canadian Geological Survey, at the World's Fair under the title of "Concretionary Veinstone," from the apatite region. It consists of irregular ellipsoidal or ovoid masses of feldspar, with more or less quartz, separated by narrow, anastomosing bands of interstitial material consisting chiefly of green pyroxene. The ellipsoidal masses are of all sizes up to two or three inches in cross section, and several inches long. The field study at High Rock Mine, Ottawa County, shows this rock to occur in dikes intersecting the pyroxenites and quartzites. In some places the rock is very coarse with no indications of the ellipsoidal structure, while in others it is a distinctly banded gneiss whose identity with the ellipsoidal rock is evident from the anastomosing of the augite bands on a cross fracture face. Ordinarily the rock has very little quartz and corresponds to a pyroxene-syenite, but in some places the quartz is much more abundant thus alloying it to the pyroxene-granites. In view of its gneissic structure and usually sparing amount of quartz the rock is here referred to generally as syenite-gneiss, though grading locally into forms which may more fittingly be regarded as granite-gneiss.

The presence of a distinct gneissic microstructure, taken in connection with other facts appears to establish the conclusion that the peculiar ellipsoidal structure is due to orographic forces acting upon a coarsely crystallized rock in which principal constituents (feldspar and pyroxene) are more or less irregularly distributed. The breaking of the rock under pressure has been attended by the recrystallization of the