This formation, so abundant in Delaware, is thus proved to be by no means a local one, and it is probable that it will be identified with some of the formations grouped together under the name of "Southern Drift."

The Bryn Mawr gravel has also recently been found in the Montgomery County limestone valley, and there seems to be a close connection between it and the surface or drift iron ores of that valley. Some of these ores appear to be simply a very ferruginous variety of the Mt. Holly conglomerate. They overlie unconformably the steeply-dipping decomposed shales which hold a more ancient and richer ore.

In Bucks County there occurs a gravel different from any yet described, which at first occasioned some confusion. It has proved to be the result of the decomposition of the lower Triassic conglomerate, the pebbles of which, loosened from their cementing material, have been scattered through the soil. These Triassic pebbles are formed of gneiss, not Potsdam. Hills of red shale border this gravel.

A preliminary map of the Surface Geology of Southeastern Pennsylvania was exhibited, and it was suggested that its publication would be of service to many besides geologists.

April 28, 1879.

On some Enclosures in Mica.—Mr. Lewis exhibited some plates of Muscovite which he had found on Shoemaker's Lane, Germantown, which contained microscopic crystals of peculiar shape. They consisted of a dark green mica, probably Lepidomelane, in minute sharp crystals thickly disposed throughout the muscovite. These crystals were frequently arrow-shaped, and generally much elongated. Large numbers of them were shaped like a musket. They were very different from any of the enclosures in the muscovite of Pennsbury, Del. Co., and were interesting objects under the microscope.

On Dendrites.—Mr. Henry Carvill Lewis made some observations upon dendrites and their mode of growth. He stated that dendrites were not caused by filtration of metaliferous water, but that they frequently grow upward by chemical or capillary action. He described an exposure of white lower Triassic sandstone in a quarry in the southern part of Norristown, where dendrites of oxide of manganese were seen upon the surface of the rock, growing from below upwards. The dendrites were apparently in process of growth, and were so soft that they could be scraped with a knife from the rock. The material thus obtained gave a bright metallic streak on the fingers, and was shown by the blowpipe to be hydrous oxide of manganese. It was observed that while the rock above and below these dendrites was spotted with minute rust-specks of manganese, the portion upon which the

dendrites grew was pure white and free from such specks. It seemed that the material of the dendrites is abstracted from the rock and by some segregating force built up into tree-like forms. An examination of their structures showed that the dendrites were quite amorphous and that very frequently the upper extremities of their branches were thicker than the stem portion, as though some concretionary or capillary force acted most powerfully at the growing points. No crystalline structure was apparent, the dendrites being bounded throughout by curved lines. It looked as though they might have grown by a succession of concentric metallic shells.

It was remarked that these dendrites were quite different from those in muscovite and other crystals, which, frequently derived from the substance of the crystal, have been so influenced by its structure as to become often pseudomorphic. It was noted that there are several distinct kinds of dendrites. They may be internal, as in moss agate; or external, as in the case now described. They may also be either crystalline or amorphous. The crystalline dendrites are subdivided into those which have been free to crystallize of their own accord, and into those which have been influenced by the crystalline structure of the mineral in which they exist. Examples of each were cited.

On a Jurassic Sand.—Mr. Lewis directed attention to a fine sand of considerable extent and depth, which he had found underlying the lower Cretaceous plastic clay. If this clay, as is supposed, is the base of the Cretaceous formation, the sand below it may be of Jurassic age. There is a fine exposure of this sand near Elkton, Md. From its coherence it may be regarded as a fine-grained sandstone. It is either white or pale yellow in color, and about 15 feet are here exposed. Underneath the plastic clay south of Trenton, N. J., the same sand is at least 30 feet deep. It is suggested that, in the absence of fossils to fix its age, it may possibly correspond stratigraphically with the "Hastings sand." The overlying clay contains fossils at Baltimore, which Prof. Uhler identifies as Wealden.

Upon the summit of the same hill, near Elkton, where the above-described sand is exposed, "Bryn Mawr gravel" occurs in abundance. It contains "Mt. Holly conglomerate," and has the same features as in Delaware and Pennsylvania. Whether or not it has any connection with the plastic clay is not known. This same plastic clay, of probably Wealden age, occurs at Turkey Hill, in Bucks County, Penna.

May 26, 1879.

Potsdam Sandstone near King of Prussia.—Mr. Theodore D. Rand called attention to primal (Potsdam) sandstone rocks in the bed of a valley on the farm of Samuel Tyson, South Chester Valley Hill, near King of Prussia, Montgomery County, Pa.