

MEETING OF JUNE 6th, 1887.

INFORMAL COMMUNICATIONS.

Mr. Whitman Cross spoke of recent observations in regard to the paramorphic origin of certain minerals. He referred in particular to the production of hornblende from augite frequently observed of late in crystalline schists, in which change pressure was supposed to have been the principal agent. As instructive examples of the changes possible under varying conditions, within the groups of the amphiboles and pyroxenes, Mr. Cross briefly described some instances observed by him during the microscopical study of a suite of rocks from Custer County, Colorado.

The change from common augite to massive green hornblende, the paramorphic transformation most frequently described, is well shown in the dark augite-gneiss of the Blue Mountains near Silver Cliff. A considerable thickness of Archæan schists is here exposed and hornblendic varieties seem most abundant. The microscopical investigation of these rocks has shown that a large portion, if not all, of the hornblende is secondary, derived from a pale green augite which is almost invariably in process of alteration.

In a coarsely granular peridotite occurring near Querida* the dark brown hypersthene gives way to a massive green hornblende. In this case the difference in composition of the two minerals necessitates an assumption of a more complex process than is included under common paramorphosis.

The subordinate brown hornblende of a much altered diabase occurring near Bunker Hill is found to pass into

* This rock is described in full in a later communication, p. 228.—(Editors.)

two other distinct members of the amphibole series. The first of these is pale green in color and seems to correspond to common actinolite; the other is a distinct blue mineral, with the amphibole cleavage, and is apparently related to glaucophane, but differs in certain optical properties, so that the identification is not yet satisfactory. The bluish amphibole also occurs in the form of new growths attached to brown hornblende with the same crystallographic orientation.

There are in this same region other rocks in which complex changes from one of these minerals to an allied variety have been noticed, but not fully investigated. The speaker stated that a paper describing these interesting occurrences was in preparation.

Dr. Wm. P. Headden gave a description of a thin local bed of infusorial earth recently found in West Denver. The deposit is but four inches in thickness and seems to have a very limited horizontal range. It is quite pure, however, and on microscopical examination is found to contain several genera and species of diatoms. Some of these are found now living in ditches or along the banks of the Platte.