

Hand specimen is a fine-grained greenish rock, impregnated with pyrite and chalcopyrite.

Under the microscope, the rock is seen to be much altered and to present a distinct porphyritic character, the phenocrysts being relatively more abundant than the groundmass, which is composed mainly of felspar laths. Of the phenocrysts, the felspar is by far the most abundant, some having good idiomorphic forms, while others show broken individuals. Augite is also abundant in medium-sized grains, which, however, have undergone considerable alteration, in some places being completely changed to epidote and chlorite. Calcite is abundant as an alteration product, and magnetite as an accessory constituent.

The rock bears a distinct resemblance to No. 120, but is relatively richer in felspar and may be considered to be a highly altered basalt.

No. 13.—Fine-grained dark igneous rock, with markedly porphyritic structure. From an exposure on Nevertouch Creek, near its junction with Kettle River.

Under the microscope, the rock is seen to consist of a rather fine-grained groundmass, in which are imbedded well-defined phenocrysts, which like the groundmass consist of plagioclase and augite. Many of the smaller felspar grains are untwinned, and all have undergone considerable alteration. Augite is quite abundant in almost colourless grains, showing much alteration to chlorite. It has a maximum extinction of 39° , which, with its other characteristics, determines it to be diopside. A few crystals which, from their general appearance and high double refraction, closely resemble olivine, are also present. Some biotite occurs in the slides, but is very much altered, now consisting largely of chlorite. A small amount of epidote is present as an alteration product, and ilmenite, which occurs associated with sphene, is abundant as an accessory constituent.

The rock is an augite andesite, or possibly, as suggested by the structure, some dyke rock of similar composition.

No. 14.—From the Gorge at the mouth of Canyon Creek, where it enters Nevertouch Creek.

“The rock formation on either side of the gorge is of igneous