PETROGRAPHY OF SOME IGNEOUS ROCKS.

The hand specimen shows a compact fine-grained pale greenish-grey rock.

Under the microscope, it is seen to be very highly altered and to consist of a trachytic groundmass of plagioclase laths interspersed with grains of epidote and chlorite, in which are imbedded larger individuals of plagioclase, and forms which have once been occupied by phenocrysts of some ferromagnesian constituent now entirely altered to chlorite, epidote, zoisite, quartz and calcite.

The rock is too much altered to enable a determination of its precise character to be made, but it is evidently some basic igneous rock allied to andesite.

No. 30.—From the country rock between West Bridge and Stuart's hotel.

Hand specimen shows fine-grained pink-coloured rock, in which may be distinguished phenocrysts of hornblende, biotite and plagioclase.

Under the microscope, the rock is seen to be composed of a microcrystalline groundmass of felspar and quartz, in which are imbedded phenocrysts of plagioclase containing inclusions of some alteration products; also biotite altered in many cases to chlorite, associated with which may often be seen sphene. There are also a few fresh-looking quartz individuals, and outlines now entirely filled with quartz, calcite, chlorite and epidote, which were once occupied by some ferromagnesian constituent, probably augite, as they often show forms indicative of that mineral. Magnetite and apatite are present as accessory constituents.

The rock is an altered andesite.

It will be seen from the foregoing descriptions that most of the rocks described are andesites or closely related rocks. No. 14 presents a striking contrast to the others in that, while they are much altered, it is fresh and has every appearance of being a comparatively recent eruptive.

The occurrence of native copper in No. 125 is interesting, and its secondary nature is very plainly shown. It has no doubt been derived from the chalcopyrite by reduction.

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