

Orthoclase. with a little all otriomorphicfeldspar. A few striated grains appear, which, as they extinguish parallel to or at very low angles with the twinning lines, are probably oligoclase, but fully ninety-five per cent show no striation, have a generally parallel extinction and are doubtless orthoclase.

Cross parting. A cross parting is often noticed in the smaller phenocrysts which at first was thought to be a fracture due to pressure exerted upon the rock subsequently to its crystallization. But, although other evidences of dynamic metamorphism are seen, no displacement of the parts of these crystals could be discerned. For instance, in figure 6, the five parts into which the largest orthoclase crystal appears to be divided, extinguish simultaneously.

The hornblende is chiefly green in colour, though a few of the larger individuals are brown, resembling the hornblende of the essexite, while the green is like that of the nordmarkite. Both are trichroic having the same scheme of absorption, viz: $r > b > a$, and extinction angles, as high as 26° — 27° have been observed in each. Augite, when present is colourless, and in one instance was seen to have a fibrous rim of hornblende. Both these bisilicates are almost wholly replaced in one part of the rock by aegerine-augite (No. 187, fig. 6, plate VI), and in the same portion both a colourless and a blue sodalite mineral are quite prominent accessories. The former is distinguished by its rounded or polygonal outlines, its isotropic character, and frequent dust-like inclusions. The latter occurs in strings and small interstitial patches, and is bright blue in ordinary and wholly dark in polarized light. Biotite occurs in comparatively few, but large, well formed individuals. Both basal and prismatic sections are seen, but present no features which call for especial notice.

Accessory minerals Spene is a rather abundant accessory mineral in some portions. Needles of apatite are also frequently found. A little undetermined matter occurring interstitially amongst the feldspar was thought to be altered nepheline, but may be kaolinized orthoclase.

Fourche Mountain. The structure and mineral composition of the rock ally it with the Pulaskite type of hornblende syenite, the original occurrence of which was described by the late Dr. J. F. Williams, from Fourche Mountain, Arkansas. Its chemical relation to that rock is well shown in the following analyses, as well its resemblance to the allied mica-free sub-class, umptekite.