

powder and passed through a sieve of 43 meshes to the inch—the rock being rather coarse in grain—and after having been freed from dust was treated with Thoulet's solution, having a specific gravity of 3.13, in a large separating funnel. In this way an almost complete separation of the colored constituents was effected. These latter, which sank in Thoulet's solution, were subjected to the action of a bar magnet and then treated with dilute hydrochloric acid, and various impurities thus removed. The purified powder was then treated first with Klein's solution, having a specific gravity of 3.22, and then with methylene iodide, having a specific gravity of 3.323. In both fluids practically everything sank, only a few composite grains floating. A microscopic examination showed the powder now to consist of grains of hornblende and of garnet with some composite grains consisting partly of nepheline. Further separation became difficult since, as was subsequently ascertained, the hornblende had a specific gravity of 3.433, and the specific gravity of the garnet was 3.739, while many composite grains consisting of garnet and nepheline had a specific gravity practically identical with that of the hornblende. As the electro-magnet was found to be useless, both minerals being readily attracted by it, Retger's silver nitrate method was employed.\* The silver nitrate was fused in a properly arranged test tube, and after the introduction of the powder, potassium nitrate in powder was gradually added to the fused mass until the garnet fell, the whole being frequently stirred and maintained at a temperature of from 200° to 240° C. On allowing the mass to solidify, a portion of the powder was found to have collected at the top of the mass, while the rest was at the bottom, the intervening part being quite free from mineral grains. The solid mass was then cut in two and the salts dissolved by treatment with water. After three successive separations the hornblende was obtained quite free from grains of garnet—the only impurities present being some composite grains consisting of garnet and nepheline. This powder was then placed under a lens and all the composite grains picked out by means of a fine needle. In this way a quantity of pure hornblende sufficient for purposes of analysis was obtained, while the garnet was obtained directly in a state of purity without the necessity of a final separation by hand.

Both minerals were found to be quite fresh and bright and quite unacted upon by the fused salts.

The hornblende† was then analyzed by Dr. Harrington with the following results:

\* "Ueber Schwere Flüssigkeiten zur Trennung von Mineralien." Neues Jahrbuch für Mineralogie, etc., 1889, ii, p. 190.

† We would suggest *Hastingsite* as a varietal name for this hornblende, connecting it with the region where it occurs.