

reverse has taken place in the passage of most granite aggregates from a fluid to a solid state, crystals of the more fusible minerals being found enveloped in hard, transparent, glassy quartz, which has often taken very faithful casts of each, so as to preserve even the microscopically minute striations on the surface of prisms of tourmaline. Various explanations of this phenomenon have been proposed by MM. de Beaumont, Fournet, and Durocher. They refer to M. Gaudin's experiments on the fusion of quartz, which show that silex, as it cools, has the property of remaining in a viscous state, whereas alumina never does. This "gelatinous flint" is supposed to retain a considerable degree of plasticity long after the granitic mixture has acquired a low temperature; and M. E. de Beaumont suggests, that electric action may prolong the duration of the viscosity of silex. Occasionally, however, we find the quartz and felspar mutually imprinting their forms on each other, affording evidence of the simultaneous crystallization of both.*

It may here be remarked that ordinary granite, as well as syenite and eurite, usually contains two kinds of felspar; 1st, the common, or orthoclase, in which potash is the prevailing alkali, and this generally occurs in large crystals of a white or flesh color; and 2dly, felspar in smaller crystals, in which soda predominates, usually of a dead white or spotted, and striated like albite, but not the same in composition.†

Porphyritic granite.—This name has been sometimes given to that variety in which large crystals of common felspar, sometimes more than 3 inches in length, are scattered through an ordinary base of granite. An example of this texture may be seen in the granite of the Land's End, in Cornwall (fig. 685). The two larger prismatic crystals in this

Fig. 685.



Porphyritic granite. Land's End, Cornwall.

drawing represent felspar, smaller crystals of which are also seen, similar in form, scattered through the base. In this base also appear black specks of mica, the crystals of which have a more or less perfect hexagonal outline. The remainder of the mass is quartz, the translucency of which is strongly contrasted to the opaqueness of the white felspar and black mica. But neither the transparency of the quartz, nor the silvery lustre of the mica, can be expressed in the engraving.

* Bulletin, 2d série, iv. 1304; and Archiac, Hist. des Progrès de Geol., i. 38.

† Delesse, Ann. des Mines, 1852, t. iii. p. 409, and 1848, t. xiii. p. 675.