

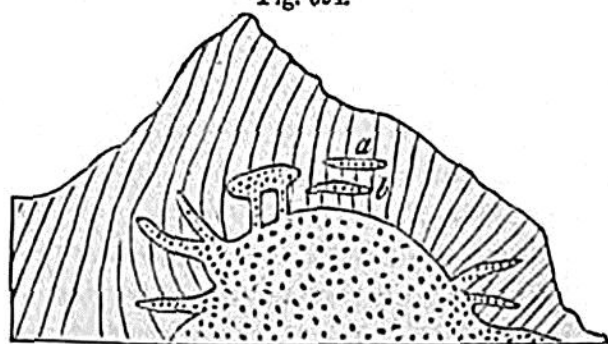
Professor Keilhau drew my attention to several localities in the country near Christiania, where the mineral character of gneiss appears to have been affected by a granite of much newer origin, for some distance from the point of contact. The gneiss, without losing its laminated structure, seems to have become charged with a larger quantity of felspar, and that of a redder colour, than the felspar usually belonging to the gneiss of Norway.

Granite, syenite, and those porphyries which have a granitiform structure, in short all plutonic rocks, are frequently observed to contain metals, at or near their junction with stratified formations. On the other hand, the veins which traverse stratified rocks are, as a general law, more metalliferous near such junctions than in other positions. Hence it has been inferred that these metals may have been spread in a gaseous form through the fused mass, and that the contact of another rock, in a different state of temperature, or sometimes the existence of rents in other rocks in the vicinity, may have caused the sublimation of the metals.\*

There are many instances, as at Markerud, near Christiania, in Norway, where the strike of the beds has not been deranged throughout a large area by the intrusion of granite, both in large masses and in veins. This fact is considered by some geologists to militate against the theory of the forcible injection of granite in a fluid state. But it may be stated in reply, that ramifying dikes of trap also, which almost all now admit to have been once fluid, pass through the same fossiliferous strata, near Christiania, without deranging their strike or dip.†

The real or apparent isolation of large or small masses of granite detached from the main body, as at *a b*, fig. 694 and above, fig. 688, and

Fig. 694.



General view of junction of granite, and schist of the Valorsino.  
(L. A. Necker.)

*a*, fig. 693, has been thought by some writers to be irreconcilable with the doctrine usually taught respecting veins; but many of them may, in fact, be sections of root-shaped prolongations of granite; while, in other cases, they may in reality be detached portions of rock having the plutonic structure. For there may have been spots in the midst of the invaded strata, in which there was an assemblage of materials more fusible than the rest, or more fitted to combine readily into some form of granite.

\* Necker, Proceedings of Geol. Soc., No. 26, p. 392.

† See Keilhau's *Gaea Norvegica*; Christiania, 1838.