

NARRATIVE OF A ROCK FRAGMENT

BY

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Apart from morainic drift and paleozoic sediments — the latter ones resting on the sub-cambrian peneplain more than a thousand meters above sea-level — all the rocks in H o l (Hallingdal, Norway) are of pre-cambrian age. The youngest among them is the Hol granite, which cuts the “bottom gneiss”, a migmatite consisting of different gneissic, gneiss-granitic and granitic components. It also cuts the so called dagaligneiss, which is a porphyritic or perhaps augengneissic rock, resting more or less conformably on the migmatite. The dagaligneiss is the oldest of the Telemark supracrustals in this region.

In Djupedal (Hol), near the contact, the dagaligneiss is cut by numerous small dikes from the Hol granite. The dikes are quite regular ones with the common platy shape, and with thickness ranging from some few centimeters to about a meter. The dike rock has a sugar-grained structure — one might call it an aplite-granite — with no visible trace whatever of flowing. In addition, it is uniform throughout its whole mass, showing no border-facies.

The whole system nevertheless yields a proof of the existence of a flowing magma and therefore, particularly at this time, deserves notice.

The illustration (fig. 1) shows on its left side the dagaligneiss (dark) next to the light granite (right part of the specimen). The division in this case runs along the schistosity of the dagaligneiss. One may see a thin flake of dagaligneiss projecting obliquely into the granite. The flake has obviously become detached from the wall of dagaligneiss and just started on its way following the streaming magma, when the congealing of the last remaining liquid put a stop to the movement of this pulpy, viscous mass. The flake fits flush with the wall of the dagaligneiss, so that there can be little doubt as to its

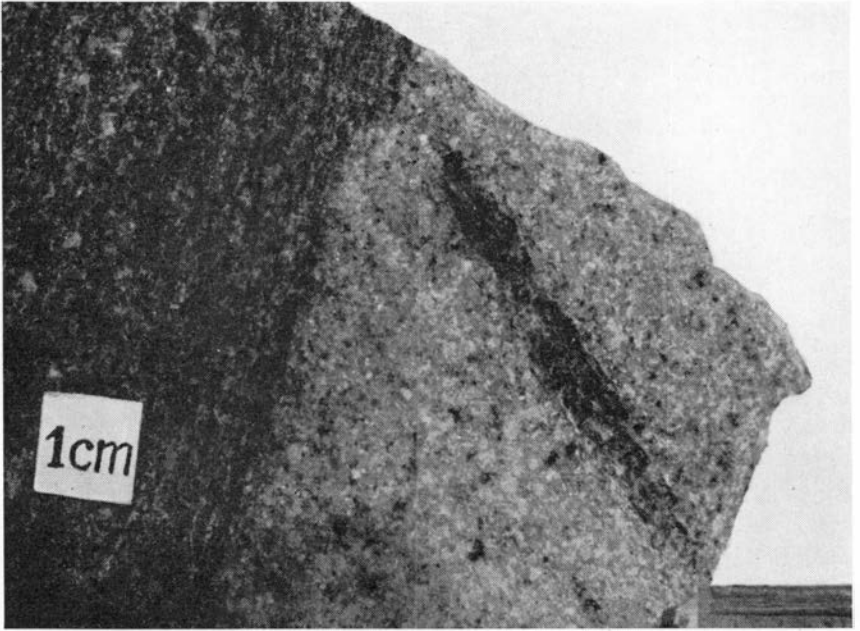


Fig. 1.

Per Holmsen phot.

origin. It is by the way also obvious that the temperature was rather low, as there is no sign of plasticity in the dagaligniss. The flake is just broken away from the wall; there has been no bending nor slow yielding.

It is true, that this is only just another example of an igneous breccia. The distinctive feature of this occurrence is that the fragment has moved such a little distance from its place of origin, that this latter can be identified. According to the natural order of things, it is very seldom possible to make observations like the one described above.