

to the east and southeast of Loch nan Caorach are broken by a complex of reverse faults which form an imbricate zone. The outcrops of the faults are parallel to that of the Ben More thrust, and the faults are most common in the vicinity of this thrust. It is probable, in view of these facts, that the imbricate zone is related to the Ben More thrust rather than to the Moine thrust. The orientations of the Ben More thrust and a number of the related faults, determined by structure contouring, are shown in figure 5, *a*. The strike of the Ben More thrust is approximately N. 10° W., and the dip is between 30° and 40° toward the east. The associated faults have approximately the same strike, but the dip is variable and considerably steeper.

For a considerable distance above the Moine thrust, and for several feet below it, the rocks are intensely mylonitized. The mylonitic rocks form a distinctive scarp, which is most marked where the outcrop of the thrust trends north-south; it is especially well developed on the west side of the Stack of Glencoul and to the north of the Glencoul River, where the rocks form a precipitous cliff, locally approaching 200 feet in height.

Both primary and secondary mylonitic rocks are present above the Moine thrust. Primary mylonitic rocks form a zone of variable thickness above the thrust; to the north of Loch nan Caorach this zone is 150 to 200 feet thick, thinning toward the southeast. Secondary mylonitic rocks occupy a zone, approximately half a mile wide, to the east of the Moine thrust and the primary mylonitic rocks associated with it. They comprise slightly crushed rocks, still recognizable as primary mylonitic rocks and Moine schists, and more intensely deformed rocks showing varying degrees of phyllonitization. To the east of this zone there is a second zone of undeformed primary mylonitic rocks, considerably thinner than that described above, extending for a mile north-northeast from Loch an Eireill. The primary mylonitic rocks of this eastern zone grade upward into normal granulitic Moine schists. The gradational boundary between the primary mylonitic rocks and the Moine schists can be traced southward from Loch an Eireill toward the Moine thrust, but in this area both types of rock have suffered severe secondary deformation.

Structural data.—The position of the Moine thrust can be determined within a few feet along most of its outcrop, although it is seldom exposed. The thrust has a northwesterly strike and dips at approximately 20° to the northeast. East of Loch nan Caorach the thrust is warped into a gentle antiform (pl. 1, *a*; fig. 9, *b*), so that on the ridge southeast of the loch it is at the same topographic level as at the west side of the Stack of Glencoul. This gentle fold in the thrust plane was noted by the Survey geologists (Peach *et al.*, 1907, p. 505, fig. 30; p. 506). Peach considered, moreover, that the eastern zone of primary mylonitic rock (μ , fig. 4, in pocket) was caused by a fold affecting the Moine thrust, so that the mylonitic rocks were warped upward along this zone (illustrated in a diagram "explaining B. N. P.'s views" on Clough's field maps). It should be noted that the antiform is just above the Ben More thrust, an important fact that apparently escaped the notice of the Survey geologists.

The Moine thrust is exposed only on the west side of the Stack of Glencoul and due east of Loch nan Caorach. At both localities there is an alternation between mylonitized Cambrian quartzites and color-layered primary mylonitic rocks

through a vertical distance of 10 to 20 feet. There is no well-defined surface representing the thrust. The quartzite in the thrust slices below the thrust is foliated and lineated (and locally folded) like the primary mylonitic rocks. The horizon mapped as the Moine thrust in the area, then, is not a fault surface but a boundary between rocks of different composition and similar fabric.

The orientation of the foliation (*S*) in the primary mylonitic rocks, where they are not affected by the secondary deformation, is shown in figure 5, *b*. The foliation dips consistently toward the northeast, parallel to the Moine thrust. The strike of the foliation in the secondary mylonitic rocks (fig. 5, *b*, *S'*) is slightly

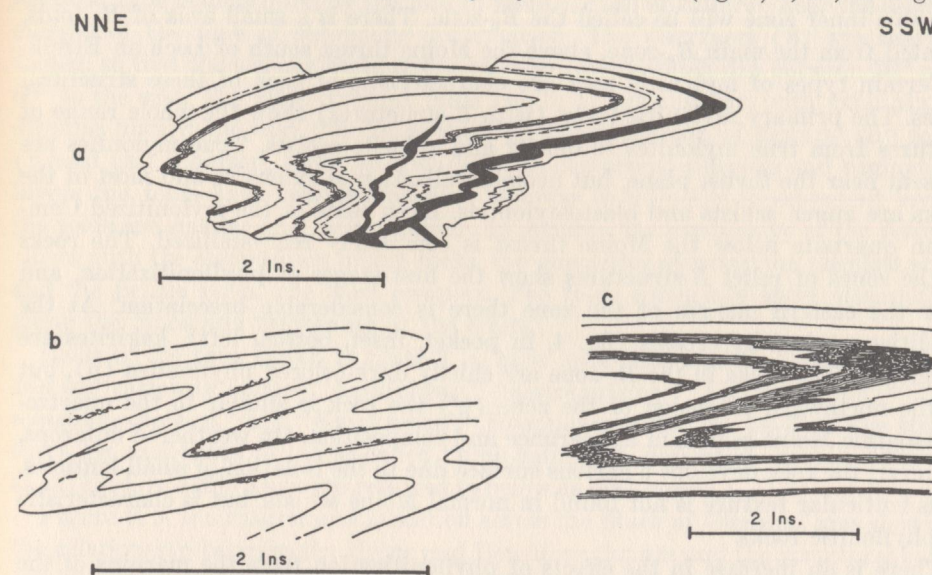


Fig. 7. Style of folding in the Stack of Glencoul area. *a*. Profile of fold in Moine schist, Fionn Allt. Black layers are quartzite. *b*. Profile of fold in mylonitized Cambrian quartzite below the Moine thrust, east of Loch nan Caorach. *c*. Profile of fold in primary mylonitic rock, Cnoc an Fhuarain Bhain. Shaded layers are chloritic.

east of north and the dip is approximately 35° toward the east. Figure 5, *c-d*, shows the orientation of all the small-scale folds and penetrative lineations, respectively, measured in the mylonitic rocks and the Moine schists in the area. There is a strong maximum of fold axes plunging toward the east-southeast (*B*), and a submaximum with north-south trend (*B_n*); there is a slight spread of the axes in a great circle parallel to the regional foliation (*S*). The lineations are consistently parallel to the maximum of fold axes (*B*), and show a very high degree of preferred orientation.

The partial diagrams in figure 6 show that all the folds and lineations in the deformed rocks below the Moine thrust, in the primary mylonitic rocks and in the Moine schists, plunge toward the east-southeast, whereas the *B_n*-folds are confined to the zone of secondary mylonitic rocks. Folding is comparatively rare in the Moine schists, but is very common in the rocks in the vicinity of the thrust. The style of the folding in the Cambrian rocks (fig. 7, *b*), the primary mylonitic rocks (pls. 1, *b*; 2; fig. 7, *c*), and the Moine schists (fig. 7, *a*) is remarkably similar.