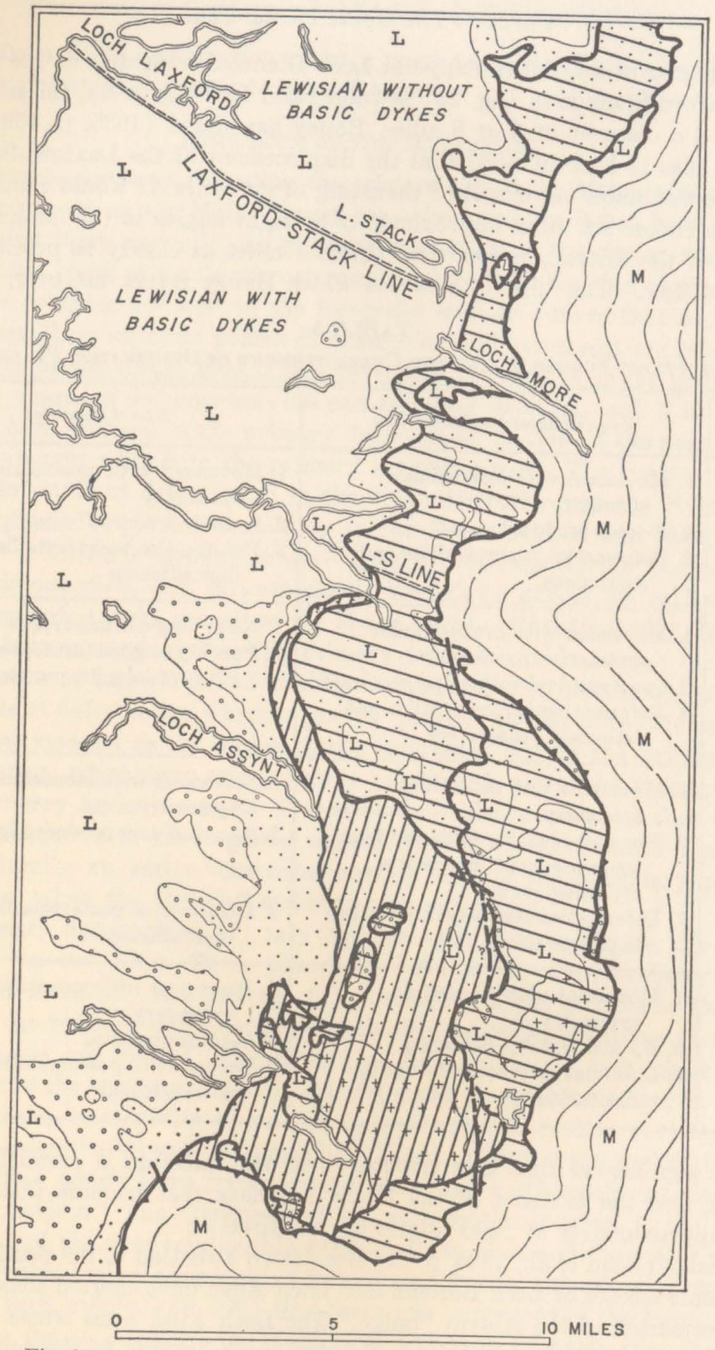


Fig. 25. Structural units in the Assynt and Loch More area, as interpreted by the present author (cf. fig. 1, in pocket). The upper Assynt nappe is shaded with nearly horizontal lines; the lower Assynt nappe, with nearly vertical lines. The Laxford-Stack line in the foreland and the upper Assynt nappe are shown (after Clough, in Peach *et al.*, 1907, and Bailey, 1935). Lewisian rocks are designated by L; Moine schists, by M; Torridonian rocks, by circles; Cambrian rocks, by points. The plutonic masses of Loch Borolan and Lock Ailsh are shaded with crosses.



cumstantial evidence, accounts for the presence of two major nappes in the zone of dislocation and for the formation of the Assynt bulge. The upper nappe was probably detached from the basement while the Moine schists were being transported to the south-southwest along the movement horizon (Moine thrust), and was dragged along under the moving Moine rocks until its progress was impeded by the upper portion of the Loch Borolan mass; the syenite is more massive and resistant to deformation than the bedded sediments elsewhere in the zone of dislocation, and would tend to form an obstruction of this type. The sole probably originated at this stage of the deformation, when the force on the upper part of the syenite mass became sufficiently great to rupture the mass. The upper part of the mass then sheared off along the sole and was transported to the southwest along with a slice of the sedimentary rocks in which it is emplaced. The bulge is due to a gentle anticlinal fold of the movement zone over this accumulation of thrust materials. The fact that the axis of the fold in the movement horizon is parallel to the kinematic $B$-axis in the primary mylonitic rocks is significant, as it indicates that the formation of this fold was contemporaneous with the primary movements along the Moine movement horizon.

In the transitional stages of the primary deformation between the monoclinic movement and the orthorhombic imprint, there was probably slight shear movement normal to $B$ combined with flattening normal to the foliation and extension parallel to $B$. But, during the ensuing stages of this deformation, the foliation was no longer an active slip surface, and the flattening and the elongation parallel to $B$ were not accompanied by tectonic transport normal to $B$. In the final phase of the primary deformation (Ic), there was slight movement of the overlying rocks to the north.

Whereas the movement in the Moine schists and the mylonitic rocks throughout the primary deformation was pre- and paracrystalline, the movements during the later secondary deformation were postcrystalline. The sense of movement during this phase of deformation was toward the west, and the Ben More thrust and other eastward-dipping reverse faults were formed. The only zones of imbrication I recognized in Assynt also date from this phase of deformation.

Although the north-trending fold structures in the Moine thrust zone and the zone of dislocation are definitely later than the $B$-structures, the approximately orthogonal relationship between $B$ and $B_n$, $B_s$, and $\beta_n$ suggests that there may be a connection between the two phases of deformation. It is possible, in my opinion, that the north-trending folds in the thrust zone were produced, after the rocks in the zone had become "brittle," as a result of elongation parallel to $B$ in the Moine schists farther to the east. That is, the movement may be of the $B \perp B'$ type on a regional scale. Large-scale axial elongation in the Moine schists, though not constituting tectonic transport in the rocks themselves, would naturally give rise to differential movement and rotation about an axis normal to $B$ in a zone between the schists and the rigid foreland; the north-trending folds ($B_n$, $B_s$, $\beta_n$) in the thrust zone may have originated in this fashion.

Balk (1936, 1953) has described the fabric of the rocks associated with thrust zones in the eastern United States; the megascopic fabric of these rocks is almost identical with that in the mylonitic rocks along the Moine thrust in Assynt; the