

Letter to the Editors

CORRELATION OF DALRADIAN STRUCTURES AND METAMORPHISM

SIRS,—In his recent study of the tectonic and metamorphic history of the Upper Findhorn, Piasecki (1975) notes that the earliest fabric is folded around the F_1 folds and preserved within syn- F_1 garnets, yet relegates this fabric to a stage in the development of the F_1 deformation. This leads him to contrast the thermal history of the area (high grade during F_1) with that of the Dalradian to the south-east (high grade during F_2), and to relate it rather with that of the Moines to the north-west of the Great Glen.

I would suggest that there is, in fact, no discrepancy here. In the areas of the Moine and Dalradian that I have studied in detail (from Loch Leven to Loch Tummel) there are several lithologies (particularly the Moine psammites and homogeneous pelites) where the earliest deformation (F_1) is witnessed chiefly by a schistosity sensibly parallel to bedding and a fine-grained, low-grade, fabric preserved in porphyroblasts (Treagus 1974, Roberts and Treagus 1975). Unlike the Upper Findhorn area, this fabric can always be demonstrated to be axial-planar to minor folds (in these and other lithologies) and to major folds revealed by the lithological mapping.

The dominant secondary schistosity in these areas (not necessarily the local S_2) has a Caledonoid strike and is related to a sharp rise in metamorphic grade and to porphyroblastesis. The axial-traces of some folds that have later modified these earlier structures are distinctly non-Caledonoid in trend.

This pattern of events is entirely consistent with that of the Upper Findhorn area if the earliest schistosity is assigned to the regional F_1 and the main schistosity and folding to the local F_2 .

This suggestion is reinforced by Piasecki's own correlation of the Corrieyairack Syncline (his F_1) with the equivalent structure forming the belt of post-Moine rocks between Glen Roy and Loch Leven. This belt is clearly a secondary synform (Bailey 1934, plate xvi, a-c); it is associated with an axial-planar strain-slip cleavage (Bailey and Maufe 1960, p. 46) and the growth of garnet porphyroblasts which preserve an earlier fabric (Treagus 1974, pp 534 and 542). The Ahnach Beag Synform is one component of this secondary synformal complex and folds the F_1 Aonach Beag Core (Bailey and Maufe *op. cit.* pp 23 and 46).

Thus it would seem likely that the folds named F_1 by Piasecki from the Upper Findhorn are, in fact, secondary corrugations (local F_2) of the lower limb of a recumbent, north-west facing F_1 (regional) syncline. The early thermal history of the area would then be entirely consistent with that of the Moine and Dalradian south-east of the Great Glen elsewhere and not inconsistent with the Caledonian tectonic and thermal history of the Moine to the north-west of the Great Glen suggested recently by Powell (1974).

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This letter was inadvertently omitted from V. 17 pt. 2. The reply to it from Piasecki will, however, be found in that part on page 179.