Sirs.—Mr. Greig’s comments draw attention to several interesting points regarding the age of the Downan Point lavas south of the River Stinchar. Although we noted the similar REE patterns of the Bennane Head and Downan Point pillow lavas, their normalized Ce/Sm ratios differ considerably, suggesting more continental affinities for the latter group. However, there are other lines of enquiry to pursue.

The series of important coastal exposures of pillow lavas at Portandea in the south, followed northwards by others at Currarie, Knockgown, Dove Cove and Wilson’s Burn were regarded by Peach and Horne (1899, pp. 421–31) as Arenig inliers within the Caradocian. Bailey and McCallien (1957, p. 44) are a little vague about the Currarie lavas but accept Peach and Horne’s interpretation since their structural model also requires the Downan Point lavas a little further north along the strike to be Arenig.

Walton (1961) recognized that these supposed Arenig lavas were interbedded with Caradocian sediments and therefore of the same age. He proposed that the volcanic and sedimentary rocks occupying the region between the Southern Upland fault and the River Stinchar were Glenkiln (Caradocian) in age (Walton 1961, pp. 66, 71). This is one source of published information on the possible age of the Downan Point lavas which Mr. Greig finds so elusive. In addition, the probable northeasterly extension of these lavas just to the south of the River Stinchar near Colmonell (Craigneil Burn and Pyet Glen) display relationships which, according to Williams (1962 pp. 22, 41) favour a post-Middle Arenig age.

From Portandea northwards the Caradocian succession youngs consistently to the northwest (Walton 1961, p. 70) except for local folds often associated with faults. However, although the total distance from Portandea to Wilson’s Burn is some 4.7 km, the thickness of strata represented cannot be very great since the coastline is almost parallel to the regional strike of the rocks. Lewis (1975) examined all the accessible exposures along the coast from Portandea to the River Stinchar and reached the same general conclusions as Walton.

The last northeasterly exposure of Caradocian lavas occur at Wilson’s Burn (1.6 km NNE from Currarie), and from here northwards there are continuous (although often inaccessible) outcrops of pillow lavas to Downan Point, a distance of about 1 km (Peach and Horne 1899, p. 430). All these rocks have the same regional strike direction as those to the south and still young consistently to the northwest; generally with vertical dips and often slightly overturned.

LETTER TO THE EDITORS

If an Arenig age is proposed for the Downan Point lavas then their contact with proven Caradocian volcanic rocks must occur somewhere north of Wilson's Burn. There is an east-west dextral fault just north of Wilson's Burn (Lewis 1975) but its displacement is small and only serves to introduce more (younger) lavas which contribute to the wider outcrop forming Downan Point.

There seems to be no firm evidence for the presence of any volcanic rocks of Arenig age between the River Stinchar and the Southern Upland fault and (except for Ravengill), even to the south of the Southern Uplands fault itself (Bloxam, to be published).

Bailey and McCallien (1957, p. 44) were well aware of the problems at Downan Point, commenting on the fact that the lavas young away from the Caradocian sediments. Nevertheless, they still correlate these lavas with the proven Middle Arenig lavas at Ballaird, Pinbain, etc. In short, the folds required by Bailey and McCallien's structural theory cannot be satisfactorily demonstrated and are incompatible with the actual field data.

Peach and Horne (1899, pp. 423, 463) recognized that the sedimentary rocks around Barr on the south side of the River Stinchar were Caradocian and probably equivalent to those at Currarie. The supposed inlier of Arenig pillow lava at Barr was subsequently shown to be Caradocian (Walton 1961, p. 69). Thus, in spite of Mr. Greig's comment, the REE and other data do support a connection between the geographically isolated Barr volcanics and the coastal exposures at Currarie and, by inference, those of Downan Point.

REFERENCES


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MS accepted for publication 10th April 1978

Erratum

Volume 14, Number 1, p. 37, l. 14; for 'quartz' read 'opaque oxide'.