

(Simpson, 1962), and, disregarding his earlier statement that south of the Widemouth-Okehampton line "any southward facing recumbent structures would only be local and exceptional" (Simpson, 1961, p. 21), I accept this as evidence in favour of the interpretation shown in Text-fig. 3a.

I am not impressed by the argument involving tectonic gradients because both in Text-fig. 1a and in 1b the beds, being inverted, become younger to the south. Thus more folds must be postulated in order to bring in the older Delabole slates in the same direction and in both cases these folds would be at deeper tectonic levels than those to the north. The areal distribution of the metamorphic and structural expressions of the tectonic gradient, or local tectonic gradients, would appear to have been influenced by faulting along the Widemouth-Okehampton line, by faulting within the pile of recumbent folds (Dearman and Butcher, 1959; Dearman, 1960), and by the uplift produced by the granite ridge to the south.

It is obvious that much more field work remains to be done before the opposing views discussed in this and earlier letters can be reconciled. But I would emphasize that as far as my observations go the recumbent folds face south.

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W. R. DEARMAN,  
DEPARTMENT OF GEOLOGY,  
KING'S COLLEGE,  
NEWCASTLE-UPON-TYNE, 1.  
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#### ? EARLY TERTIARY FOLD MOVEMENTS IN MULL

SIR,—R. F. Cheeney (1962) has remapped the Loch Don Anticline of eastern Mull. This is an arcuate fold, running more or less north and south, that strongly tilts a great covering of Tertiary basalt lavas, thus bringing to the present surface of erosion: Upper Cretaceous limestone, various Jurassic sediments (Inferior Oolite to Lower Lias), Trias conglomerate, Devonian lavas and Dalradian schists. Dips in both limbs of the anticline are steep; and in the eastern limb the Jurassic sediments are occasionally somewhat overturned. Cheeney's black and white map (1962, p. 230) is almost identical with the coloured version in the Geological Survey one-inch Sheet 44 (1923, reprinted 1959). The comparison is easy since Cheeney has adopted the same

outside correlations for the several formations as have been used by the Geological Survey—for the fossiliferous Mesozoics these were worked out by G. W. Lee. Cheeney (1962, p. 229) has also published a map of the concentric folds of Mull as a whole and this is essentially identical with Pl. V, p. 165 of the Mull Tertiary Memoir (Bailey and others 1924). If these agreements had been referred to in the 1962 paper it would have reassured readers.

A new feature in Cheeney's presentation is that he thinks he has found a local *angular* unconformity dated between the representatives of the Upper Cretaceous and the Tertiary. His evidence is set out in a large-scale map (Cheeney, 1962, p. 231) of part of the eastern limb of the anticline. Here, at one point, he shows Inferior Oolite dipping west at  $61^\circ$  (reversed) only a few yards along strike from Tertiary lava dipping east at  $56^\circ$  (unreversed); and a quarter of a mile to the south, Lower Lias dipping west at  $84^\circ$  (reversed) only a few yards north along strike from Tertiary lava dipping east at  $64^\circ$  (unreversed). As regards this southern locality, we may add that the only dips Cheeney has recorded in the marginal Lower Lias, along the next 200 yards, are E.S.E. at  $71^\circ$  and  $66^\circ$  (both unreversed); and also that a narrow outcrop of Upper Cretaceous is here interposed between Lower Lias and Tertiary. Its dip is east at  $51^\circ$  (unreversed).

It is impossible that so sharp a fold as the Loch Don Anticline could have been developed without important adjustments among several formations concerned. It is next to impossible that these adjustments should fail to manifest themselves at some point or other along the contact of the relatively weak Mesozoic sediments and the relatively strong Tertiary lavas. Cheeney argues against a mechanical explanation of the two dip-discordances cited above, because, he says, "no brecciation or similar indication of dislocation can be seen in the field." Personally I should not dare to reject a mechanical explanation, especially as there are no exposures of the junctions involved.

In the exposures of the Loch Don Anticline, Upper Cretaceous is restricted to the little outcrop mentioned above. Judd was the first to recognize this formation in the Hebrides. Occurrences are widespread, but they are always thin and their distribution tends to be patchy. The general absence of Upper Cretaceous in the Loch Don exposures allows Tertiary lavas in the north to come in contact with Inferior Oolite for about  $2\frac{1}{2}$  miles ( $1\frac{1}{2}$  in the west limb and 1 in the east). Towards the south the Inferior Oolite fails, and the lavas, in limb and summit exposures 3 miles long, contact Lias, seldom older than Middle Lias. Cheeney gives the maximum thickness of Inferior Oolite as 60 feet, Upper Lias 50 feet, and Middle Lias 45 feet, so that approximate general parallelism of the margin of the Tertiary lavas with the stratification of the Jurassic is self-evident.

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E. B. BAILEY.

76 HAMPSTEAD WAY,  
 LONDON, N.W. 11.  
 31st July, 1962.

#### VALIDATION OF THE NAME *NOTHODISCUS* FOR A GENUS OF CRETACEOUS AMMONITES

SIR,—A recent publication devoted to illustrating the characteristic fossils of the Lower Cretaceous (Aptian) of Madagascar (Collignon, 1962) includes under my authorship a short account of a new genus and species of ammonite (*Nothodiscus planus*) from the Gargasian of the neighbourhood of Ambanjabe (Mitsinjo-Namakia). In order to meet the requirements of the International Code of Zoological Nomenclature for validation of the generic name it is