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CORRESPONDENCE

AGE OF THE CRETACEOUS BASAL CONGLOMERATE AT MURLOUGH BAY, Co. ANTRIM

SIR,—The Cretaceous basal conglomerate seen in the coastal area between Ballycastle and Cushendun, in the north-eastern corner of Co. Antrim, is of doubtful zonal position owing to its lack of diagnostic contents. At first sight, it seems to be simply a basal facies of the succeeding Chalk, or white Limestone, of *B. mucronata* age. This, however, is not the case. As typically developed it does not contain *B. mucronata*, and its junction with the chalk above is distinctly disconformable. Nor, apparently, does *Gonioteuthis* occur; yet this belemnite is common in the upper part of the pre-*B. mucronata* White Limestone developed at Whitepark Bay, eleven miles to the west of Murlough Bay at the north-western end of the coastal conglomerate outcrop. Thus the conglomerate appears to be older than the *G. quadrata* age assumed by Hume (1897), and to be separated from the succeeding White Limestone by a non-sequence covering one to several zones. On the other hand, the find by the Geological Survey (Anderson, 1957) of a *Lewesiceras* cf. *sharpei* Spath in the conglomerate at Torr Head shows that this cannot be older than Turonian.

In a recent discussion (Reid, 1958) of the Upper Cretaceous Hexactinellida of Co. Antrim and their bearing on stratigraphical problems, I suggested that the basal conglomerate of this district may pass laterally southwards into the glauconitic chalk with sponges developed south of Carnlough to the Larne–Islandmagee area. This is again a problematical deposit. It is evidently Senonian in age, but lacks distinctive marker fossils; the only belemnite present is *Actinocamax verus* Miller, which occurs at Whitepark Bay in the flintless *Marsupites* chalk. The upward junction with White Limestone with *B. mucronata* is thus again evidently disconformable, though no marked lithological break is apparent. This glauconitic chalk is typically rich in phosphatised remains of hexactinellid sponges, occurring particularly in a dense concentration which is roughly coincident with the upward passage in this area from glauconitic sandstone into glauconitic chalk, and some distance below the limiting disconformity; the main sponge band may be roughly one foot thick, and followed by a similar or rather greater thickness of hard, less glauconitic chalk with fewer sponges. My suggestion that this facies passes laterally into basal conglomerate of similar age was based on discovery of typical sponge bed Hexactinellida in a pebbly glauconitic chalk seen in slipped blocks at Red Bay, east of Glenariff, between the areas where the two main types are exposed.

Hume's assessment of the fauna in general (1897, p. 568, tab. 1) makes the glauconitic chalk with sponges of *Marsupites* age, in the wide sense including the zones of *Uintacrinus* and *Marsupites* s.s.; a similar view has recently been expressed by McGugan (1957), who has studied the problem in conjunction with Dr. J. M. Hancock. Study of the sponges again supports this view, but leads to an additional suggestion. Sponges have generally been regarded as of

little stratigraphical importance; my own studies (1958) of the Hexactinellida of the Chalk of England show, instead, a definite sucession of faunas. Judged by comparison, the sponge bed fauna has no distinctly Turonian elements. Many of its traceable species are forms which seem first to occur in England in the zone of *M. cor-anguinum* ; there are, however, species of several genera which are typical of the higher Senonian, such as *Coeloptychium* Goldfuss and *Lepidospongia* F. A. Roemer. Further, the glauconitic chalk above the main sponge band—and sometimes the sponge band itself, which seems to be slightly diachronous—yields several species which are otherwise typical of the *I. lingua* sponge beds of S.E. Yorkshire. There is thus a suggestion that parts of this glauconitic chalk are of *O. pilula* age: that is, slightly younger than the authors cited suggest.

When these suggestions based on sponges were made, I had not obtained any determinable examples from the conglomerate of N.E. Antrim. Its outcrop at Murlough Bay has now yielded two specimens of *Rhizopoterion cribrosum* (Phillips). This is a species recorded in England by Rowe (1900, p. 360, as *Ventriculites cribrosus*) from as low as the *I. labiatus* zone. My own collecting indicates, however, that lower Senonian and earlier records refer properly to distinct, though partly congeneric, forms; the true *R. cribrosum* seems only to occur from the zone of *Marsupites* upward, and mainly above it. Its Irish distribution is similar. The species is common in the glauconitic chalk of eastern Antrim, either in the part above the main sponge band, or sometimes in the sponge band itself where this contains supposed *I. lingua* elements. It is present also in the higher glauconitic chalk and mulatto of the Belfast area, of *O. pilula* and *G. quadrata* age, and in various localities in the typical White Limestone of the *B. mucronata* zone. Its local range is thus mainly upper Senonian, and its earliest occurrence at a level which is possibly as high as the zone of *O. pilula.*

The occurrence of this sponge at Murlough Bay thus suggests that part at least of the conglomerates is of middle or upper Senonian age, no older than the glauconitic chalk in which *R. cribrosum* occurs to the south, and distinctly younger than the maximum age suggested by the Torr Head *Lewesiceras.*

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AFRICAN EROSION SURFACES

SIR,—In a recent letter to the *Geological Magazine*, Pallister (1958) has referred to a spirited controversy on the origin of certain erosion surfaces in north-east Belgian Congo between Lepersonne (1949, 1956*a*, 1956*b*, 1958) and the writer (1954*a*, 1954*b*, 1956, 1958). During the course of the controversy, I (1958, pp. 369–370) referred to a paper by Pallister (1956) in which