CORRESPONDENCE

ORIGIN OF PICRITE BLOCKS NEAR WELLS

SIR,—In 1904 Mr. H. E. Balch discovered some pieces of picrite scattered over a field at Ebbor Rocks near Wells, Somerset. They were examined by Professor S. H. Reynolds and Dr. J. S. Flett and were found to be identical with the picrite of Menheniot Cornwall. All attempts to discover the material in situ failed and it was suggested that it had been carried to Ebbor by an iceberg.

In 1922 it was brought to my notice by Mr. A. T. Davies of Keynsham that picrite had been used to repair the road leading to the G. W. R. goods yard at that village and when, in 1948, Dr. F. S. Wallis gave me a specimen of Ebbor picrite, it proved to be very similar in thin section to the rock from Keynsham. A letter to the G.W.R. brought a reply from Mr. H. A. Alexander, Divisional Engineer, Bristol, dated 25th October, 1948, in which he says " Ballast for the track not only on the Cheddar Valley Branch, but on many sections of the line comes from the Menheniot Quarries . . .". Thus there is a potential source of Menheniot picrite at Wookey Station, just over one mile from the field in which it was discovered. A recent attempt however to find picrite at this goods yard failed, the ballast and the road being at present composed of Carboniferous Limestone, together with a small proportion of various igneous rocks and slags.

When the field in question was under plough soon after the war, I was able to find on it pieces of broken brick, tile, and clinker and as all the specimens of picrite discovered at Ebbor (some 200 odd) were of about the size of road stone, being rarely more than 2½ inches long, I think we may conclude that the Ebbor picrite was probably carried to the spot where it was found, from Menheniot by human agency.

It may perhaps be worthwhile pointing out that it seems unlikely that an iceberg would freeze up pebbles in Cornwall, float north and melt them out and also that there is no known instance of ice-born rocks being found in the Mendip area.

I have to thank Dr. F. S. Wallis for placing some of this rock at my disposal and for much helpful discussion and criticism and I would also express my obligation to the Amalgamated Roadstone Corporation, Ltd. for going to considerable trouble to send me specimens of their Clicker Tor picrite from a part of the quarry believed to be in work about the turn of the century. I would also like to thank Mr. H. A. Alexander for the information he gave me.

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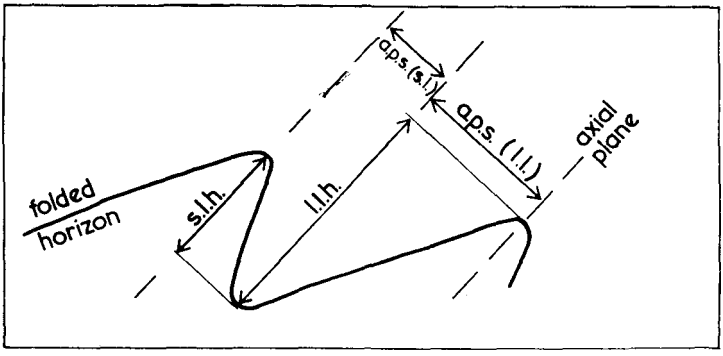
E. D. EVENS.

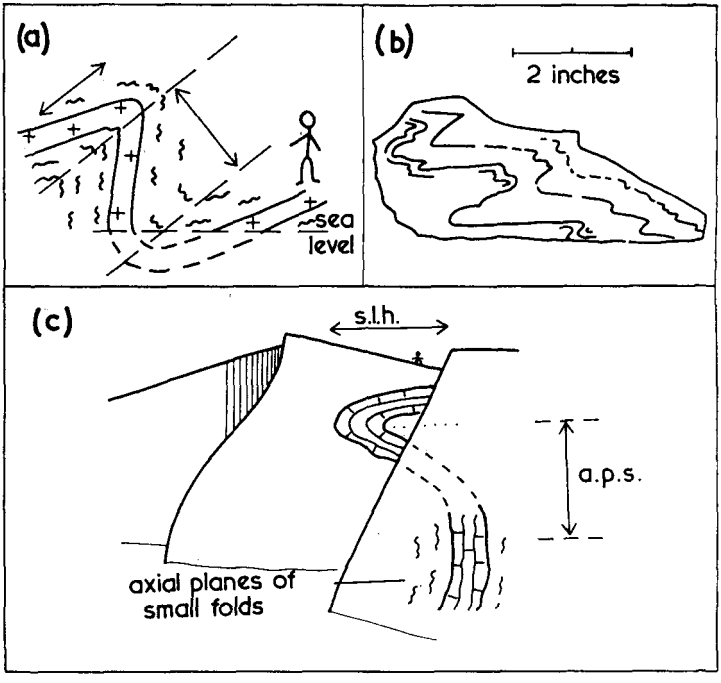
96 HAMPTON ROAD,
REDLAND,
BRISTOL.
18th September, 1958.

DIMENSIONS OF ASYMMETRICAL FOLDS

SIR,—In regions of highly folded rocks overturned folds may be encountered on scales that range from microscopic to regional. For descriptive purposes a semi-quantitative measure of scale is required, but the mathematical terms amplitude (A) and wavelength (λ) commonly used to specify symmetrical folds cannot be readily applied in the field to asymmetrical folds. A need for a more precise measure of the scale of such folding has arisen out of my work for the Falkland Islands Dependencies Survey. I am indebted to Mr. W. B. Harland for discussion resulting in the following proposals which have been adopted by the Survey.



TEXT-FIG. 1.—Proposed terms.



TEXT-FIG. 2.—(*a*) Minor fold in amphibolite and mica schist. Short limb height ~ 6 feet; axial plane separation ~ 9 feet; long limb height not observed.

(*b*) Isoclinal small folds in a hand specimen of quartz-mica schist cut perpendicular to the *b*-axis. Short limb height ~ ¾ inch; long limb height ~ 1½ inches; axial plane separation (short limb) ~ 0·6 inch approximately equal to axial plane separation (long limb).

(*c*) View of a major recumbent fold in marble exposed in a cliff face. Short limb height ~ 200 feet; axial plane separation ~ 70 feet.

Three lengths measured perpendicular to the axis can be used to indicate the form and scale of an asymmetrical fold. These are the short limb height (s.l.h.) and the long limb height (l.l.h.) measured parallel to the axial plane separation (a.p.s.) measured perpendicular to the axial plane (see Text-fig. 1). These terms are in essence those proposed by Challinor (1945). As the fold profile becomes increasingly symmetrical the dip of the axial plane increases and short limb height —→ long limb height —→ 2A

axial plane separation —→ half wavelength, $\lambda/2$.

Text-fig. 2 shows the application of the proposed terms to folds observed in the South Orkney Islands, Falkland Islands Dependencies.

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D. H. MATTHEWS.

DEPARTMENT OF GEODESY AND GEOPHYSICS,
CAMBRIDGE.

1st October, 1958.

AFRICAN EROSION SURFACES

SIR,—In a spirited controversy on the origin of certain erosion surfaces in north-east Belgian Congo, Lepersonne (1956) recognises three ages for the surfaces displayed between Nioka and Mahagi Port in Ituri District. Ruhe (1958) on the basis of his detailed geological and geomorphological studies contends that only the end-Tertiary Surface with a few isolated remnants of an earlier surface are present, but owe their varying altitudes largely to the effect of faulting. To support his interpretation, Ruhe states: "on the regional basis, Pallister (1956) has shown in Uganda that the three classic surfaces of Wayland are in reality only two." Ruhe refers to my short paper on slope form and the probable correlation with the Buganda Erosion Surface (mid-Tertiary) of a local bevel in Masaka District of Buganda known as the Koki Surface. He reads more into my interpretation than was intended or is justified. High-level, pre-Tertiary surfaces are present in western and south-western Uganda and of course such earlier surfaces are well authenticated elsewhere in the neighbourhood of the western rift. Wayland's recognition of three major peneplains is still accepted while more detailed work has shown that the original three peneplains may locally be composite in character.

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GEOLOGICAL SURVEY DEPT.,
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10th October, 1958.