CORRESPONDENCE

THE USK MONCHIQUITE—A " PIPE INTRUSION "

SIR,—The discovery of the Usk monchiquite is reputed to be due to a former Cardiff student who noted a very black rock being used as a roadstone on a private drive. He took specimens to Professor W. S. Boulton, then Professor at Cardiff, who gave an account of the occurrence (*Quart. Journ. Geol. Soc.*, 1911, lxvii, 460).

The present author made a number of visits with student parties during the period 1920–1938. There was then only a small exposure at the side of a private drive, with the rocks almost concealed by vegetation.

When class excursions were resumed after the second war, it was found that a quarry, about 200 ft. long, had been opened on the monchiquite outcrop, presumably to obtain material for camp roadways, other hard stone being scarce in that part of the Old Red Sandstone outcrop.

The higher side of the quarry wall then afforded a fine vertical section of the monchiquite intrusion, but the floor of the quarry was concealed by a great mass of large blocks of unweathered monchiquite liberated by blasting.

The quarry face consisted partly of unweathered and partly of weathered material. The junctions of weathered and unweathered material were exceedingly irregular, and in places the original intrusive rock had weathered to a reddish-brown soil, with included blocks showing all stages from the fresh black rock to the brown soil.

The new and larger exposures sufficed to show that the occurrence was a pipe-intrusion exactly similar to occurrences of kimberlite pipes in the Kimberley area of South Africa.

The similarity to the South African pipes is, of course, no guarantee that the Monmouthshire intrusion carries any material of economic importance. There are plenty of " pipes " in South Africa which fail to yield any minerals of commercial importance.

Along a large part of the exposure in the quarry wall the intrusive rock extended right up to the surface. But on one side of the excavation the igneous rock was overlain by a deposit of well-rounded pebbles which must have come from a considerable distance.

A more recent visit, 1954, showed considerable changes in the appearance of the ground in the vicinity. The former extensive woods had all been cut and turned into agricultural ground, so that it would now be difficult to recognize the locality from Professor Boulton's original description, though the newer pre-1948 quarry is still visible on a cleared hillside.

" TAN-Y-RHIW,"
RHIWBINA HILL,
NR. CARDIFF.
19th October, 1954.

A. HUBERT COX.

THE GREAT GLEN FAULT, CO. DONEGAL

SIR,—In a recent issue of the *Magazine* (Vol. xci, p. 338), J. B. Auden poses the question of the extension of the Great Glen Fault into Co. Donegal. In the process of surveying a large tract of the western and northern parts of that County we have already accumulated considerable evidence of the presence of a major S.W. trending fault.

Such a dislocation can be traced from the northern tip of Inishowen, along the northern side of the Knockalla Mountains, through the Leannan valley and through the localities of Drumbologe Bridge, Swilly Bridge, Cummirk Bridge, and thence presumably by Lough Ea and Sir Albert's Bridge. In Inishowen it constitutes the smash zone of W. J. McCallien (1935, *Proc. Roy. Irish Acad.*, xlii, p. 407), north of Knockella it forms the faulted boundary of an outlier of presumed Old Red Sandstone age (H. E. Wilson, 1953, *Proc. Roy. Irish Acad.*, lv, Sec. B, No. 13, p. 294), near Milford two very

different Dalradian quartzites are brought into line and thence for many miles to the south-west, garnetiferous schists are brought against rocks in a very different metamorphic condition.

The rocks on either side of this fault show strong contrast in sedimentary facies, structure, and metamorphism. Where we have mapped this important line in detail it consists of a number of closely spaced but slightly curving faults which dissect the country into a series of lenticular strips. There is additional evidence of movement in the presence of both coarse and fine grained crush breccias, veining, and slickensiding. Parallel to the main dislocation there are numerous subsidiary faults, some of which show considerable strike-slip movement ; we may mention the Gweebarra and Lough Belshade Faults, the latter with a left-handed strike-slip of 2·2 miles (G. Walker, 1954, *Geol. Mag.*, xci, p. 116).

We have still considerable areas to survey and it will be some time before we can display this structure in full. Until then, we shall not hazard a guess as to the extent or sense of relative movement. We can, however, affirm that this Knockalla-Leannan Valley Falt is a major dislocation which is in direct line with the Great Glen.

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10th November, 1954.

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REVIEWS

OIL IN THE MIDDLE EAST. By STEPHEN HENRY LONGRIGG. pp. xiii + 305. Oxford University Press (under the auspices of the Roy. Inst. Internat. Affairs), 1954. Price 25*s*.

Industrial enterprise, guided by geological science and its physical aides, has discovered vast reserves of oil in the Middle East ; increasing world demand for petroleum products will cause this process to continue. As geologists know, the formation, concentration and preservation of this enormous amount of oil is due to a combination of exceptionally favourable geological circumstances. Owing to a scarcity of suitable publications, they are less well informed on the history of the oil operations and the political stresses involved in the creation and distribution of this wealth. Brigadier Longrigg, well qualified for the task, has written (under the auspices of the Royal Institute of International Affairs) a book which can do much to remedy this. It is not a geological book, but includes a general geological introduction and brief notes on the geological results of many test wells. All geologists interested in the results of their professional activities could profitably read it ; and give some thought to the statesmanship required of many nationalities if lasting benefits are to result from this modern, oil soaked, Eden. The book has five maps showing the distribution of oilfields, pipe lines, concession boundaries, etc. ; it seems unnecessary to have merged all the main Persian fields into one monster on the first map, causing it to overflow one concession boundary in two places !

N. L. F.

ALBERT HEIM. LEBEN UND FORSCHUNG. By MARIE BROCKMANN-JEROSCH, ARNOLD, AND HELENE HEIM. Wepf and Co., Verlag, Basel. 268 pp., with 11 figs. and 15 plates. 1952. Price S. Fr. 18·50.

Albert Heim died in 1937 in his eighty-ninth year. His life spanned the great period of world-wide geological exploration and to Heim must for ever