

CORRESPONDENCE.

THE MAGMATIC ORIGIN OF ORES.

SIR,—The interesting letter of Mr. H. C. Sargent published in our last issue creates a somewhat anomalous situation, because the author of the paper referred to in it is also the editor of this Magazine, and it seems rather irregular for the editor in his private capacity to write a letter to himself in his editorial capacity. But our readers will perhaps excuse this unusual proceeding.

It may be well to confess that the suggestion of a granite batholith underlying the mineralized area of Derbyshire was put forward mainly in default of a better explanation. The presence of great quantities of fluor spar must be accounted for somehow, and according to the accepted canons of geology fluorine is associated with acid intrusions, whereas the only known igneous rocks of that area are decidedly basic. However, the facts disclosed by the data supplied in Mr. Sargent's letter do seem to afford a possible explanation of the presence of fluor spar in that area as the result of the differentiation of a magma rich in potash and silica, with granitic affinities, though far from being a granite magma in the ordinary sense. It is of course obvious that a lava-flow cannot account *directly* for the formation of minerals higher up in the rock-series, which are necessarily of much later date than the lava. It should be remembered that fluor spar is also found in quantity in the northern part of the Pennine area, where the only igneous rock that could be concerned in its formation is the Whin Sill. The publication of Mr. Sargent's detailed work will be awaited with interest: till this occurs further speculation on the subject may well be deferred.

R. H. RASTALL.

THE SILURO-DEVONIAN JUNCTION IN ENGLAND.

SIR,—No apology is needed from Dr. Robertson for reopening this controversy; on the contrary, his paper in the August number of the GEOLOGICAL MAGAZINE is a welcome indication of the progress towards general agreement. Reviewing the subject from still another angle, he has expressed agreement with the main conclusion put forward by de Dorlodot, Barrois, myself, and others, that the Ludlow Bone-bed or the equivalent horizon elsewhere is the most generally satisfactory base for the Devonian. Dr. Robertson mentions that he does not accept certain statements in my 1923 paper in this MAGAZINE, and that he disagrees with certain of the reasons given for the selection of the Ludlow Bone-bed as the Devonian base. I think there are only two points of apparent disagreement. I showed that the Ludlow Bone-bed passes laterally when traced southwards

from Shropshire into a bone-bed conglomerate below which there is an unconformity of varying importance. Although a break in the succession is a help in mapping, Dr. Robertson is undoubtedly right in arguing that the limit should be determined where the sequence is unbroken and the presence of an unconformity which is frequent at about the Ludlow Bone-bed horizon away from Shropshire is really no argument for the choice of this horizon as the base of the Devonian. Dr. Robertson is also justified in hinting that I have tended to overemphasize the absence of fish in pre-Bone-bed strata. Their absence is comparative rather than complete! So far as I can see, only one other point of disagreement remains, and that is not one vital to the general conclusion. I was puzzled, and still am, over the interpretation of the sequence in Central Wales—the Afon Sawdde sections and the Llandilo district. The Geological Survey's reading of the succession in the latter area is perfectly clear, but I do not think the possibility of contemporaneity between part of the Green Beds and the Tilstones further east is entirely eliminated. Mr. S. H. Straw's recent work, from the brief abstract available, seems to confirm the possibility. When working over the ground in 1920-1, I was unable to satisfy myself as to the position of the Devonian base in Central Wales and Mr. Straw is no doubt right in stating that my tentative suggestion placed it too low.

Evidently much work remains to be done before agreement is reached between workers in this particular area, and it is desirable that it should be perfectly clear that the main question of the fixation of the Siluro-Devonian boundary is not dependant thereon.

L. DUDLEY STAMP.

LONDON SCHOOL OF ECONOMICS, W.C. 2.

9th September, 1928.