

## CORRESPONDENCE.

### THE GIRVAN-BALLANTRAE SERPENTINE.

SIR,—There is no “question at issue” between Dr. J. G. C. Anderson and myself. Argumentation is doubtless essential in the conduct of the affairs of the state and men, and in the legal arenas. But in any of the fields of inferential scientific inquiry progress depends rather upon the production of fresh evidence. It was for the purpose of pointing to fresh evidence that I wrote my paper (*GEOL. MAG.*, January, 1937); not because I had any hypothesis either to sustain or subvert. Dr. Anderson says that he cannot observe the foliation of the Ballantrae serpentine. Far be it from me to say any unkind thing to an enthusiastic young worker. Therefore I shall only reply to Dr. Anderson that if, at low tide, he will examine carefully the curving and polished sides of the red serpentine skerries on the coast south of Burnfoot he will there easily discern the serious inaccuracy of his statement.

Dr. Anderson's description of the shore section at Pinbain, cited as affording “unequivocal evidence” relating to the geological age of the serpentine, surely requires emendation. Thus Dr. Anderson states that south of an upstanding band of porphyritic spilite “Peach and Horne have mapped a belt of serpentine exposures. These can be locally separated into two rather narrow bands . . . South of the more southerly band rises a small knoll of non-porphyrific spilite with doubtful pillow structure . . . On the south side of the knoll serpentine is seen in contact with the lavaform rock.” My inference is that this knoll must have serpentine upon both its north and south sides. I leave it to Dr. Anderson to clarify this obscure part of his narrative.

I did not put forward the thesis that the serpentine had been metamorphosed. What I intended and attempted to make clear was this, that the parental peridotite must have experienced a long and complicated metamorphic history prior to its hydration and conversion to serpentine. A closely similar story, I have lately come to believe, probably attaches to the peridotite of the Lizard. Thus I now incline to regard the peridotite of the Lizard as an integral component of an original banded and stratified complex, all the members of which, in the first place, were folded and metamorphosed together. Certain of the felspar-bearing rocks have been transformed to hornblende-schists, but the peridotite by long subsequent hydration, after the manner corresponding to Ballantrae, has simply withdrawn from the metamorphic picture. This interpretation, it must be indicated, is consistent with the forty-years-old opinion of Mr. Howard Fox and Sir Jethro Teall that the Lizard serpentine forms “part and parcel of the foliated series to which the hornblende-schists belong” (*Ref. Quart. Journ. Geol. Soc.*, 49, 200).

D. BALSILLIE.

ROYAL SCOTTISH MUSEUM,  
EDINBURGH.  
8th April, 1937.