

CORRESPONDENCE.

FOREIGN PEBBLES ON OUR SOUTH COAST.

SIR,—I am not aware if the significance of the foreign stones—I do not mean, of course, the granite blocks at Paghram, but smaller pebbles of granite, porphyry, etc., occasionally occurring in the shingle of our southern coasts—has ever been remarked upon; but it has occurred to me, as no doubt to a hundred other geologists, both professional and amateur, that these are almost the only actual evidence that can be expected, in the absence of Drift and ice-markings, in favour of Dr. Croll's suggestion as to the passage of a great ice-sheet over the South-Eastern corner of England during the height of the Glacial Epoch. I have frequently observed such stones both here and at Brighton, and only within the last few days, I have picked up a variety of granites, syenites, quartz-pebbles, and porphyries (two or three dozen in all), some red sandstones, and one peculiar siliceous *greenstone*, the original source of which might possibly be identified. It is very improbable that any of them are British, much more likely that they are Scandinavian. Possibly, of course, they may be parts of ballast, but I confess it seems to me much more probable that they are portions of Scandinavian drift. The evidence is slight, but it seems the only kind obtainable, and it may be taken for what it is worth.

The mass of the beach along our south-eastern coasts, of course, consists of Chalk flints, but even these are of a very varied character, the majority being unaltered and referable at once to the original Chalk, while others bear marks of having once belonged to Eocene pebble beds (London Clay basement, Oldhaven or Bagshot), a few to the Isle of Thanet Sands, and a very large proportion, as I infer from their brown coatings and sub-angular forms, to glacial gravels or drift.

J. A. BIRDS.

St. LEONARDS-ON-SEA, Oct. 16, 1880.

ON THE DISTRIBUTION OF VOLCANOS.

SIR,—Having been absent during the last summer in the north part of Yezo and the Kurile Islands, it was not until a few days ago that I received your Number of May, 1880, in which there is a criticism of a short paper of mine on the "Geographical Distribution of Volcanos," published by you in April, 1880.

This paper was chiefly written for the purpose of pointing out a fact, which, so far as I am aware, had not previously been noticed, namely, volcanos are chiefly distributed along the borders of land which slopes STEEPLY beneath the sea.

Whilst suggesting an explanation for this I had reason to refer to the position of an isothermal surface lying partly under the land and partly under the sea. I then said that it was not unlikely that this surface would be found at a "much greater depth beneath the rocks which form the bed of the ocean," than the depth at which we should find it beneath the land.