CORRESPONDENCE.

THE RIVER OF THE BALTIC.

SIR,—In reference to Professor Bonney's letter in the GEOLOGICAL MAGAZINE for this month, will you allow me to say that some light on the origin of the remarkable channel which follows the southern coast of Norway seems to be thrown by reference to Dr. Kjerulf's map of the ice-striæ and course of the erratic blocks in his work, "Geologie des Süd. und Mit. Norwegen," Taf. vi, p. 25, from which it will be seen that the erratic blocks have been carried for long distances westwards along the path indicated by the deep channel between the Christiania Fiord and Stavanger. On the other hand the land striæ point southwards; so that the direction of the ice-drift on the submerged portion is perpendicular to the general course of the movement of the ice on the land to the north. The question arises, were the movements of the ice on the land southwards, and that of the ice westwards, on the coast, contemporaneous; or do they represent different epochs of the Pleistocene period? If contemporaneous, the land-ice must have been diverted from its normal course by some opposing barrier; if referable to different epochs, the erratic blocks may have been carried by floating ice along with the trend of the current passing outwards through the Skager Rak; or they may have been carried by land-ice during an epoch of elevation, while the ice itself, in the form of a great glacier, may have ploughed out the loose material with which the whole floor of the Skager Rak may once have been covered, and piled it up on either hand as it moved along. The origin of this channel is certainly a difficult problem; but I feel satisfied it can only be solved by considerations connected with the movements of the land-ice over the unsubmerged portions and those of the submerged. EDWARD HULL.

June, 1899.

THE GEOLOGY OF THE COUNTRY AROUND CARLISLE.

SIR,—In your review of Mr. Holmes' Memoir of the Geology of the Country around Carlisle, you state that "the conclusions at which Mr. Holmes arrived were not those to which Mr. Aveline and the late Sir Andrew Ramsay could agree." As I have never seen Mr. Holmes' Memoir, or knew that it was published, I do not know what these conclusions are. But I have always maintained that no part of the St. Bees Sandstone represented any part of the Bunter Sandstones of the Midland or Northern Counties, but was more probably represented by what has been mapped in Yorkshire as the "Middle Marls and Sandstone" and the "Upper Magnesian Limestone" (a very misleading name). I have never stated that there could be no passage from the Permian up into the Trias, but just the reverse; I have also stated that there was a much greater conformity between the so-called Middle Marls and Upper Limestone (which are classed with the Permian in Yorkshire) with the Bunter Sandstone than with the Lower Magnesian Limestone below them. My anxiety is not so much for the retention of names,

but that every formation should be placed on its proper horizon, and I cannot believe that the proper horizon of the St. Bees Sandstone is the same as the Bunter Sandstones. W. T. AVELINE.

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THE PERSIAN VOLCANO KOH-I-TAFTAN.

SIR,—In a footnote to a joint paper by my son and myself on the rocks of the Baluch-Afghan frontier (Q.J.G.S., vol. liii, p. 289), we gave a short account of a visit by Captain P. Molesworth Sykes to the volcano of Koh-i-Taftan, 12,600 feet high, situated near the eastern border of Persia, about 200 miles north of the Arabian Sea.

Captain P. Molesworth Sykes, who is now Consul at Sistan (Seistan), paid a second visit to Taftan (*Koh* means 'mountain' and *-i-* 'of') last January, and he writes to me as follows:—"When passing the eastern base of Taftan, Wood of the Telegraphs and myself tried to scale it from that side. At about 12,000 feet elevation we found seven orifices from which white vapour was being ejected with a noise like that of a steam-engine. The holes were very small and covered with stones, while, all around, were sulphur and sal-ammoniac. I collected here three tins full of the sulphur, the ash, and the stone. Almost at the summit the road was barred by perpendicular cliffs some 30 feet high, and so we could not reach it. The vapour issuing from the seven orifices (two being much bigger than the others) was visible for a distance of 10 or 15 miles, while the ground close to me was hot enough to break the bulb of my register. The climb was much steeper than on the south-west side, or perhaps I had not quite got over my seediness of the previous summer."

As so little is yet known about the Taftan volcano, and as it lies so much outside the range of ordinary travellers, the above brief account of Captain Sykes's second visit to this locality is interesting. The great heat of the ground near the orifices through which steam is still ejected under considerable pressure shows that the fires of this old volcano have not yet completely died out.

Captain Sykes kindly sent me the specimens he collected, but as they have not yet arrived I am afraid they have gone astray *en route*, or have been confiscated by some over-zealous Persian official who, in his care for the morals of Europe, may have thought that suspicious intercourse with the infernal regions ought not to be encouraged.

Should Captain Sykes again visit Koh-i-Taftan, it would be interesting if he could make a good representative collection of the solid rocks of that mountain found *in situ*.

I would remind those who may think it strange that an active volcano should have existed so far away from the sea that in Eocene times the sea flowed over what is now the Indus Valley into Baluchistan and Afghanistan (Manual Geol. India, 2nd ed., p. 494). This sea did not *commence* its retreat until the end of the Eocene period; and whilst it remained, the Koh-i-Safid range, of which Koh-i-Taftan forms a part, was probably not far removed from its shore. C. A. MCMAHON, Lieut.-General.

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