

LETTERS TO THE EDITOR.

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A Shower of Sand-eels.

ABOUT 3 o'clock on the afternoon of Saturday, August 24 last, the allotment-holders of a small area in Hendon, a southern suburb of Sunderland, were sheltering in their sheds during a heavy thunder-shower, when they observed that small fish were being rained to the ground. The fish were precipitated on three adjoining roads and on the allotment-gardens enclosed by the roads; the rain swept them from the roads into the gutters and from the roofs of the sheds into the spouts.

The phenomenon was recorded in the local newspapers, the fish being described as "sile." I was away at the time, but, seeing the account, I wrote to Dr. Harrison, and thanks to him, and especially to Mr. H. S. Wallace, I obtained a sample of the fish, and I was able yesterday (September 5) to visit the place in the company of the latter gentleman.

From those who saw the occurrence we derived full information, which left no doubt as to the genuineness of what had been stated, and this we were able to put to the test, for a further sample was obtained from a rain-barrel which could have got its supply only from the spout of the shed to which it was connected. The precipitation of the fish, we were told, lasted about ten minutes, and the area involved Commercial Road, Canon Cocker Street, the portion of Ashley Street lying between these streets, and the adjoining gardens. The area measured approximately 60 yards by 30 yards, and was thus about one-third of an acre. It is not easy to say how many fish fell, but from the accounts it may be gathered they were numerous; there were apparently several hundreds.

There can be no question, therefore, that at the time stated a large number of small fish were showered over about one-third of an acre during a heavy rain accompanied by thunder; we were informed that no lightning was observed, and that the wind was variable.

All the examples which came into my hands from different parts of the ground and from the rain-barrel prove to be the lesser sand-eel (*Ammodytes tobianus*). They all, moreover, are about 3 in. in length, or 7.5 cm. to 7.9 cm. They are not "sile," a name usually given to the very small young of the herring. But the sand-eels are sea-fish, and it is evident that the sand-eels showered to the ground at Hendon were derived from the sea.

On sandy beaches around our coasts the lesser sand-eel is very common. As its name implies, it burrows into the sand, but in the bays it may often be seen not far from the surface swimming about in immense shoals—shoals which are characterised by the members being all about the same size.

The place where the sand-eels in question were deposited lies about one-quarter of a mile from the seashore, but it is probable that the minimum distance of transport was at least half a mile.

The only explanation which appears to satisfy the conditions, therefore, is that a shoal of sand-eels was drawn up by a waterspout which formed in the bay to the south-east of Sunderland, and was carried by an easterly breeze to Hendon, where the fish were released and deposited. It is significant that the area of deposition was so restricted, and that no other area

was affected. The origin and the deposition were therefore local.

We were informed that the fish were all dead, and, indeed, stiff and hard, when picked up immediately after the occurrence. This serves to detract from the possibilities of distribution being influenced by such an occurrence, but it is possible that other species would be able to withstand such an aerial method of dispersion. It is more than probable that the vortical movement of a waterspout would transport plankton. This was naturally not observed in this case, and the small creatures, including eggs and young stages, would likely be carried over a wider area.

A. MEEK.

Dove Marine Laboratory, Cullercoats,
September 4.

THE WATER-POWERS OF THE BRITISH EMPIRE.

FOR a number of years NATURE has been, on the subject of water-power in Great Britain, a *vox clamantis*. It has pointed out that while other countries—notably the United States, France, Italy, Switzerland, and even Canada—have possessed hydrographic services, there has been no co-ordinated effort—indeed, one might almost say, no effort of any kind—in this country to procure the information essential to the determination of its water-power resources and their extent and availability. It is true that a merely superficial review is sufficient to show that those resources cannot possibly vie with the vast stores of power locked up in the Alps, the Pyrenees, and the Rockies. Neither, in consequence of the plenitude of our coalfields, has there hitherto been any occasion to trouble in the least about additional, or alternative, sources of power supply. But the war, or rather its unexpected protraction, has of late completely changed the national outlook. The reckless prodigality with which our stores of solid fuel have hitherto been depleted can no longer be countenanced, and the certainty of ultimate exhaustion has to be faced before increasing scarcity causes prices to mount to unremunerative heights. The nation is learning economy, not only in food and clothing, but also in regard to its natural resources and mineral endowments. A salutary experience has been gained, and, though somewhat late in the day, it is satisfactory to know that the position is at last beginning to be fully realised and appreciated.

The Water-Power Committee of the Conjoint Board of Scientific Societies in their preliminary report, which was abridged in NATURE of September 5, p. 16, has taken a wide and comprehensive view of its functions. The committee has, the report states, "endeavoured to collect all the available relevant information" respecting the amount and distribution of water-power in the British Empire. Turning over the twenty-eight pages of the report, it must be affirmed that the information thus forthcoming is lamentably scant and imperfect. Throughout the length and breadth of the Empire two countries only—Canada and New Zealand—have recognised the fundamental importance of systematic investigation. Initiatory efforts on a small scale have, indeed, been made