LETTERS TO THE EDITOR.

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Further Notes on a recent Volcanic Island in the Pacific.

THE volcanic island—Falcon Island—in the Tonga group in the Pacific, of the recent appearance of which an account is given in NATURE, Vol. xli., p. 276, has recently been passed by a French vessel of war, the *Duchaffault*, which reports that the island is not now more than 25 feet high.

In October, 1889, when examined by Commander Oldham, it was 153 feet high, and a little over a mile long. Nearly entirely composed of ashes, it was rapidly washing away, and by the account above, it would seem that more than one-half the island must now have disappeared. W. J. L. WHARTON.
October 20.

Earth-fractures and Mars "Canals."

ON seeing the figure of the so-called "canals" of Mars, published in NATURE of a few weeks back, I was at once reminded of the pattern assumed by the cracks of glass broken by torsion, as in Daubrée's well-known geological experiment.

I enclose a photograph of part of a large slab of glass broken in this way in a class experiment of my own, and although other slabs, which have unfortunately not been preserved, exhibited, if I remember rightly, still more Martial-looking networks, I think that the general resemblance is obvious enough in this case.

It may perhaps be well to explain to non-geological readers of NATURE that Daubrée's glass-breaking¹ is regarded by many as reproducing in miniature the kind of fractures which are found to occur in those portions of the earth's crust with which we are acquainted, and that by torsion only has it proved possible to imitate the peculiar pattern assumed by such fractures, whether

they be joints or dislocations. It is further held by many that such lines of fracture in such patterns are a necessary result of the shrinking of the outer coat of a planet in course of cooling.

Mere fractures, such as we meet with in our own planet, could, of course, not be seen from any considerable distance, and if the circumstances of denudation were the same in Mars as with us, the "canals" could certainly not be the representatives of our usually hidden and featureless earth-cracks. There seems, however, to exist, in the extraordinarily rapid melting of gigantic ice-fields described by Prof. Norman Lockyer, some evidence of denuding power in Mars on a scale enormously larger than is the case with us. Earth-fractures—and for the matter of that Mars-fractures too—must many of them be lines of weakness along which denudation acts more freely than elsewhere, and if this denudation be phenomenal and cataclysmic, as appears to be likely in Mars, wide valleys or channels capable of being distinguished at great distances would soon be scoured out along them.

¹ Not "ice-breaking" as a mistranslation of the word "g'ace" has caused it to be described in some English text-books.

I would wish especially to draw attention to the three following points observable in the photograph, viz., the two marked directions in which the crack-lines run, one set crossing the others often at, or very nearly at, right angles; their occasional doubling and rough parallelism for some distance; and their frequent sudden stoppage—three of the features most noticeable in the Mars lines.

G. A. LEBOUR.

Durham Coll. Science, Newcastle, October 13.

A Wave of Wasp-Life.

MR. HUDSON'S charming work on "The Naturalist in La Plata" reminds me of a very interesting wave of wasp-life which appeared in Wisconsin in the summer of 1886. We were living at the time in our summer-house at Pine Lake, and were making observations on the habits of the different animals in the neighbourhood.

In the latter part of July we suddenly found ourselves surrounded by large numbers of yellow-jackets and hornets. Everywhere through the woods and fields a veritable plague of wasps seemed to have descended upon the earth. During all the month of August we heard the same report from summer residents within a radius of twelve or fifteen miles of Pine Lake. In our immediate neighbourhood we knew of forty-seven nests. Allowing 1500 wasps to a nest—a very low estimate for that season of the year—this gave us over 70,000 wasps. Plates of meat and bones that were set outside for the cats were immediately covered with them, and in spite of screens in doors and windows they even entered the house, alighting on the food at the dinner-table, or darting about and catching flies.

The cause of this sudden increase in the number of wasps was evidently a general one, since it acted in the same way upon three species—*Vespa vidua*, *V. maculata* and *V. germanica*. An examination of the Signal Service statistics does not show anything unusual in the preceding winter and spring, but either the weather must have been especially favourable, lessening the ordinary death-rate of the queens, or there must have been a marked decrease in the parasites or other enemies which ordinarily keep these species in check.

The duration of the favourable conditions proved brief enough. It is probable that every one of our forty-seven nests furnished, at the very lowest estimate, one hundred developed and fertilized queens to start forty-seven hundred new nests in the following year; yet the increase in the checks to the too great ascendancy of these species more than counter-balanced the abnormal increase. The winter of 1886-87 was not especially severe, but in the following summer the most careful search on our part, and on the part of others, whose efforts were stimulated by the offer of rewards, only gave us four nests in our neighbourhood, and on all sides we were met by the inquiry: "What has become of the wasps?"

G. W. PECKHAM.

Milwaukee, Wisconsin, October 12.

Note on the Occurrence of a Freshwater Nemertine in England.

A FEW days after reading M. de Guerne's "History of Freshwater Nemerteans," published in the August number of the *Annals*, I happened upon a specimen of the group amongst the roots of some water plants, which I collected in the river Cherwell, close to Oxford. I was, at the time, searching for the cocoons of a new Rhinodrilid worm, of which a description will shortly appear. The gathered roots, with the cocoons, were placed in a bottle of water, in order that the worms might hatch out. On examining the bottle two days later, namely, on September 5, I noticed a small bright orange animal, about half an inch long when extended, creeping amongst the cocoons. Further observation with the microscope showed that it was a species of *Tetrahymena*. Unfortunately the animal was crushed before I had done more than sketch the general appearance and make some few observations, and I have not yet succeeded in finding more specimens; so that I am unable to state how far it agrees with or differs from the previously known freshwater forms enumerated by M. de Guerne, most of which are included by Silliman and later authors under the title *Tetrahymena aquarum dulcium*.

In one or two points, however, my sketches show certain differences from those of Silliman:—