

having been a shallow-water deposit was "based exclusively on the present habits of the very few genera of Mollusca that have survived from the Chalk period, and seems quite in contradiction to the far more important groups, the Sponges, Echinodermata, and the minute organisms of which the formation is so largely composed, while no opinion has yet found its way into the hands of geologists regarding the depth of water indicated by the Crustacea and the fishes of the Chalk." Mr. Gardner appears to have overlooked that passage in my Address to the Biological Section of the British Association (to which he refers in his letter), wherein I added, "Mr. Woodward tells me that the Chalk Crustacea are shallow-water forms." Dr. Woodward is certainly no mean authority on fossil Crustacea. As to the surviving genera of Chalk Mollusca being "very few" in number, I would refer him and my readers to the long list of genera given in my Address, which was furnished by our great palaeontologist, Mr. Etheridge, and to the exclusively littoral habits of some of those genera. And with respect to the Sponges, Echinodermata, and minute organisms being "far more important groups" than the Mollusca, I must leave that question to naturalists in general. Sponges (silicious as well as horny or ceratose), and Echinoderms are notoriously not restricted to deep water. Quite the contrary. They live at every depth from the shore between tide-marks to the abyssal and benthic zones. The "minute organisms" which enter so largely into the composition of the Chalk, for the most part, if not entirely, inhabit the surface of the sea.

June 30

J. GWYN JEFFREYS

#### Protoplasmic Continuity in Plants

IN the very interesting article on "The Continuity of the Protoplasm through the walls of Vegetable Cells," which appeared in NATURE of June 19 (p. 182), reference is made to the doubt which still exists as to "whether the continuity is maintained from the earliest stages, or is established later." This point is so important in its physiological bearings, as the article goes on to show, that I may, perhaps, be allowed to state that, with regard to one group of plants, the question appears to be already settled. I allude to the Red Sea-weeds or the *Florideae*. The writer of the article makes no mention of these plants, but, as I have described elsewhere (see *British Association Report*, 1883, p. 547, and *Journal of Botany*, February and March 1884), many of them exhibit a very notable system of intercellular connections, which, extending over the whole thallus, renders the protoplasm practically continuous from the base of the frond to the extremities of its furthest ramifications. Now in these cases the continuity is certainly maintained from the first, and is due to the mode of cell division by which the thallus is built up. Into the details of this there is no need to enter further than to say that, when the protoplasmic body of a cell divides into two or more portions, these do not become completely separated from one another, but remain connected *inter se* by strands of protoplasmic material, which grow in thickness with the growth of the cells, and thus maintain the continuity from the earliest stages onward. So far, then, as concerns the *Florideae*, I venture to think the physiological import of the phenomena of continuity may be safely discussed on the assumption of its existence *ab initio*. What that import may be I do not propose to consider, my object being simply to point to the *Florideae* as throwing valuable light on the whole subject, and giving some support to the view that "the entire plant or organ is practically one whole—one mass of protoplasm cut up into chambers which communicate with one another, and bounded by a membrane on the exterior."

THOMAS HICK

#### Aseismic Tables for Mitigating Earthquake Shocks

WITH respect to Mr. C. A. Stevenson's letter in your last issue (p. 193), I may state that my information was obtained from Mr. R. H. Brunton's paper on "The Japan Lights" in *Proc. Inst. Civ. Eng.*, vol. xlvii., pp. 6-8, 35, and from the communication by Messrs. Stevenson in the "Discussion" on that paper (pp. 26-29). The results referred to by Mr. Stevenson have, perhaps, been obtained since this paper was read (November 14, 1876).

W. TOPLEY

28, Jermyn Street, London, June 27

#### Black Rain

A REMARKABLE shower of black rain fell here and in the neighbourhood last Sunday, the 22nd inst. The forenoon had

been fine, though somewhat hazy, but about 3.30 p.m. heavy cumuli formed to north and north-west. Gradually a dense mass of cloud and haze came from the northward, presenting a lurid, threatening aspect, and it became so dark that one could not read a book indoors. At 4.30 rain began to fall, at first a few drops, and soon after a heavy downpour. When this commenced I noticed a number of black objects floating in the air, which I at first took to be flies or winged ants, but they rapidly increased in number, and on looking at them more closely I found them to be particles of soot, on an average about the size of the common fly. Their number was so great that, it appeared for ten minutes to be snowing black, the descent of the blacks being slow, like that of snowflakes. After it had rained heavily for fifteen minutes, these "blacks" ceased and the air became lighter, but the rain continued for another hour, and altogether I measured 30 inches in my gauge. I find on inquiry that this black rain was noticed in the whole neighbourhood—at least four miles to the north-east and two miles to westward, hence it cannot have been due to local chimneys. As far as I can ascertain, the shower was entirely local; it seems to have followed a narrow course from north to south only a few miles wide, and did not extend to either Eastbourne or Hastings.

Fletching, Sussex, June 24

W. J. TREUTLER

#### A Cannibal Snake

RATHER a strange occurrence came recently before my notice, and thinking perhaps you might care to insert it in your columns, I send you the facts of the circumstance. A few days since, towards evening, I killed a snake just close behind my house; it measured about a yard and a half in length, was one of the most deadly of the numerous kinds of snakes found in Java, and bears the name of "Oelar belang." On examining it later I found what I thought to be the tail of another small snake protruding from its mouth, but on pulling it out I was greatly surprised to discover that it was really a snake of the same species, and of almost the same length. There was certainly not more than three inches' difference in the length of the two snakes, and at the time I killed the outside snake only about an inch and a half or two inches of the tail of the one he had swallowed protruded from his mouth. The outside snake was of course considerably thicker of the two, but this may be attributed to his having swollen after, or rather during, his tremendous meal. The natives here say that the two snakes must have been fighting, the victor afterwards swallowing his opponent. I should be pleased to know whether such an instance has ever before been brought before your notice, or whether it is really an uncommon case.

EDWIN H. EVANS

Soemedang, Java, May 20

#### Peronospora infestans

ON the 22nd inst. I observed that this fungus had appeared on the haulm of the potato crop in one or two places in my garden in this city. On examining to-day a potato crop in another garden a mile distant from mine, I perceived that that crop was likewise affected. Considering the dryness of the spring weather, the appearance of the disease is remarkable. According to my observation, the attack of the mould is a month earlier than usual. It may be added that hereabouts, this season, blight of all kinds is prevalent, while last year was blight free. Inclosed is a specimen of diseased haulm.

J. LI. BOZWARD

Worcester, June 24

#### KEPHIR

IN No. 10 of the *Journal of the Berlin Chemical Society* for June 23 is a communication on this substance by M. Struve of Tiflis, continued from a previous note in the same journal of February 25.

Kephir is a form of fermented milk which has been prepared and in use amongst the inhabitants of the Northern Caucasus for a great length of time, and occupies with them a similar position as an article of diet and medicine to that of kumis in the south-eastern steppes of Russia.

Kumis was first brought into notice in 1784, and has since then been pretty fully investigated and taken a definite position, but kephir has only been generally