circumstance that a work bearing the title "Les Eaux Minérales de la Hongrie," published under the auspices of the Hungarian Commission of the last Paris Exhibition, and very extensively circulated by them, is found upon examination to be altogether unreliable in its information. In the interests of truth I feel called upon to point out to foreigners the unsatisfactory nature of this work. This condemnation of the work in question is borne out by the following facts:—The book enumerates less than forty per cent. of the localities in Hungary at which mineral springs occur, no fewer than a thousand of such localities being omitted. Perhaps it is by way of compensating for these omissions that the anonymous author augments his list by making two or three mineral springs out of one by not discriminating its synonyms, and also by enumerating others which have no real existence. In many cases the author has failed to indicate the localities to which his information refers, especially in those instances in which there are several places of the same name; and these difficulties are increased by the numerous typographical errors in the book. The analyses published in the work are of a very unsatisfactory character, for while more than one hundred of the most recent and valuable analyses are altogether omitted, others, which were made twenty or thirty years ago, and are therefore far less reliable, are included in it.

Although it cannot be expected that a large class of readers should take an interest in these details about the Hungarian mineral waters, yet I have thought it right to point out the unreliable character of this work in your widely-circulated journal, so that the errors should not be transferred to the pages of balneological works of a more general character. To the authors of such works I should be glad to furnish information concerning the mineral waters of this country, as it is a subject which I have made my especial study.

Buda-Pest

J. BERNÁTH

Does Sargassum Vegetate in the Open Sea?

It is related by Humboldt and Harvey that floating *Sargassum bacciferum* vegetates in the open sea, by sprouting branches with-

out fructification, whilst other naturalists have seen in the yellowish floating pieces only the pale and altered dead remains of the plant. If these floating fragments were capable of vegetating, their branches should be brown or olive-coloured like living specimens on the rocks below water on the sea-shore, and if floating Sargassum really grow, fructification should not be wanting.

I have heard from several travellers, who have sometimes crossed the Sargasso Sea, that they, like me, never saw other than pale and dead floating sargassum, so that I believe those accounts of Humboldt and Harvey to be erroneous. Does any reader of NATURE know of living Sargassum in the open sea as a fact?

There exist many fanciful reports on Sargassum, e.g., that some branches of the floating Sargassum rise two inches above water, and are thus driven along by the wind. Can any one confirm this? No botanist has hitherto observed it, and no sea-weed is known to behave thus. Haeckel and other learned men who never crossed the Sargasso Sea, speak of "a colossal sea-weed forest of 40,000 geographical square miles."

I would be greatly indebted for exact information as to the degree of density in which Sargassum has been observed. Although I was eleven days crossing in a steamer the two great seas containing Sargassum, I saw nothing at all in the Pacific on the direct route from San Francisco to Yokohama; and in the Atlantic I observed only single fragments from 50 to 100 feet apart; other credible travellers assure me of having seen the Sargassum sometimes almost grouped together in loose masses or strips of about 400 feet in length, hardly at all entangled and of no depth. I doubt therefore, also, whether Sargassum could hinder sailing vessels.

OTTO KUNTZE

Leipzig-Eutritzsch, September 30

[In Dr. Kuntze's letter, vol. xx. p. 426, line 4, read: "In Eozoon they became;" line 31, "under red heat;" line 40, condensed, not into incandescent liquids, but into incandescent crystals; line 44, "granate" ("garnet," not "granite").]

A Liquid Rheostat

WHILE experimenting on resistance to the electric current, I have devised an instrument in which fluid is used to conduct the current under examination. This may perhaps be of use to some who are interested in this subject. The sketch, Fig. 1,

shows the nature of the instrument. AB is a piece of elastic tube containing a weak solution of salt in water; this is held in the clamp C. By the screw D the tube can be compressed and its sectional area altered, and through this its resistance. C is the galvanometer and E the battery. Finding the instrument to

be very sensitive on a reflecting galvanometer I thought that probably the tube would be a means of transmitting articulate speech. I find this to be the case. Fig. 2, AB, elastic tube similar to the one used in the former instrument; CC, mouth-

piece; E, disk, connected to the tube at E. AB is put in circuit with a telephone and battery; D, screw to regulate the pressure on the tube. I call the instrument, Fig. 1, a liquid rheostat.

Taunton, September 24

FREDERICK JOHN SMITH

The Carving of Valleys

MR. WALTER R. BROWNE tells us in NATURE, vol. xx. p. 504, that he has discovered in the valley of a highland burn evidence that "the agencies of 'sub-aërial waste' are seen to have worked their will for untold ages on the Cambrian sandstones of Glen Beansdale, and to have produced—nothing."

Without making any attempt to explain how the old river channel he describes is not "choked by the debris which has come down from its sides," further than to suggest that "the tiny rannel which now drains the gulley" may sometimes be, not the little streamlet which Mr. Browne saw, but a great roaring torrent quite capable of "direct erosion of its own, and of sweeping away the debris" which may have tumbled into it from its sides, it appears to me remarkable that evidence against sub-aërial denudation should be brought from the Scottish highlands where every mountain and valley seem to testify eloquently in its favour. I am pretty familiar with a great part

of the northern highlands, and I do not remember a single mountain which does not bear on its flanks ample evidence of the energy of this form of erosion. It is now some years since I have been at Loch Maree, but if I am not greatly mistaken Ben Slioch itself is draped in loose angular fragments, the result of its own decay. If Mr. Browne, while in these regions, visited Glen Sligachan, in Skye, he must have found that wherever he walked in that wild valley, it was on fragments of rock that have not only slid down the mountain sides in vast torrents, but spread out over the whole floor of the glen, burying the original glaciated surface deep beneath them; and in all parts of the more southern and central highlands we find the same irresistible evidence of the continued waste of the hillsides by heat and cold and the rainfall.

As to the behaviour of streams in excavating valleys, very much depends upon the character and arrangement of the rocks over which the river flows; there are many streams in both