

	Fresh-water.	Salt.
Half a mile above Teddington Lock	66	0
One mile below Teddington Lock	54	0
Kew	52	37
Blackwall	39	45
Estuary of the Thames	9	60

The examination of the hard diatom-rock of Nykjöbing in Jutland gave W. Prinz some interesting results as to the structure of some Diatoms (see vol. i. p. 507). His views are criticized by A. Grunon, p. 246, vol. ii.

In the Tertiary shales of Warnsdorf, Bohemia, K. J. Taránek has found remains of a Moss (*Fontinalis* ?), with Diatoms in a very good state of preservation; one of these (*Melosira arenaria*) still exists in Bohemia.

Mr. H. G. Hawks' enumeration of the uses to which diatomaceous earth is applied (p. 785, vol. i.) is of great interest. It is used as a material in the manufacture of soluble silica and soluble glass, of porcelain, of some cements and artificial stones; as manure; as a drying material in laboratories; as a vehicle for mineral oil in lighting fires; for making floating bricks; in the manufacture of dynamite, giant powder, lithofracteur, and other explosives; and of some soaps. It is said also to be an important constituent of at least one tooth-powder ("sozodont"); and it has been used in packing ice cases.

That Sponge-spicules constitute the chief material of some chert from the Carboniferous Limestone, as proved by Prof. W. J. Sollas, is mentioned at p. 615, vol. i.

A philosophic warning for geologists occurs in the abstract of T. Fuchs's paper on Pelagic and Deep-sea Fauna, at p. 485, vol. ii., where it is pointed out that aggregations of animals analogous to those characteristic of abyssal depths may occur in the dark caverns under the coral-reefs of Brazil, thus bringing deep-sea forms in near contiguity with those of littoral habits.

The very questionable occurrence of fossil organisms in meteorites, supported by Hahn, Karsten, and Weinland, is noticed at p. 722, vol. i. The refutation by Vogt is fully given at p. 176, vol. ii.; and has been already referred to in the GEOL. MAG. Sept. 1882, p. 424.

The notes on preparing thin sections of coal and mica-schist, at pp. 577 and 578, vol. ii., are worthy of attention. T. R. J.

CORRESPONDENCE.

ON THE CAUSES OF ELEVATION AND SUBSIDENCE.

SIR,—In June of last year I contributed an article to the GEOLOGICAL MAGAZINE in which I endeavoured to show that any addition of weight on any part of the earth's surface produced a subsidence, while any removal of weight was followed by a tendency towards elevation. The evidence I brought forward covering a very wide range, and my article having been brief, I barely alluded to some sections of it, and only remarked in reference to accumulations of ice

that in the Glacial period they seemed to have been accompanied by subsidence, and that Greenland appeared to be sinking at the present day under its ice-cap. On the 21st June of this year, Mr. T. F. Jamieson, F.G.S.,¹ read a paper before the Geological Society, the published abstract of which represents his view of the subject to be "that the depression of the land was caused by the weight of ice laid upon it, and the re-elevation by the disappearance of the ice." I do not know whether Mr. Jamieson claimed complete originality for his hypothesis, but in any case the evidence collected by him must be of great value and is very welcome.

J. STARKIE GARDNER.

GREAT POST-GLACIAL FLOODS AND THE PLUVIAL PERIOD.

SIR,—In reference to Mr. H. H. Howorth's statement (see *GEOL. MAG.* Sept. p. 417) that Mr. Belt urged that these Floods (Gravel-Period) were caused by the pounding back of the European rivers, and the consequent formation of a European lake by a Great Atlantic Glacier (see Thomas Belt's papers, *Quarterly Journ. of Science*, No. 44, Oct. 1874, and July, 1878, pp. 316-360), I may observe that (in the *Quart. Journ. Geol. Soc.* 1868, vol. xxv. p. 10) I had previously stated that, "the gorging of ice at the mouth of the Thames, Seine, and Somme, may have assisted in the production of some of the remarkable gravel-beds in these rivers."

With regard to Mr. Howorth's criticisms on the uniform motion of rivers (*op. cit.* p. 419), I may observe that if the water in a navigable river did not tend not only to a uniform mean motion, but to uniform maximum and minimum motion in the respective parts of its channel, floods or short water would ensue.

I particularly excepted the case of floods, because they occur whenever the motion of the stream at any part deviates by excess from its uniform mean motion. If Mr. Howorth will refer to my paper in the *Phil. Mag.* 1853, pp. 258-274, he will find that I have particularly noticed the inequality of the current in rivers, and show that the origin of horse-shoe bends is attributable to inequalities of rainfall, and of speed of the water in different parts of its channel.

From Mr. Howorth's criticisms of the various opinions, explanations and theories of Sir Charles Lyell, Messrs. Prestwich, S. V. Wood, T. Belt, Croll, myself, and others, I conclude that the explanations of these geologists all fail to satisfy him; nevertheless he is ready with a theory of his own, calculated to meet all the difficulties of the student of Quaternary Geology. This, so far as I am able to comprehend it, is a modification of, but far transcends the wildest speculation of M. Adhémar.

ALFRED TYLOR.

SHEPLEY HOUSE, CARSHALTON, SURREY,
Sept. 16th, 1882.

¹ See the full text of Mr. Jamieson's paper, *GEOL. MAG.* Sept. and Oct. 1882, pp. 400 and 457.—EDIT. *GEOL. MAG.*