

Deep-sea Soundings and Deep-sea Thermometers

We feel sure you will not deny us space in your valuable periodical, when we tell you that, however unconsciously on your part, you, as well as other scientific authorities, are the means of doing us injustice and much professional injury, by the frequent allusions to the so-called Casella-Miller Thermometer, now used in deep-sea investigations. We are certain that we have only to call your attention to the real facts of the case for you to set the matter right before your readers.

1. We beg to state that in the year 1857 we invented, made, and supplied the Meteorological Department of the Board of Trade with upwards of fifty instruments of this description.

2. This thermometer we called the Double Bulb Deep Sea Thermometer, and a notice of it was published in the first number of the Meteorological Papers for the year 1857.

3. This thermometer, identical in every respect (except in its size), has been, after a lapse of some twelve years, *re-invented* and ushered before the scientific world with all the prestige of having a paper read upon it by the Vice-President of the Royal Society, Dr. Miller, who declared that he had just invented the instrument, in which task (of inventing an instrument well-known to all leading instrument makers, and Mr. Casella among the number) the learned doctor says he was assisted by Mr. Casella. (See Proceedings of the Royal Society, No. 113, page 482).

4. Annexed is an extract from Dr. Miller's paper describing the instrument, and by its side we give an extract from a treatise published by us in the year 1864, called "A Treatise on Meteorological Instruments."

Extract from "The Proceedings of the Royal Society," vol. xvii. page 483. Paper read June 3, 1869, by Dr. Miller.

"The expedient adopted for protecting the thermometer from the effects of pressure consisted simply in enclosing the bulb of such a Six's thermometer in a second or outer glass tube, which was fused upon the stem of the instrument.

"This outer glass tube was nearly filled with alcohol, leaving a little space to allow of variation in bulk due to expansion.

"The spirit was heated to displace part of the air by means of its vapour, and the outer tube and its contents were sealed hermetically."

5. We leave your readers to draw their own conclusions as to the similarity of the two instruments. Dr. Miller, when we called his attention to the fact of our prior claim, stated that he was not aware of the existence of our instrument, and we freely acquit Dr. Miller of conscious plagiarism, but we cannot omit to state, at the same time, that at the date at which Dr. Miller's paper was read, any scientific instrument maker worthy of the name was fully acquainted with our arrangement.

6. In order to prove what we thought of our instruments and as to their fitness for the purpose they were intended, when we were written to by the Meteorological Committee, three or four years ago, to produce a thermometer to be submitted to them for approval, we replied that we had already produced the only thermometer which in our opinion would answer the purpose, and that the thermometer was well known to them; we also said we were ready to make that instrument smaller, or larger, but that we could not possibly produce a better one.

Holborn Viaduct, E.C.

H. Y. NEGRETTI & ZAMBRA

October 14

Settle Caves Report

IN your abstract of the "Report of the Committee for exploring the Victoria Cave at Settle, by W. Boyd Dawkins, F.R.S." vol. viii. p. 476, are the following sentences. "The exact age of the Cave-earth is a matter of dispute. Mr. Tiddeman from the *physical evidence alone* regards it as preglacial, or rather as older than the great ice-sheet of that district."

Now it is true that in the spring of 1871, at a meeting of the Settle Caves Committee, I suggested the probability of the beds of lower Cave-earth in the Victoria Cave being of preglacial age from the physical evidence in the cave alone; but at a committee meeting at Settle soon after I laid much stress upon the impossibility of any animals, existing before the time of the Ice-sheet, having their remains preserved in the open country, although it was very likely that they might be found sealed up in sheltered caves. Acting on this idea the committee, notwithstanding some opposition, fortunately determined upon continuing their researches, and the result was the interesting discovery of the older mammals.

May I be permitted to cite the following paragraph from the *Geological Magazine* of Jan. 1873, to show that I do not rely upon the physical evidence in the cave alone as determining the age of the lower cave-earth, although I confess that evidence, to my mind, is almost conclusive. "Perhaps one of the strongest pieces of evidence that the older cave mammals mentioned lived in this district only at a time previous to the great ice-sheet is, that so far as we know the remains of none of them (except of *Cervus elaphus*, which ranges from the Forest-bed to the present day) have been found in any of the Post-glacial deposits in this district. Though so common in the river-gravels in the Midland and Southern counties, they are never found except in caves until we get much farther south or east. Leeds, I believe, is the nearest locality where they occur. This would seem to imply that their remains were wiped off the area by the great ice-sheet which occupied what is now the Irish Sea and its tributary river-systems, and only left in the shelter of caves to which it could have no direct access. Brown bear, horse, red deer, reindeer, megaceros, the more modern Bovidae, and other more recent forms are not uncommon in the Post-glacial beds; but the older cave mammals seem conspicuous only by their absence."

Clapham, Lancaster, Oct. 6

R. H. TIDDEMAN

Carbon Battery Plates

MR. T. W. FLETCHER will obtain what he requires from the India Rubber, Gutta Percha, and Telegraph Works Co., No. 100, Cannon Street, E.C.

I have 12,000 Carbons, or as we call them Graphite Plates, at work at this moment, and for some years past have obtained them solely from the above Company.

Tunbridge, Oct. 14

CHARLES V. WALKER

ASTRONOMICAL ALMANACS*

III.—*Foundation of the Nautical Almanac*

DURING his voyage of 1761 to the island of Saint Helena, for the purpose of observing the transit of Venus, Maskelyne, like La Caille, investigated the methods for determining longitudes at sea, and on his return, in "The British Mariner's Guide" (1763), proposed to adopt the plan of an almanac sketched by the French astronomer. There existed at this time in England a commission instituted by George III. for the discovery of longitudes at sea; † it was a body almost analogous to the present French "Bureau des Longitudes." Maskelyne took many steps to induce this Commission to approve of his proposal; and, at the same time, he commissioned several ship-captains to put it to the test: Their reports confirmed his assertions, and on February 9, 1765, Maskelyne presented to the Commissioner of Longitude a detailed report, in which, besides a complete exposition of the method and plan of a nautical almanac, he gave from the entries in the log-books the result of this new method. The proposition of the wise abbé was adopted, and Maskelyne was entrusted with the calculation and publication of the "Nautical Almanac

* Continued from p. 352.

† The Commissioners appointed by Act of Parliament for the discovery of longitude at Sea, and for examining, trying, and judging of all Proposals, Experiments, and Imperiments (sic) relative to the same, and encouraging attempts to find a Northern Passage between the Atlantic and Pacific Oceans, and to approach the Northern Pole.

It is found *in extenso* in the "New and Correct Tables of the Motions of the Sun and Moon," by Tobias Mayer: London, 1770. Published by order of the Commissioner of Longitude.