

OUR BOOK SHELF

Review of a Specimen of *Stenobothrus maculifer*, in the Journal of the Boston Society of Natural History, by Thomas Dwight, Jun., M.D. (Boston Society of Natural History.)

In a recent volume of the "Monist of the Boston Society of Natural History" contains a descriptive account, by Dr. Thomas Dwight, of the natural character and habits of a young rain-back whale, the skeleton of which is preserved in the Society's Museum. This animal was captured alive in October 1859, off Gloucester, Massachusetts, and its skeleton is the best preserved specimen of a large whale in any of the American museums. The animal was 6 ft. long, the flukes were 2 ft. 4 in., and the height to the dorsal fin, measured along the anterior edge, was 5 ft. 2 in. The colour was of a very light warm ochraceous tint, while the back dark stripes appeared on it, not so distinctly marked were of a warm dark olive color. From the very careful description which Dr. Dwight has written of the skeleton, and from the figures given in illustration, there can be no question that the animal is a young example of the true whale, which Dr. Gray has named *Phocaæ ætheriæformis*, but which is more appropriately named *Stenobothrus maculifer*. In some remarks on the classification of the specimen, he refers to the tendency to variation in the forms of the bones exhibited in the skeletons of cetaceans, uniformly belonging to the same species, and he agrees with those zoologists who have shown the danger of scripping more individual variations in the bones of the bones of particular specimens as indicating data for establishing specific or generic differences. W. T.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed in his correspondence. He makes no notice of anonymous communications.]

Notes on Darwinism

FRANCIS you are quite—though the statement is almost superfluous—that Mr. Wallace, in his review of Dr. Huxley's work, gives me perfect satisfaction which I bounded to express, and which I believe was expressed already, with regard to the probable condition of mine in the early part of his progress. As I have not seen Dr. Huxley's recent work, and as his letter is intelligible to me, I cannot even conjecture how he has so completely mistaken my meaning; but, perhaps, no one who has read Mr. Wallace's article, or this his last I won't formerly published by Dr. Huxley on the same subject as the present one, will be surprised at any amount of misunderstanding on his part.

August 1. CHASLES DARWIN

Acids and Alkalies

ADDED other observations in Dr. Huxley's "Falloacies of Darwinism," so ably criticized by Mr. Wallace in NUMBER of July of 1871, the following:—All the studies about alkalies being made in which most are acids, the truth of inorganic chemistry is 100. I can personally verify this statement, having in many instances watched the process. Speaking of the alkalies of water, organic acids by a complex body, Dr. Huxley observes—"All this was clearly, and without doubt, done by the water of itself" (p. 106). I, in comment with those other observations, should speak rather the evidence in which this was possible, according to me; for the explanation of the structure power of kinds, acids has hitherto remained a mystery. R. MARSHALL.

Atmospheric Effects

This phenomenon mentioned by Prof. Tyndall as recently occurring at the Bell Ship is not infrequent at the coast. At

Falkenstein in the month of June last, we saw several more or less striking instances. Some years since I witnessed, while driving, on a summer's evening, between Guelphwick and Godingen, an equally beautiful though different effect. The evening was stormy, and the sea, with some distance above the western horizon, glaze by that of vapour descended from behind a light cloud. In the eastern horizon was a dense, dark shadow-land, and upon this was seen a reflection of the opposite horizon, while the shadow-land being absorbed by the dark background, while the increasing spaces of sea, above and below, a brilliant condition, resembling that of clouds in the west. The whole of the circumstances were different from those described by Prof. Tyndall, there being, as far as I can recollect, no crossed rays (special, there being, as far as I can recollect, no crossed rays from the sea, and the atmosphere was transparent, but merely purified, and apparently a complete reflection of those which shot from the sea to the horizon. Their combined brightness, as contrasted with the rays of which they were the image, was, no doubt, the effect of light upon the almost black waves on which they were seen. This light, however, was lighted up to a certain extent by a sort of golden haze, in which the rays shone. The whole phenomenon was one of great beauty, and was witnessed by some friends of mine at Guelphwick at about the same time as I saw it from a point near to Godingen. J. HAINES CAMDEN

Guelphwick, Aug. 20

The Carbonic Acid in Sea-water

In the Deussen explorations undertaken of late years in England, the gases obtained from sea-water at various depths, and under different conditions, have been the subject of investigation. As conditions in the German expeditions to the Baltic, I have been engaged in the analysis of the sea-water gases. These have assumed circumstances which I have thought it desirable to communicate to you with reference to your forthcoming paper Deussen explorations.

I must premise that the explosion of the sea-water gases was undertaken in a similar manner to that of the English expeditions, the gas of water being boiled for a long time in vacuum, the expelled gases being collected and afterwards analysed. The result of these analyses pointed unambiguously to a definite unimagined source of acid, for the prevention of which a series of supplementary experiments was necessary. The principal results of these latter can be summarized under the following heads:—

1. The complete explosion of the oxygen and nitrogen from sea-water proceeds so differently; it is accomplished as early as with fresh water. The proportion of oxygen to nitrogen is not usually different in the first and last portions of the expelled gas.

2. The carbonic acid is only partially expelled by boiling the sea-water for hours in vacuum; the proportion of carbonic acid boiled by the expelled gas (judging the concentration of the amount in the water) is, in the first place, dependent on the length of time during which the distillation has been continued; in the portion of the sea-water gas last driven off is almost entirely free from carbonic acid, the later portions are richer in it.

3. The complete explosion of the carbonic acid from the sea-water is attended by its distribution in a current of air free from carbonic acid. Even under this operation, the carbonic acid is contained so slowly, that only after the evaporation of a considerable amount of water (consisting of four volumes in separate) the distillation cannot then be continued till, at the most, a fourth of the original quantity of water remains. The carbonic acid which is present here largely water can be conveniently estimated by volumetric analysis.

The fact that carbonic acid is present in large proportion in sea water, but not in distilled gas in the same amount oxygen or nitrogen, led to a possible condition of clear combination, most for of great importance, and only in respect to the natural and vegetable life, but also the geological relations of the sea.

I am now preparing to spread the problem to seawater to which experiment of sea-water is due in power of direct combination with carbonic acid; and to what extent the amount of carbonic acid is proportional to its volume. Full details will be given in the Report of the German Baltic expedition. In the expedition, to be sent from here to the North Sea, application of the experience hitherto obtained will be made to the estimation of carbonic acid.

Kiel, July 1

OSCAR JACOBSEN