

within the scope of the topic." The sentence astonishes me, and leads me to inquire what was the basis of the opinion; for it does not appear to be in the chapter itself, the arrangement of which is intelligent and intelligible, and certainly not based on mere fortuitous reading. The author of the book, if he has read the review, must, one would think, feel mortified to have such a bald accusation of negligence brought against him: I trust, therefore, that you will publish this letter, to show that at least one worker in this field places a higher value upon his volume than your reviewer does, with his paucity of commendation.

CHARLES SEDGWICK MINOT.

Boston, Mass., Jan. 20.

I am under great obligation to Dr. Minot for the kindness he has done me in calling attention to the injustice of my recent review of Dr. Whitman's book. I am myself astonished at it, and cannot comprehend how I could have made so unfair a statement when I intended no injustice.

I said, "This chapter furnishes much valuable information, but the arrangement leaves the impression that it is the result of fortuitous reading rather than a methodical search for the most valuable things within the scope of the topic."

The sentence as it stands leaves me indorsing what, it occurred to me, might be the inference of one who simply looked at the arrangement of the chapter as made up of the separate consideration of so many isolated animals—e.g., *Clepsine*, *Spirorbis borealis*, *Myzostoma*, *Sagitta*, etc.—instead of classes of animals. What I should have added was, that such an impression would be entirely misleading. I had not the least idea of making that impression represent my opinion, but quite the reverse, for it was in direct opposition to my positive knowledge; no one, perhaps, realizing better than I that the author's work had been of the most painstaking and discriminating kind. In my estimation, moreover, there was no zoölogist in this country who possessed in so great a degree the experience and the other qualifications necessary to the successful handling of this topic.

As regards the general tone of the criticism, I can only say that the esteem in which I hold the author made me distrustful of my ability to praise his work judiciously, and that in avoiding one extreme I have fallen into the error of the opposite, and appear only to criticise where there is much more that I ought to have praised.

EDWARD L. MARK.

Cambridge, Jan. 25.

Cost of scientific books.

A goodly proportion of the book-notices in your periodical contain a statement to the effect that the publisher has been too profuse in his paper; that he ought to use a poorer and thinner quality, and sell the book at half the price. This betrays a lamentable ignorance on the part of your critics, and, besides, conveys a very erroneous impression. Paper is a very inconsiderable item in the cost of manufacturing a book. It is a good-sized volume which, without the covers, will weigh four pounds, and paper as good as that in most of the books criticised costs only ten cents a pound. The utmost that could be saved by lightening and cheapening would be a third in weight, and two cents a pound in price, thus reducing the cost of the paper of a four-pound book from forty to twenty-four cents, certainly not

enough reduction to allow the price of the book to be reduced from four to two dollars.

The cost of the plates is the greatest item in the production of a book, and the ruling price for this work is eighty cents per thousand 'ems' (a page of Packard's 'Zoölogy' contains about a thousand 'ems'). Then all the cost of corrections, other than mere typographical errors, and the cost of making up the pages and inserting the cuts, are all charged as time-work. The cost of corrections in scientific work is enormous, and I have known it to amount to one and a half times the original cost of composition. A fair average for the plates for a book with the same page and type as that of Packard's 'Zoölogy' would be a dollar and a half a page. This must be considered in settling the price of a book.

Finally, the sale of strictly technical books is very limited. An edition of five hundred is a good average; and, were the price reduced to half the ruling price, the sales would not be increased ten per cent. As it is, they little more than repay the cost of publication, and the reduction so earnestly and ignorantly prayed for by your critics would involve the publisher in a considerable pecuniary loss on every strictly scientific book issued; and a few failures of that sort would make them refuse all scientific books.

I do not wish to be understood as defending the prices put on all publications; for some the charge is clearly extortionate: but, so far as I at present recall, not one of those thus criticised in your columns has a price higher than was necessary to reimburse the publisher for his outlay, and pay him a fair amount for his labor in publishing, advertising, and selling the work. I hope in future your critics will omit any reference to this feature in their fault-finding.

J. S. KINGSLEY.

Malden, Mass., Jan. 19.

Oil on troubled waters.

I feel that I must offer a few words of rejoinder to your comments on my letter of Jan. 18, because I cannot admit that there is any grave responsibility involved in my inquiring for the proofs of an alleged scientific theory, or any lack of feeling implied in my protesting against a disposition to hold out a misleading hope to 'the toilers of the sea.'

I have not tried to throw discredit on any well-directed effort to render less dangerous the hazardous vocation of the sailor: I have simply attempted to raise a note of caution against false inductions and specious generalizations. I look upon this as a question of science, not of sentiment; and I have been accustomed to regard science as a matter of hard, clear facts, and keen, cold logic.

It may possibly be that the hydrographic office is affording substantial comfort to the mariner's generally cheerless life by disseminating the fables and traditions of the sea; but, if so, it is a purely literary undertaking, not a scientific one. It may while away an otherwise tedious hour or two on shipboard to read, in effect, that a half-barrel of oil sprinkled over the entire course between New York and Liverpool will insure a safe voyage at any time and in any weather; or that a half-gallon, poured upon oakum, tied tight in a bag, and towed at the stern of a vessel, will reduce the mountainous billows, ease the strained sails and cordage, brace the bending spars and timbers, and bring welcome, peace, and quiet where all before was wild confusion and danger.