

The maps of the three routes deserve a word of praise. They have been plotted with great care, and the notes along the route are so numerous and full of information, that they form an admirable epitome of the whole work. The few illustrations are interesting; that especially of the Spinifex Desert gives one a good idea of this horror of Australian exploration.

OUR BOOK SHELF

Official Guide-book to the Manchester Aquarium. By the Curator, W. Saville Kent, F.L.S., F.Z.S. Third edition. Twentieth thousand. (Michaelmas, 1875.)

THE Manchester Aquarium, situated in the Alexandra Park of that city, has now been opened to the public for more than two years, and has attained considerable success, although we believe it has not quite realised the expectations formed of it by its original promoters. Next to the Brighton Aquarium, that of Manchester is the largest amongst the six principal institutions of this kind existing in the country. The series of tanks, including the deep sea, shallow, and fresh-water groups, is sixty-eight in number, surpassing that of any other aquarium, while their linear frontage falls little short of 700 feet, which is but slightly less than that of the well-known establishment at Brighton. The building itself is of the plainest possible design, and at first sight seems as if it had been originally destined for a church of some kind. It consists of a high central oblong nave and two narrow side aisles. Being lofty and well lighted, however, it affords excellent accommodation for the smaller tanks which line it on both sides, as well as for the two fine large tanks, upwards of forty feet in length, which are situated at the two extremities. The proprietors of the Manchester Institution have been moreover fortunate in securing the services of a competent scientific naturalist as its director, an advantage shared by few if any of the sister establishments. Mr. W. Saville Kent transferred his services from Brighton to Manchester some two years ago. One of the last things he did at Brighton was to prepare the excellent Handbook to the Aquarium there which has been already noticed in this journal. We have now before us a copy of the third edition of the same author's "Guide-book to the Manchester Aquarium," prepared somewhat after the same fashion. After a few words of introduction describing the building and the general management, the sixty-eight tanks and their contents are discussed successively. A large amount of information upon the various fishes and other animals which they contain is thrown together in a very popular and readable form, and woodcuts are introduced illustrating the more attractive and noticeable objects exhibited. The Guide-book is concluded by a chapter on the principles of management of aquaria generally, which cannot fail to be of service to those who are interested in such matters, and which proves that Mr. Kent is fully master of the subject of which he treats.

Elementary Science Manuals. Botany for Schools and Science Classes. By W. J. Browne, M.A. Lond. (Belfast: W. Mullan, 1875.)

AN unfavourable impression of this little book is created at first sight by the obvious imitation, in the style in which it is got up, of Macmillan's series of "Science Primers." Such a plagiarism may generally be taken as a confession on the part of author or publisher that the work has not sufficient merits of its own to stand without adventitious assistance. This, however, is not the case in the present instance; and our depreciatory criticisms are almost exhausted. We had, it is true, marked certain passages in the margin for correction; but they are but few. The most important is the resurrection of the old blunder (twice over) of the existence of "spongioles" at the

extremities of the root-fibres; and this is the more remarkable as the work from which the illustrative woodcut is copied does not make this mistake. The statement in the preface, however, that the book "contains all the subjects required for the First B.Sc. Examination in the University of London," must be taken *cum grano*. There is no index; and the deficiencies have therefore to be made out by careful inspection; but we find no description whatever of the process of fertilisation (although there is a diagram to represent the entrance of the pollen-tube into the embryo-sac), and no adequate one of that of respiration, this term being erroneously applied, as is so often the case, to the process of assimilation. But what can you expect for eightpence? You get, at all events, a great deal for your money; and the morphological and structural portion is on the whole so well done as to render the little book of great use to the beginner. Indeed we do not know any purely elementary work in which this part is more satisfactory. A few technical errors will doubtless be noticed and corrected in future editions. The illustrations, seventy-six in number, though not new, are very good and serviceable.

A. W. B.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

Hoffmeyer's Synoptic Weather Charts

WILL you kindly draw the attention of your readers to the fact that the second year of Capt. Hoffmeyer's synoptic charts of the weather in Northern Europe and Atlantic, commencing with Dec. 1874, is now about to be issued.

The subscription, as before, will be 12s. 6d. per quarter, including postage of the monthly parts.

I shall be glad to receive names of gentlemen who are willing to encourage the undertaking, which is carried on at Capt. Hoffmeyer's own expense. ROBERT H. SCOTT, Director

Meteorological Office,
116, Victoria Street, London, S.W.

Collomia

ON reading Mr. Duthie's communication (vol. xii. p. 494) on the capsules and seeds of *Collomia*, I presumed that some one would be ready to indicate the use of the mucilage and threads of the seed-coat; but I now notice that Mr. Bennett (vol. xii. p. 514) supposes that it "still remains to be discovered." An obvious and sufficient explanation will be found in A. Gray's "Structural and Systematic Botany," as far back as the edition of 1845. In the later editions, all of them now old, it is twice referred to. On p. 40, after mentioning that these gelatinous threads, or the like, occur on many seeds or seed-like fruits of various orders, it is said: "They may subserve a useful purpose in fixing light seeds to the ground where they lodge, by means of the moisture of the first shower they receive." And on p. 321, where forms of this apparatus are described, it is added: "This minute mechanism subserves an obvious purpose in fixing these small seeds to the moist soil upon which they lodge, when dispersed by the wind."

The seed of a *Collomia* or *Gilia*, when wetted, forms a *limbus* of three or four times its diameter; this would involve a multitude of grains of sand, and ballast the seed most effectually in the situations where or at the time when alone it could germinate.

Herbarium of Harvard University,
Botanic Garden, Cambridge, Mass., Nov. 16

A. GRAY

Sir Thomas Millington and the Sexuality of Plants

IN your article last week on the Oxford Botanic Garden, reference is made to Sir Thomas Millington, the Savilian Professor of Botany, as having in 1676 "first divined the fundamental fact of sexual reproduction in flowering plants." In a review in the columns of the *Academy*, of the English edition of