The last section to which we would call attention is that which contains a description of a theory to explain why some plants are adapted for direct fertilisation, and others for crossed fertilisation. According to this theory, entomophilous plants have to make certain sacrifices in order to attract visitors in the shape of the substances needed in the formation of nectar and various perfumes, which are, to a large extent, drawn from the reserve-materials contained in the plant at the time of flowering. If these reserve-materials are present in considerable quantities, the plant will be able to produce much nectar, &c., and will attract many insects, and become adapted to crossed fertilisation. If, on the other hand, it has but little of these stores, it will be able to expend very little in attracting insects, but will have to keep the great part of its scanty stores for the maturation of its fruits and seeds. The consequence will be that the flowers of these latter plants will be but little visited by insects, and will become adapted to self-fertilisation. The author, while he admits that this theory is insufficient to explain certain observations, yet maintains that it is more general in its application than Warming's idea expressed with regard to the flora of Greenland. According to this latter author, crossed fertilisation may be considered the rule in the case of those plants which multiply rapidly by vegetative reproduction, while plants without this second method of reproducing their kind, and which must necessarily bring their seeds to maturity, are most usually adapted to self-fertilisation. It is, however, most probable that neither of these theories should be regarded as in itself giving all the determining causes for a plant becoming adapted to crossed or self-fertilisation, but as only expressing two of, it may be, many factors which are at work in moulding any given plant for one form of fertilisation or another. H. H. D.

## OUR BOOK SHELF.

*Émile Levier. A travers le Caucase. Notes et Impressions d'un Botaniste.* 8vo. pp. 348. (Paris: Libraire Fischbacher.)

DR. LEVIER accompanied his botanical friend, Signor Stephen Sommier, on a tour through the Central Caucasus in 1890, the object being mainly to collect and study the flora of the mountains. The letters which he sent to his friends recording his impressions were published in a magazine without his knowledge, although not written for the public, and the present volume is practically a republication of the letters, edited by the author, and illustrated by numerous sketches and reproductions of photographs. Amongst the latter are several of Signor Vittorio Sella's fine pictures of Caucasian scenery, which, however, are not done justice to in the process blocks. The botanical results of the journey have been published for the most part in the *Bulletin* of the Italian Botanical Society, and only a list of the sixty-nine new species found is given in the book, such references to botany as occur in the text, though full of interest and presenting some acute generalisations, by no means preponderating over the miscellaneous observations of an intelligent tourist, and the pleasantly narrated incidents of travel. A list of thirty-seven species of lepidoptera collected by Dr. Levier is also given.

The two botanists were accompanied by an Italian peasant as hunter, cook and general assistant; and together they experienced few difficulties and no danger on their journeys through unfrequented regions for four months. After some excursions in the neighbourhood of Batum and of Tiflis, they started from Kutais for the journey across the range, going up the valley of the Rion and across the Latpari Pass into Swanetia. After traversing the valleys of Swanetia and Abkhasia, and making an excursion up the valley of the Kukurtli on the western slope of Elburz, they reached the northern plain by the valley of the Kuban. They returned to Tiflis by the coach road from Vladikavkas through the Dariel Pass heavily laden with more than ten thousand botanical specimens, the drying of which was a never-failing source of surprise and amusement to natives and Russian officials alike.

The spirit of holiday and nature-worship breathes through the whole book. Rarely, we believe, is a traveller in untrodden ways so able to appreciate to the full the delights of his surroundings as this light-hearted Swiss physician, whose high spirits and good-humour retain contagious qualities even through the pages of his book.

H. R. M.

*Science Readers.* By Vincent T. Murché. Books i. to iii. (London: Macmillan and Co., 1895.)

IN elementary schools where the rudiments of knowledge about properties and things are taught, these books may be introduced with advantage as reading books. The style is conversational, and every effort appears to have been made to convey the information in simple language, as well as to make it interesting.

## 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 intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

### Origin of the Cultivated Cineraria.

IN the recent discussion at the Royal Society, I used as an illustration of the amount of variation which could be brought about under artificial conditions in a limited time, the case of *Cineraria cruenta*, which I regarded as having given rise to the cultivated Cineraria.

This Mr. Bateson describes as "misleading."

I have read all he has to say, and, with the assistance of competent members of my staff, have carefully examined authentic specimens of all the species he names as having had a share in the parentage of the Cineraria.

Those species, if I understand him rightly, are four in number: *cruenta*, *aurita*, *populifolia* and *lanata*. They were all introduced into English horticulture, through Kew, between 1777 and 1780, and were figured and described by L'Héritier in his "Sertum Anglicum."

A technical discussion of the subject would necessarily take up a good deal of space, and would not be very interesting to readers of NATURE. Mr. Bateson refers to De Candolle's "Prodromus." It will be sufficient, perhaps, to say that had he studied that authority with care, he would have found that while *cruenta* is, like the modern Cineraria, herbaceous, *aurita*, *populifolia* and *lanata* are shrubby species. Further, while the modern Cineraria retains the exact foliage of *cruenta*, that of *aurita* and *populifolia* resembles the foliage of the white poplar; "folia populi albæ." Apart from the additional fact that *populifolia* has yellow flowers, I think I may confidently appeal to even the non-botanical eye as to whether the modern Cineraria exhibits anything of the white poplar character about it. As to *lanata*, its general aspect is sufficiently indicated by its specific name. It is represented by numerous specimens in No. 4 House at Kew, where Mr. Bateson may inspect it. He will probably then regret, for the sake of his reputation as a naturalist, that he committed himself to print on a subject on which he evidently possesses little objective knowledge.

I may add that in the discussion at the Royal Society, Mr. Bateson asserted to my surprise that the cultivated varieties of the *Camellia* could be distinguished by their leaves alone. I