

was repeated when the ejected cuckoo, together with a young titlark, was returned to the nest. Other experiments of a similar nature were made subsequently with nestling buntings. The volume closes with a few general, and by no means original, notes on the life-history of the cuckoo. We are afraid that we cannot congratulate either Mr. Craig or the author on the theory advanced to account for the peculiar breeding-habits of the cuckoo. It is argued that if the bird laid a clutch of eggs in the usual manner the offspring would quarrel among themselves owing to their aggressive habits, the author of this theory forgetting that the disposition in question in the young is doubtless correlated with the present laying habit of the parent.

R. L.

Physics: a Text-book for Secondary Schools. By Prof. Frederick Slate. Pp. xxi + 414. (New York: the Macmillan Company; London: Macmillan and Co., Ltd., 1902.) Price 6s.

THIS book is intended for young people from sixteen to eighteen years of age, and consequently deals with physics of an elementary standard. It is for use in the classroom rather than in the laboratory, and details of practical work have been omitted; whilst considerable stress is laid on ample illustration by means of lecture experiments. There are some diagrams, but no pictures of apparatus or phenomena; these the student is to draw for himself from what he sees. Much of the text is written in a spirit of suggestion or question, with the view of making the student think and reason for himself. In the first section of the book there is very little about kinetics, and ideas concerning force are gained from weight. Newton's laws are not stated formally, and work is not discussed until late in the section on heat.

Altogether we think the standard is very elementary, and it is an open question whether students of the ages seventeen to eighteen would not profit more by a rather deeper study of one or two branches of physics in place of this wide review of the whole subject. This, however, must be left to the individual teacher; some will certainly be delighted with this book, others, we feel sure, will prefer to treat the subject quite differently. S. S.

L'Électricité (déduite de l'Expérience et ramenée au Principe des Travaux virtuels). By M. E. Carvallo. Pp. 91. (Paris: C. Naud.) Price 2 francs.

Les Phénomènes électriques chez les Êtres vivants. By M. Mendelssohn. Pp. 99. (Paris: C. Naud.) Price 2 francs.

BOTH these volumes belong to the valuable "Scientia" series of short monographs upon important scientific topics.

M. Carvallo's book contains a concise mathematical treatment of electrical principles based upon the theories of Helmholtz and Maxwell and the principles of virtual work.

The second book contains a complete discussion of electrical phenomena observed in the muscles, nerves, skin, glands, nerve-centres and sense-organs. Separate chapters are also devoted to electrical fish, to the phenomena observed in certain forms of vegetation and to a historical review of the entire subject.

Elementary Chemical Analysis. Distinguishing Tables and Tests. By Prof. P. Carmody. Pp. v + 35. (Trinidad: D. Adamson and Co., 1902.) Price 2s. 6d.

IN those laboratories where a course of qualitative analysis is the plan adopted to give a knowledge of practical chemistry, these tables may prove useful. The reactions for the metals and acids are arranged in a tabular form, and by means of the tables the student learns, not only the ordinary methods of separation for the metals, but also their other distinctive tests.

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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.]

"The Primrose and Darwinism."

I DESIRE to make a short reply in answer to two or three of your reviewer's criticisms on "The Primrose and Darwinism," and on its author, which appeared in your issue of August 28. "We do not propose," to adopt the words of your reviewer, "to go through the whole review, but to discuss one or two points and to leave your readers to judge of the remainder."

My first and chiefest point is in reference to the charge which the reviewer makes in the following statement (p. 411):—"The only point which is worthy of notice" (relative to the cleistogamic flowers) "is a quotation (Prim. and Dar., p. 191) from Darwin's 'Form of Flowers,' which has several copyist's mistakes, and, moreover, contains interpolated words which do not occur in the original, the whole being within inverted commas. It is this sort of treatment of Darwin's text that makes it almost impossible to read the 'Field Naturalist.'"

I give here an exact copy of Darwin's paragraph from "Form of Flowers," p. 323, and an exact copy both of words and inverted commas of my own comments on Darwin's statement. It will be evident to every reader that Darwin's own observations are always marked off by inverted commas, and that my own comments are not included within the commas. Your reviewer seems to have read my comment with exceeding carelessness.

Darwin's Text.

"The most singular fact about the present species is that long-styled cleistogamic flowers are produced by the long-styled plants, and mid-styled as well as short-styled cleistogamic flowers by the other two forms; so that there are three kinds of cleistogamic and three kinds of perfect flowers produced by this one species! Most of the heterostyled species of *Oxalis* are more or less sterile, many absolutely so, if illegitimately fertilised with their own form pollen. It is therefore probable that the pollen of the cleistogamic flowers has been modified in power, so as to act on their own stigmas, for they yield an abundance of seeds" (p. 323 of last edition, 1892).

My own comment.

But in *Oxalis Sensitiva* "the long-styled cleistogamic flowers are produced by long-styled plants; the mid-styled as well as the short-styled cleistogamic flowers are produced respectively by the other two forms; so that there are three kinds of cleistogamic and three kinds of perfect flowers produced by this one species" (F. Fl., p. 323). Now, as Darwin, from his *net experiments*, concluded that "most of the heterostyled species of *Oxalis* are more or less sterile, many absolutely so, if illegitimately fertilised with their own form pollen" (F. Fl., p. 323), he had in some way to account for this extreme contradiction in results between the naturally abundant fertility of these cleistogamic flowers, and his own results, which we have given above, of *Lythrum Salicaria*, under the unnatural method of experimenting with his net. Under this difficulty, Darwin suggests, "it is probable that the pollen of the cleistogamic flowers has been modified in power, so as to act on their stigmas, for they yield an abundance of seed" (F. Fl., p. 323. The italics are ours). (Prim. and Dar., p. 191.)

Again the reviewer states that the "Field Naturalist's" sentence (p. 11):—"To attribute the capacity for fertilisation in the unprotected flowers to the bees is perfectly gratuitous, as the flowers under the net (when bees were excluded) 'when they touched the net and the wind blew' produced seeds without any cross-fertilisation"—contains, in the words 'when they touched the net and the wind blew,' an "incorrect quotation" (p. 409).

Darwin's words are:—

"*Salvia tenori*. Quite sterile; but two or three flowers on the summits of three of the spikes, which touched the net when the wind blew, produced a few seeds" (Cr. and S.F., p. 362).

My quotation.

Salvia tenori under the net, Darwin tells us, "was quite sterile; but two or three flowers on the summit of the spikes, which touched the net when the wind blew, produced a few seeds" (Cr. and S.F., p. 362. The italics are ours). (Prim. and Dar., p. 11.)

The quotation is word for word from Darwin in the italicised words; yet the reviewer takes no notice of this, but produces a merely shortened form a few lines below, and which though shortened conveys exactly the same sense, and calls it "an incorrect quotation"!

One more charge of this kind of your reviewer scarcely needs being noticed. But I notice it in order to avoid any misinterpretation if I passed it over. The charge is one in reference to *Sarothamnus scoparius*. Darwin states concerning it (Cr. and S.F., p. 360):—"Extremely sterile when the flowers are neither