

knowledge it may be regarded as impossible that any one person can have an equal knowledge of all the groups into which the animal kingdom is now divided; and while at once acknowledging the care which has been shown in the compilation before us, one has only to study the chapters on the Plathelminthes and Vermes to find how the author's special and great knowledge of these groups has made this the most valuable portion of the present part. The Protozoa are divided into three classes—the Monera, Sarcodina, and Flagellata; among these last, such genera as *Pandorina*, *Stephanosphæra*, and *Volvox* are included without a hint being given that many regard them as plant forms. The Cœlenterata are divided into the *Gastrœadæ*, *Porifera*, and *Cnidaria*, and the former class is made to include not only the *Orthonectidæ* and *Dicyemidæ*, but also the *Physemaridæ*. In the quoted literature on this group no reference is made to Prof. Ray Lankester's very impartial paper on a species of *Hali-physema*. These facts are referred to, not as criticisms on this valuable addition to an already large list of introductions to a study of the comparative anatomy of the animal kingdom, but rather as in their way indicating the standpoint from which this one has been written. The printing is excellent, and the style of the work is worthy of the house of Gustav Fischer, of Jena.

A Manual of Practical Solid Geometry. By William Gordon Ross, Major R.E. (London: Cassell and Co., Limited, 1888.)

THIS book follows in the main the lines of geometrical drawing as studied at the Royal Military Academy, Woolwich. It will be found to be a useful help to those who desire to have the power of producing accurate and workmanlike drawings. Orthographic projection of points, lines, and planes, system of vertical indices, and projection of curves and solids, are first dealt with, and are followed by simple cases of regular solids and solids of revolution, illustrated by drawings in elevation and plan. A series of solid geometry problems are next worked out on the index system, figures being drawn in the more difficult cases. Problems in connection with irregular surfaces, and relating to the defilade of works of fortification, are worked out, and also illustrated by drawings. The appendix contains a collection of examples of different kinds, and various hints and suggestions useful for draughtsmen.

Key to Lock's Elementary Trigonometry. By Henry Carr, B.A. (London: Macmillan and Co., 1889.)

THE examples given in this book are fully and clearly worked out, and in the elementary examples the author has added considerable detail to enable those reading the subject for the first time, and those who are studying it without the help of a teacher, to obtain a clear insight into the working of them. Great care seems to have been taken to insure accuracy, and from beginning to end a teacher would find it hard to add much in the way of supplementary explanation.

LETTERS TO THE EDITOR.

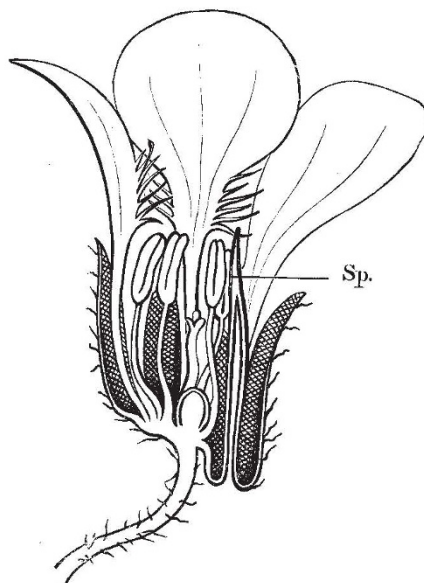
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Abnormality in Tropæolum.

IN the early summer of last year my attention was directed to a case of abnormality in flowers of *Tropæolum*, which I think is sufficiently interesting and rare to be worthy of record.

I observed three distinct plants of several years' growth (in a conservatory) to be producing flowers in considerable numbers

which were peculiar in having the spur either completely or partially *invaginated*, as shown in the figure.



In examples where the invagination is complete, the intruded spur occupies the exact position of the stamens, and it is a fact of some significance that it is not uncommonly double.

Flowers of the normal form were also developed, and I noticed that as the summer advanced the proportion of these increased until eventually the plants produced only flowers of the ordinary kind. They are again flowering this season, and are repeating their behaviour of last year in every detail.

I am not aware of any similar case having been recorded either in Maxwell Masters's "Vegetable Teratology" or elsewhere. The facts brought to light by the examination of numerous examples seem to me to suggest a new interpretation of the nature of the "spur" in this flower, which I purpose discussing at a later period. In the meantime I shall be very glad to hear of any similar instances either in this or any other "spurred" flowers.

ALFRED DENNY.

Firth College, Sheffield, May 27.

The Structure and Distribution of Coral Reefs.

IN reply to Mr. Guppy's letter permit me to state that (owing to Captain Wharton's kindness) I had before me, when writing, the Report on the Survey of the Tizard and Macclesfield Banks. That reef-building corals occasionally grow at depths considerably greater than 25 fathoms was already known (see "Coral Reefs," second edition, p. 115, note), and Commander Moore's investigations did not appear to me to do more than confirm this. Mr. Guppy, I think, must have read his copy of the Report rather hastily, or he would hardly have failed to quote the following "suggestive remark" which occurs on p. 16:—"This fact [a living astræan at 45 fathoms] proves that the fine sand of the lagoon is not necessarily fatal to the solid reef-building astræan, and helps to explain how individual coral heads appear in the deep waters of these atolls, but it cannot be doubted that their growth is very limited. . . Coral growth is most luxuriant between 2 and 12 fathoms."

T. G. BONNEY.

Atmospheric Electricity.

NOT once only, but on several occasions, I have been alarmed by the fizzing of my ice-axe in the Alps.

Twice in one neighbourhood—the Riffelberg—I have been in company with several tourists who have (as I myself) been considerably frightened.

It must be remembered that the Riffelberg and the Gornier Grat contain so much iron as to affect the compass observations of surveyors. How often may this be a determining cause?

Alpine Club, May 28.

MARSHALL HALL.