

cism of a manual like this would proceed from one who had actually tested its use. Improvements will gradually suggest themselves; a few friendly suggestions might be even ventured upon offhand. On p. 63, for example, the following definition is open to objection:—"Trichome, a generic term for all organs developed by emergence from single cells of the epidermis." The chapter on Floral Diagrams is good. But it never seems to have been suggested that a genuine interest might be given to lessons in botany by making the pupils arrange the actual parts of the flower so as to form the diagram. All that is wanted is a flat square of cork covered with paper, on which four concentric circles are traced. It would be best to have three such squares for each pupil, with three, four, or five radiating lines drawn intersecting the circles, according as flowers with a ternary, quaternary, or quinary symmetry are to be examined. As each successive whorl of floral organs is removed, its parts should be pinned out in their proper relative positions by the pupil. The cyclical symmetry of the flower is clearly brought out in this way, even where it is apparently disguised. Some details in working the method would need a little elaboration, as, for example, the treatment of gamopetalous flowers; but this may be left to the ingenuity of teachers like Mr. Bettany.

*Rabenhorst's Kryptogamen-Flora von Deutschland, Oesterreich und der Schweiz.* Erster Band: 1 und 2 Lief. Pilze, von Dr. G. Winter. (Leipzig, 1881.)

FEW men have done their fellow-workers in science greater service, even if of a somewhat unobtrusive sort, than Dr. Ludwig Rabenhorst, whose recent death we announced with regret (*NATURE*, vol. xxiv. p. 108). His "*Flora Algarum aquæ dulcis et submarinæ*" is an indispensable guide to an immense labyrinth of species and genera which lie scattered up and down botanical literature. These are digested into a methodical enumeration which makes little attempt to be critical, but is content to bring the materials together just as every one who intends to study what has been done in any special group without such an aid must do for himself. Had Rabenhorst attempted more he would never have done the useful work that he did. One very convenient feature of his books is the brief synopsis of the genera of each group, accompanied by outline woodcuts of some leading types. Amongst organisms whose real affinities are often so obscure as the lower cryptogams, the utility of this plan cannot be sufficiently approved. The woodcuts often convey information at a glance which hours of study and comparison would not extract from the descriptions. The present work, of which two parts have so far appeared, is substantially a new edition of the author's "*Deutschland's Kryptogamen-Flora*," of which the first appeared as far back as 1844. The death of the original author may, it is to be hoped, have no effect on impeding its completion, as different groups are assigned to different hands, Dr. Winter commencing the fungi in the two parts before us. The scope of the whole work will be very much enlarged, but the same convenient features will be perpetuated. A speedy completion will be devoutly desired by all students of European Thallophytes.

#### 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.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

#### The Comet

FURTHER measures have been obtained at Greenwich of the position of the least refrangible edge for three of the four comet-bands with the following results:—

	Yellow band.	Green band.	Blue band.
Comet ...	5630'4±1'6	5162'7±0'4	4733'9±1'1
Bunsen Flame	5933'0	5164'0	4736'0
No. of Obs.	7	26	6

The identity of the comet-bands with those in the first spectrum of carbon appears to be clearly established, but in each case the comet-band is slightly shifted towards the blue. The displacement of the green band, if real, would indicate an approach of  $47 \pm 14$  miles per second, whereas the comet was actually receding from the earth at the rate of about twenty miles per second. Such a displacement might, of course, be explained by an emission of cometary matter on the side towards the earth, but it would seem more probable that it is due to the circumstance that the edge of the comet-band is not quite sharp, and that a small portion on the red side is cut off. This would apply with still more force to the yellow and blue bands, which indicate somewhat larger displacements towards the blue. The displacements however, though all in the same direction, are not largely in excess of the probable errors. The comet-bands were compared with those given by vacuum-tubes containing cyanogen and marsh-gas, as well as with those of the Bunsen-burner flame, and three forms of spectroscopy were used, viz. (1) the half-prism spectroscopy with a dispersion of  $18\frac{1}{2}^\circ$  from A to H, and a magnifying power of 14; (2) the half-prism spectroscopy reversed (as for prominence observations), giving a dispersion of  $5^\circ$  from A to H and great purity of spectrum, with a magnifying power of 28; and (3) the star spectroscopy with a single prism of flint. No measures were obtained of the band in the violet, which was only seen on two occasions. It appeared to be sensibly coincident with the band in the first spectrum of carbon at 4311.

Mr. Maunder also noted several of the Fraunhofer lines in the continuous spectrum, in particular F (the position of which was determined by comparison with H $\beta$ ) and two other lines which were respectively near E and a strong double line at 5327.

W. H. M. CHRISTIE

Royal Observatory, Greenwich, July 12

I SUCCEEDED in photographing the comet in Auriga on Friday night, June 24. Since then I have taken several photographs of it. One made last night with an exposure of 2 hours 42 minutes shows the tail about  $10^\circ$  long. There are many stars on the plate, some shining through the tail.

HENRY DRAPER

#### The Physiology of Mind Reading

I HAVE received from Dr. G. M. Beard of New York (well known for his studies of Trance and related states) a letter in reference to the experiments with Mr. Bishop, of which Mr. Romanes has given an account in *NATURE*. Dr. Beard, writing before our experiments were carried out, mentions his own investigation, years ago, of much more remarkable performances than Mr. Bishop's, and incloses an article "On the Physiology of Mind-Reading," which he contributed to the *Popular Science Monthly* (New York) as far back as February, 1877. If this article had been shorter I would fain have asked you to reprint it, giving as it does a far more varied record of facts than came under our observation, and a series of carefully-drawn conclusions within which our conclusion falls. I will only say that if I had known of this article I should hardly have thought it worth while to spend time in the trial of Mr. Bishop's powers, or even had the curiosity to attend that first meeting amid the cloud of scientific witnesses.

G. CROOM ROBERTSON

July 9

#### Mind and Muscle-Reading

KINDLY allow me to correct a printer's error in my letter of last week. In describing the case of so-called thought-reading examined by myself in the clergyman's family in Derbyshire, I wrote: "The failures in my examination did not amount to one in ten, and were a smaller fraction when the children were not embarrassed by strangers," &c. The word "my" was printed "any," thus destroying the meaning of the sentence. I will just add that the clergyman in question is an old graduate of Trinity College, Dublin; his integrity is above suspicion, and even did not his position as a Christian minister negative the idea of trickery, the last experiment which I described disposes of this very natural explanation.

W. F. BARRETT