

still doubtful, De Bary classifies the *Chytrideæ*, and *Protomyces*, and *Ustilagineæ*, all considered as allied phylogenetically with the *Phycomycetes*; and a series of doubtful *Ascomycetes* (e.g. Eidam's *Helicosporangium*; also *Exoascus*, *Saccharomycetes*, &c.), obviously to be placed next the *Ascomycetes* proper. Finally, the huge group of the *Basidiomycetes*, which De Bary regards as connected with the *Uredineæ*, though it is not an easy matter to satisfy one's self of the alliance.

The rigour with which the literature has been sifted is shown in the references given at the end of each section. There is no doubt that Prof. De Bary may be congratulated on once more having written a work which will be a monument to his skill and industry, and a boon to all biologists.

OUR BOOK SHELF

A Monographic Revision and Synopsis of the Trichoptera of the European Fauna. First Additional Supplement (with Seven Plates). By Robert McLachlan, F.R.S., F.L.S., &c. (London: Van Voorst, 1884.)

FOUR years ago, in the preface to his very important and elaborate "Monograph of European Trichoptera," Mr. McLachlan promised to continue from time to time the supplemental notices of which the necessity of the case had already caused two to be appended to the original work. The first of these has just (June) been published; it adds nearly fifty species to those described in the Monograph and its Supplements. Some new forms are noticed to which it has seemed right to assign the rank of varieties, and there is a great deal of additional information as to localities. While all the species in the original work have been passed under review, in one or two instances those belonging to some genera have been thoroughly revised. Very few new genera are indicated, and the author thinks the time has not yet arrived for a complete subdivision of some of the larger generic groups as now constituted. All but six of the additional species are from within the limits of Europe proper, proving how hazardous it would be to conjecture as yet as to the number forming part of the European fauna. While ready and liberal help has been afforded towards the work of this Supplement by many of the author's friends and correspondents, yet it is by one above all the others that the material for it has been accumulated; for to the labours of the Rev. A. E. Eaton in Italy, Portugal, Madeira, the Canary Islands, and elsewhere, the author stands indebted for more than three-fifths of the new species, and though Mr. Eaton is well known as an acute, indefatigable, and successful entomologist, does the remark press less home that "if a foreigner making short holiday tours through certain districts previously unexplored (so far as the Trichoptera are concerned) can produce such results, it is needless to call attention to what *might be done* by residents in the districts"?

Among the genera which have been revised we note *Sericostoma*, which it is now proposed to divide into two groups, *i.e.* (A) with the Maxillary palpi in the male very prominent and scarcely hairy; and (B) with the Maxillary palpi in the male slightly prominent and very hairy.

Additional and valuable information is given concerning the singular forms belonging to the genus *Helicopsyche*. The author now acknowledges three European species, while he seems to think that the number will yet be greatly increased. The three species at present stand as *H. speruta*, *H. lusitanica*, and *H. revelieri*. The last species equals *H. shuttleworthii*, and was bred in large numbers by M. Revelière, who found the larvæ in very great abundance in a stream near Porto Vecchio, Corsica. The imago is to be found all the year round, but it seems to

require a certain degree of warmth for its emergence, which is always effected in the daytime. The larvæ and pupæ can exist in a very scanty supply of moisture; indeed some specimens which were left unattended for many days were found quite active though all the water had evaporated from them, and the sand in which they were was only moist. The building material of the helix-like cases is fine sand-grains; each case forms fully two and a half whorls; the cement-like substance used to bind the sand-grains together is often applied so thickly that the individual grains are inconspicuous.

In the genus *Setodes*, Mr. McLachlan has discovered a character in the posterior wings which (with others) enables the species of the genus as it now stands to arrange themselves into two sharply defined groups (which will be hereafter considered genera). This character is the presence or absence in the posterior wings of a fold above the apical fork known as No. 5. *S. punctata* and its allies belong to the group in which the fold is absent, while *S. lineiformis*, Curt., &c., belong to the group with the fold.

This "First Additional Supplement" is illustrated by seven plates engraved from the author's drawings in a very creditable manner by Mr. G. Jarman. As the necessities of the case arise, we are promised a "Second Additional Supplement," which will be as gladly welcomed by those taking an interest in this group of insects as the present one is sure to be.

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 insure the appearance even of communications containing interesting and novel facts.]

Lœwy's New Telescope System

IN the June number of the *Bulletin Astronomique* there is an important article by M. Lœwy entitled "Description d'un nouveau Système de Téléscope," on which, with your permission, I would offer some remarks.

M. Lœwy gives the two possible dispositions or arrangements that allow the principle of the *equatorial coude* to be applied to the reflecting telescope. He assumes certain optical and mechanical conditions, and on these treats the question exhaustively, giving tables showing the different sizes of the mirrors required and other data obtained by the use of formulæ based on those conditions.

The practical difficulties are also dealt with and suggestions made for forms of mountings. There is also a suggestion of the MM. Henry to close the mirrors from the open air by means of a parallel plate of glass to protect them from the effects of dust, moisture, &c.

This subject has a particular interest for me (as I have no doubt it has also for many others), and I have considered for some time the mechanical difficulties from a different point of view from that of M. Lœwy, coming thereby to conclusions differing considerably from those given by him. There is, of course, much to be said on such a subject as this, involving as it does so many points that can be dealt with in so many different ways, and some of these I should much like to say more on by and by; but at this holiday time of year I will only offer the following observations:—

1. It is of the first importance to reduce as much as possible the distance (δ) between the middle mirror of either optical combination or disposition and the focal plane.
2. By placing the upper bearing of the polar axis below instead of above the cross tube of either disposition, all the mechanical conditions that M. Lœwy has used can be advantageously varied.
3. The use of the floating polar axis described by me in the May number of the *Monthly Notices* of the Royal Astronomical Society enables this to be done.