

structural features of the imago. This is better than Distant's artificial divisions but there is plainly an open field here for investigation, and one which there is apparently no need for great delay in occupying, since (excepting the egg) the early stages of *Lycaeninae* appear to offer less service to the systematist than in any other group of butterflies.

What will surprise one in this volume, is the very considerable addition to our knowledge of the early stages of the *Lycaeninae*, for excepting the *Hesperidae* this group is in general the least known of butterflies. Yet something is recorded of no less than thirty-four genera, much of it new, and in many a good deal of interesting history is related. This is a great improvement on the preceding volumes. One particular case, that of the pomegranate butterflies, whose history was briefly and partially given by Westwood, seems valuable enough to reprint for the benefit of American readers; and another, *Curetis thetis*, may well be mentioned here:—"The twelfth segment [of the larva] bears two most extraordinary structures, which consist of two diverging, cylindrical, rigid pillars, arising from the subdorsal region and of a pale green color. When the insect is touched or alarmed, from each pillar is everted a deep maroon tentacle as long as the rigid pillar, bearing at its end long parti-coloured hairs, the basal third of each hair being black, the upper two-thirds white. The maroon tentacle with its long hairs spread out like a circular fan or rosette is whirled round with great rapidity in a plane parallel to the body, its use being almost certainly to frighten away its enemies, as this larva, as far as I am aware, is not attended by protecting ants and lacks the honey-gland on the eleventh segment present in so many *lycaenid* larvæ which are affected by ants."

Ants have been found attendant upon half a dozen genera, and in many cases they have been identified by Dr. A. Forel, of Switzerland. At least a dozen species are concerned, and they are about equally divided between the *Formicidae* and *Myrmicidae*.

Spalgis, it appears, is another instance of a carnivorous *lycaenid* comparable to our *Feniseca*, the larva associating with and feeding upon the "mealy bug" of the planters, a species of *Dactylopius*. De Nicéville in no way favours Edwards's belief that *Feniseca* belongs to the *Lemoniinae*, and adds nothing, as we had hoped he might be able to do, to Holland's suggestions that *Liphyra*, too, might be carnivorous, though he points out that the two genera differ in their perfect state in the number of subcostal nervules, and are therefore not so closely allied as Dr. Holland thought.

The seasonal dimorphism of many Indian *Lycaenidae* is well brought out, the dry and wet season taking the place of our spring and summer; indeed, it occurs in no less than eighteen genera, and this will be a revelation to many, and seems to bid fair to renovate the study of tropical butterflies. But while in India proper "the seasonal forms seem to be chiefly restricted to two, a wet and a dry," in the Himalayan district of Sikkim "the dry season form which occurs at the end of the year differs somewhat from the dry season form which occurs in the spring, so that with regard to some species there may be said to be three forms—a spring, a wet season, and a winter form." Sexual dimorphism on the contrary is very rare among tropical *Lycaenidae*, de Nicéville stating that he does not know positively of any case, though he suspects it in a species of *Zephyrus*. On the authority of Doherty (a native of Cincinnati by the way, working most industriously in the east), he credits half a dozen or more species as mimicking others of the same or neighboring groups of *Lycaenidae*. Much attention is also paid to the secondary sexual characteristics so far as their gross appearances are concerned, and they are noted in no less than nineteen genera.

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