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CORRESPONDENCE.

HABITS OF THIRIPS.

In a communication, in *Psyche*, vol. 3, p. 369, Mr. Herbert Osborn gives some interesting observations on the habits of a certain undescribed species of *Phloeothrips* which he found in abundance in all the fruit blossoms which he examined, stating that they were doing much damage to the tender styles by biting and puncturing them and preventing thereby the fertilization of the ovaries.

Taking it for granted that *Thrips* really does all the damage ascribed to it, it remains as a rather singular fact that, notwithstanding the great abundance of *Thrips* in all kinds of flowers, the yield of good and numerous seeds is not materially diminished. I am therefore of opinion that, although the *Thrips* may somewhat injure the styles and other parts of the plants, they mainly gather the nectar which is more or less excreted, and while actively running about assist in fertilizing, as more or less of the pollen will adhere to their feet and body and doubtless will be carried to the stigma.

That many species of *Thrips* are vegetable feeders, in some of their stages, has long been well known, and I have seen numerous species on all kinds and all parts of plants, and some of these *Thrips* I have seen in the act of feeding, but I have also observed that not all species have entirely the same habit, and that some, in one stage or another, are carnivorous. Especially have I noticed this to be the case with a species which is frequently found upon the leaves of *Platanus* and upon other plants which

are badly infested with *Tetranychus telarius* upon the adult and young and probably also upon the eggs of which this *Thrips* feeds.

It may also turn out that two or three species which swarm in great numbers in the blossoms of clover (which are usually full of the eggs and larvae of *Cecidomyia leguminicola*) are partially carnivorous, and further observations may prove that they mainly search and feed upon the *Cecidomyia*.

I may also mention here that this year, as late as 14 November, after several quite cold days, I found for the first time *Heliothrips haemorrhoidalis*, Bouché, on apple-leaves in the orchard of the U. S. Department of Agriculture, as lively and active as in hot-houses, where this species was only observed previously.

I may also mention the presence of *Heliothrips dracaenae*, Heg., in the conservatory of the Department of Agriculture, an insect which is reported as doing immense damage to dracaenas in hot-houses in different parts of Europe.

Theodor Pergande.

Washington, D. C., 15 Nov. 1882.

BOOK NOTICE.

It cannot fail to give pleasure to naturalists to learn that Dr. W. H. Müller, son of Dr. Hermann Müller, of Lippstadt, Germany, has begun a course of observation and study in a line of thought similar to that which has made his father's name and works so well known to students of evolution.

Dr. W. H. Müller has just published his dissertation for obtaining the philosophical doctorate at the university of Jena. In the dissertation [PSYCHE, Rec., 2891], which is entitled "Proterandrie der Bienen," the author shows, by careful observations most of which were made without reference to the subject of which the dissertation treats, that proterandry, or the appearance of the males earlier in the season than the females, exists in all the chief groups of bees with the exception of the social bees. Dr. Müller proposes to leave the consideration of the more complex question of proterandry among social bees for special treatment later, but he writes now that he is convinced that among all bees the males regularly outstrip the females somewhat in development.

G: D.



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