

long. Ovisac and form of insect as in *innumabilis*. Body grey, with some lighter patches and black spots, giving a mottled appearance which is characteristic. Dried specimens become reddish-brown or greyish. Eggs white.

Antennae usually 7-segmented, the several segments measuring as follows in $\mu\mu$:— (1.) 37. (2.) 39. (3.) 54. (4.) 68. (5.) 25. (6.) 17. (7.) 42. Formula 4372156. By the division of 4, the antennae become 8-segmented, the measurements in $\mu\mu$ being:— (1.) 39. (2.) 31. (3.) 56. (4.) 42. (5.) 25. (6.) 20. (7.) 23. (8.) 45. Formula 38412576. Of course these measurements vary more or less in different individuals. Legs ordinary; front leg with coxa 70, femur 152, tibia, 113 tarsus, 65, claw 20 $\mu\mu$. All the digitules filiform, tarsal digitules very long. Marginal spines blunt, 34 to 37 $\mu\mu$ long.

Hab.—On *Tilia americana*, Methuen, Lawrence and Andover, Mass., June 1898. (*G. B. King*). This insect is described as a subspecies of *innumabilis*, because it is very closely allied to it, and evidently a comparatively recent segregate. It will probably be treated as a distinct species when the genus is revised. The mottled appearance is found by Mr. King to be constant and distinctive. The microscopical characters are nearly those of *innumabilis*, but the antennal segments seem to be constantly shorter, and the marginal spines longer, than in that insect.

JANET ON MYRMECOPHILOUS ANIMALS.

The literature upon myrmecophily is so extensive and scattered that a work which gives a general survey of the subject is certainly welcome. Such a desirable work is Janet's "Rapports des animaux myrmécophiles avec les fourmis" (Limoges 1897, 8°), a pamphlet of nearly one hundred

pages, dealing chiefly with insects, in a systematic and comprehensive way, although discussing also certain Nematodes, Isopods and Arachnids.

In view of the fact that almost thirteen hundred species of myrmecophilous animals are known, the work is necessarily concise, but the author has condensed a large amount of information into a comparatively small space and has wisely supplemented his statements at every step by references to original sources of information, which number two hundred titles. The results of other workers are well summarized and original observations abound throughout.

Those animals only are regarded as truly myrmecophilous which, for whatever reason, actually seek the society of ants and voluntarily come to live in their nests. From this definition, therefore, are excluded Aphids and Lycaenid larvae, certain enemies, enslaved ants and many insects which mimic ants. Janet considers these, indeed, but devotes special attention to true myrmecophily, comprising the following categories, each of which is examined in detail: *parasitism*; *phoresy*, denoting the utilization of ants for transportation; *myrmecoclepty*, signifying the theft of food from ants; *synechtry*, the consumption of ants as food; *synoeky*, to express the habits of such animals as enter ants' nests for debris, warmth, shelter, etc., have no direct relations with the ants themselves and are tolerated by the latter; and *myrmecoxeny*, a special kind of symbiosis.

Reserving the term *symbiosis* to imply mutual benefit, Janet suggests the word *hamabiosis* to signify the habitual dwelling together of two species, for any purpose, with or without evident advantage, either mutual or one-sided.

In this country, myrmecophily offers a large, fresh and fascinating subject for study, requiring not only minute observation and great patience but also considerable mechanical ingenuity.



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