

A NEW MYMARID FROM HASTINGS

BY

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In August 1913, I was fortunate in capturing a male and female of a Mymarid at Hollington Church Wood, which I could not identify until my return home. I was sure however that it was something quite new to anything in my collection. After a most careful examination of male and female while "in the flesh," (before mounting in Canada balsam), I saw that it was not only a new species, but one for which a new genus must be found.

Fortunately, I have a very valuable "chum" in Mr. Chas. O. Waterhouse, I.S.O., to whom I wrote to come and see the new arrival before its natural colours and markings disappeared in balsam. After due examination and measurements we decided to name it *Neurotes iridescens*, the generic name referring to the long costal nerve and the specific to the very beautiful iridescence of the wings.

The full description is as follows :-

NEUROTES n. gen. (Enock).

The tarsi five jointed. The abdomen sub-sessile. The antennæ of the male 13 jointed, those of the female 8 jointed. The wings broad and elliptical, .75 mm. long × .208 mm. broad. The costal nerve very long. The ovipositor level with the tip of the abdomen.

Neurotes iridescens n. sp. Pl. 9, p. 101. The general colour dark brown; the head broader than the thorax. The antennæ of the male 13 jointed, dark brown, 1 mm. in length; the scape twice as long as the funicular joint; the third to the twelfth joint of equal length; the thirteenth a little shorter.

The antennæ of the female 8 jointed, .57 mm. long. The scape and pedicel testaceous, the latter a little longer than the first funicular joint, the others gradually diminishing in length to the club, which is the longest joint, and rounded at the tip.

The ovipositor level with the tip of the abdomen. The wings narrower and shorter than those of the male. The costal nerve very long, reaching to beyond the middle of the wing, the tip slightly enlarged. The surface hairs most numerous at the base and margins of the wing, leaving an almost clear oval area in the centre. The cilia long on the lower wings. The legs lighter brown than the body, and darkest in the centre. Length 1 mm.

Habitat, Hollington Wood, Hastings, August 1913, male and female captured.

The genus *Neurotes* makes the ninth new genus which I have had the pleasure of adding to the British Mymaridæ, beside considerably over one hundred new species, since first taking up the study of this neglected family. It was first established in 1833 by Andrew Haliday who arranged the comparatively few species into seven genera. Francis Walker, to whom Haliday had passed on his MS., further increased the number to twelve genera and thirty-five species. With these, short Latin descriptions were given, but not a single figure. Haliday's type-collection (now at the Dublin Museum of Natural History) seem to have lost many of the most important specimens, and the remainder are so incrustated with crystallization and dirt that it is quite impossible to identify the species.

My attention was first drawn to this family in 1872 by seeing "a Fairy Fly caught in a Spider's web" shown under the microscope by the late Mr. Fred. Fitch, at one of the meetings of the Quekett Microscopical Club. From that moment I determined to learn more about this wonderful insect. The next morning (in August) I examined the spiders' webs in my garden at Holloway and was rewarded by finding several specimens caught in the webs. Some of these I removed, and as I was at that time fully engaged in preparing insects for the microscope, I soon discovered a plan for mounting them in Canada balsam. Since then I have gone on collecting and mounting all I could find, until the number of new species became so great that I determined to commence a Monograph of the British Mymaridæ, and illustrate it with figures of every known species. But after making a number of enlarged drawings under the microscope, I found the strain upon my already impaired sight so great, that I had to relinquish my intention. I then tried photomicrography which, after numerous failures, proved to be the only method of showing the exact shape of the wings in closely allied species, as well as the distribution of the minute surface hairs and marginal cilia—all these microscopic details being of the utmost importance. The disadvantage of mounting in Canada balsam is the loss of colour and difficulty of tracing the sculpture of the thorax, etc.; but this is overcome by mounting additional dried specimens on card.

During the past six years, I have received most valuable help from Mr. Waterhouse in the naming and describing of species. So far as I have ascertained, all the Mymaridæ are ovivorous in their habits and most fastidious in their choice of a host egg—their power of diagnosing the right egg being simply marvellous. Many times I have experimented to test this by fixing a number of different insects' eggs on a leaf and coaxing the Mymarid on

to the edge. It immediately commenced to run along, tapping with its clubbed antennæ. On reaching the first egg, it gave it one or two taps and went on to the next, repeating the process of tapping and rapidly passing on to try another and going from egg to egg, to perhaps a dozen or twenty. Not one was the right host egg. At the tip of the leaf I had fixed an egg of *Psocus fasciatus* which I knew was the right one ; and directing the tiny *Alaptus* along the mid-rib, it reached the egg, gave it one or two taps, and immediately mounted upon it and quickly releasing its ovipositor began to press the point upon the egg. The shell was presently punctured and the ovipositor driven in three quarters of its length. While in this position the antennæ were motionless, the clubbed tips pressed firmly against the egg and remaining so until the *Alaptus* withdrew its ovipositor and resumed its search for other eggs. Eleven minutes and a quarter were occupied in oviposition.

As might be expected, searching for these microscopic insects means a vast amount of patient examination of the windows of the house and greenhouse with a pocket magnifier. But seeing them is one thing and phialing is another. For they not only evade pursuit by flying, but hop away in any direction but the mouth of the phial ; and even when in the phial, unless it is reversed, the Fairy Fly will hop out again. When corked up they must be killed with methylated chloroform. Holding the phial mouth down, carefully withdraw the cork when the fly is running round at the other end, and stand the phial on a piece of clean white blotting paper ; dip the brush into the chloroform, raise the phial just high enough to allow a drop of chloroform to be placed on the blotting paper and stand the phial down quickly. The Fairy Fly is soon overcome, and generally falls on to the blotting paper and expires. Having cut a stock of pieces of card half an inch long by one-eighth wide, put a stout pin through at the broad end and fix on cork. Then with a small brush moisten the surface with gum tragacanth and pick up the fly with a fine camel's hair or sable brush, and with a still finer brush (of only a few hairs) arrange the various organs in a natural position. How to manipulate an insect one eightieth of an inch long is only to be learned by practice and endless failures. Write a small label giving date and where captured, and run the pin through, so that these particulars can be seen when the mount is put away in the cabinet or store box.

By sweeping herbage and grass with a cambric net 10 inches diameter by 18 inches deep, tapering almost to a point, great numbers of all sorts and sizes of insects can be secured. Sit down on a camp stool, take out a phial, remove the cork, hold the phial

mouth down in the left hand and examine the contents at the bottom of the net, and when you *do* see a Fairy Fly among the grass and other seeds, try and place the open phial over it, and you will find this operation also requires a vast amount of patience.

The following is a list of the known genera, which, if more entomologists would take up the study of the fascinating Mymaridæ, might be considerably augmented. The new genera are marked with an asterisk.

Tarsi five-jointed :—**Neurotes*, *Limacis*, **Oophilus*, *Gonotocerus*, *Arescon*, *Camptoptera*, *Litus*, **Dicopus*, *Alaptus*.

Tarsi four-jointed :—*Anaphes*, **Anaphoides*, *Anagrus*, **Parallelaptera*, **Cleruchus*, **Stethynium*, **Enaesus*, **Erithmelus*, **Stephanodes*, *Polynema*, *Caraphractus*, *Eustochus*, *Mymar*.