

AN EXTREME CASE OF PARASITISM. By ROBERT HESSLER. Published in American Naturalist.

A PARTIAL LIST OF NEW SPECIES OF PARASITIC HYMENOPTERA REARED IN INDIANA. By F. M. WEBSTER.

In the following list it is my intention to include only such species as were undescribed at the time they were reared by myself during an eight years residence in the State. These have nearly all been since described and, with but few exceptions, from types furnished by my rearings. The object in presenting this matter is to place it in a form convenient for reference by the future investigator, reference in all cases being given to the original description. I have not as yet been able to complete the list of those now described, and still others remain to be described, but I hope to include all or nearly all of them in a future paper:

1. *Bracon agrili* Ashm. From larvæ of *Agrivus fulgens* Lec., burrowing in trunks of maple. La Fayette, April and May. (Proc. U. S. Nat. Mus., 1888, p. 612.)

2. *Bracon diastata* Ashm. From Dipterous leaf miner, *Diastata* n. sp. in corn. La Fayette, June 28, 1886. (Proc. U. S. Nat. Mus., 1888, p. 617.)

3. *Bracon phycidis* Riley, MS. From *Phycis indiginella* Zell. Oxford, July 9, 1884.

4. *Bracon* n. sp. From *Trypeta gibba* Loew, in galls on *Ambrosia artemisivefolia*. La Fayette, May 3, 1889.

5. *Bracon* n. sp. From larvæ of *Rhysematus lineaticollis* Say, in seed pods of *Asclepius corymbosa*. La Fayette, March 29, 1889.

Mr. Frederick Blanchard, of Lowell, Mass., in a letter to me, says he has reared *R. lineaticollis* from *Asclepius* in Massachusetts, and that it is there attacked by a Hymenopterous parasite.

6. *Dimeris rufipes* Ashm. Host unknown. La Fayette.

7. *Rhyssalus loxotenia* Ashm. From *Loxotenia clemensiana* Fern. La Fayette. (Proc. U. S. Nat. Mus., 1888, p. 629.)

8. *Aphidius obscuripes* Ashm. Host unknown. La Fayette. (Proc. U. S. Nat. Mus., 1888, p. 660.)

9. *Aphidius pallidus* Ashm. Host not known. La Fayette. (Proc. U. S. Nat. Mus., 1888, p. 661.)

10. *Lysiphlebus multiarticulatus* Ashm. Host some species of Aphides. La Fayette. (Proc. U. S. Nat. Mus., 1888, p. 664.)

11. *Lysiphlebus ribaphidis* Ashm. From *Aphis ribes* on currant. La Grange county, July 12, 1886. (Proc. U. S. Nat. Mus., 1888, p. 664.)
12. *Lysiphlebus cucurbitaphidis* Ashm. From *Siphonophora cucurbita* Middleton. La Fayette. (Proc. U. S. Nat. Mus., 1888, p. 665.)
13. *Lysiphlebus eragrostaphidis* Ashm. Swept from *Eragrostis*. La Fayette, October 4, 1885. The host is probably *Glyphina eragrostidis* Middleton. (Proc. U. S. Nat. Mus., 1888, p. 665.)
14. *Lysiphlebus mysi* Ashm. From *Mysus ribis* L. La Fayette, See Insect Life, Vol. 3, p. 6. (Proc. U. S. Nat. Mus., 1888, p. 666.)
15. *Lysiphlebus tritici* Ashm. Host *Aphis mali* Fab. La Fayette, October 14, 1888. See Insect Life, Vol. 3, p. 61. (Proc. U. S. Nat. Mus., 1888, p. 668.)
16. *Diaretus americanus* Ashm. From *Siphonophora avena* Fabr. Probably Southern Indiana. (Proc. U. S. Nat. Mus., 1888, p. 669.)
17. *Diaretus brunniventris* Ashm. From *Siphonophora avena*. Southern Indiana. (Proc. U. S. Nat. Mus., 1888, p. 670.)
18. *Diaretus websteri* Ashm. From *Siphonophora avena*. Southern Indiana. (Proc. U. S. Nat. Mus., 1888, p. 669.)
19. *Paclyneuroa micans* Howard. From *Siphonophora avena* Fab. Goshen. Have also reared it at Wooster, Ohio, from *Aphis* or grass, probably *Aphis mali* Fab. (Insect Life, 3, p. 246.)
20. *Megaspilus niger* Howard. From *Siphonophora avena* Fab. La Fayette. (Insect Life, 3, p. 247.)
21. *Encyrtus websteri* Howard. From *Siphonophora avena* Fab. La Fayette. (Insect Life, 3, p. 247.)
22. *Encyrtus clisiocampe* Ashm. From eggs of *Clisiocampa disstri* Hub. Franklin, Ind. (Ohio Agr'l. Exp. Sta. Bull. 3, Vol. I., Technical Series.)
23. *Herpestomus phutellæ* Ashm. From *Plutella cruciferarum*. La Fayette; also at Columbus, Ohio. (Proc. U. S. Nat. Mus., 1889, p. 396.)
24. *Orthopelma bimaculatum* Ashm. Host not known. La Fayette. (Proc. U. S. Nat. Mus., 1889, p. 416.)
25. *Limnera flavicincta* Ashm. Host not known. La Fayette. (Proc. U. S. Nat. Mus., 1889, p. 436.)
26. *Zela nigriceps* Riley, MS. From *Crambus zeclus* Fern. Cass, Sullivan county, July 11, 1886.
27. *Acoloides saitidis* Howard. From eggs of spider, *Saitis pulex*. The types were reared in Nebraska by Prof. Lawrence Bruner, but specimens

were several years previously reared by me at Oxford, October, 1884. See *Insect Life*, Vol. 2, p. 359. (*Insect Life*, 2, p. 269.)

28. *Meraporus bruchivorus* Ashm. From *Bruchus exiguus* Horn. La Fayette. (Ohio Agr'l. Exp. Sta. Bull. 3, Vol. I., Technical Series.)

29. *Catolaccus tyloclerwa* Ashm. From *Tyloclerma foreolatum* Say. La Fayette. (Ohio Agr'l. Exp. Sta. Bull. 3, Vol. I., Technical Series.)

30. *Glypta* sp.? From cocoon on red cedar. La Fayette. See *Insect Life*, Vol. 3, p. 464.

31. *Wesmaelia Rileyi* Ashmead. Although the specimens, six in number, from which the description was drawn, were in the Riley collection and the species named in honor of the possessor, they were reared by me at Oxford, Ind., July 24–August 1, 1884, and sent to the U. S. Department of Agriculture, in whose employ I was at that time. These appeared in a breeding cage in which I was rearing *Toxoptera graminum*, and as there was no other inhabitant of this cage, that species must have been the host. This was the first time the species had been observed. It is not, however, a true Wesmaelid, and represents a rare family not as yet included in our lists. (*Proc. U. S. Nat. Mus.*, 1888, p. 641.)

32. *Pygostotus americanus* Ashmead. (MS.) Reared at LaFayette, Ind., Aug., 1889, from wheat stubble. As this stubble was infested by the Hessian fly and its various parasites, including *Eupelmus allynii* French, and as I also reared from the same lot of stubble, *Acoloides howardii* Ashmead, a spider parasite, *Labes hyphlocyba* Ashmead, *Encyrtus tarsalis* Ashmead, an undetermined species of *Bactomus* and a *Homoporus* sp., it is useless to theorize in regard to which of these might have been the host.

33. *Encyrtus tarsalis* Ashmead. (MS.) This was reared with the preceding, and also at LaPorte, Ind.

34. *Encyrtus brunnipennis* Ashmead. (MS.) Reared from wheat stubble from LaPorte, Ind., August, 1889.

35. *Atelopterus tarsalis* Ashmead. Reared at LaFayette, Ind., from *Silvanus surinamensis*, infesting stored grain. This had previously been reared at Washington, D. C., by Mr. Ashmead, from the same insect infesting raisins. (*Bull. U. S. Nat. Mus.*, No. 45, p. 45, 1893.)

36. *Cacus weanthi* Riley, Nov. Gen., et. sp. Reared from the eggs of *Ceanthus niveus* at LaFayette, Ind. This species is the type of the genus, and the only one whose parasitism is known. (*Bull. U. S. Nat. Mus.*, No. 45., pp. 223–4, 1893.)

Platygaster error Fitch. Reared June 14, 1884, at Oxford, Ind., from

larvæ of *Diplosistritici*. The original describer was in doubt as to whether this was really a parasite of this species, the wheat midge, or not. Re-described by Mr. Ashmead from specimens reared by myself as above. (Bull. U. S. Nat. Mus., No. 45, p. 291, 1893.)

A MITE, PROBABLY *HYPODERAS COLUMBE*, PARASITIC IN THE PIGEON. By W. W. NORMAN.

THE LOCUSTIDE OF INDIANA. By W. S. BLATCHLEY, Terre Haute, Indiana.

The order of insects known as the *Orthoptera* comprises seven families, three of which are alike in having the posterior femora more or less enlarged for leaping; the three being therefore classed together in a sub-order called the *Saltatoria*, or jumpers.

In the present paper we have to deal with that family of this sub-order known as the *Locustidae*, which comprises those insects commonly called katydids, green grasshoppers, and stone or camel crickets.

The distinguishing characters of the members of the family *Locustidae* are the long, slender, tapering, many-jointed antennæ; the almost universal absence of ocelli or simple eyes; the four jointed* tarsi or feet; and the ensiform or falcate ovipositor of the females which is made of four flattened plates; the males having, in many instances, abdominal appendages corresponding to the parts of the ovipositor, which are used as clasping organs. The tegmina or wing covers, when present, slope obliquely downwards, instead of being bent abruptly, as in the *Gryllidae*; and in most cases the wings are longer than the tegmina.

The stridulating or musical organ of the males is quite similar in structure to that of the male cricket, being found at the base of the overlapping dorsal surface of the tegmina and usually consisting of a transparent membrane, of a more or less rounded form, which is crossed by a prominent curved vein, which on the under side bears a single row of minute file like teeth. In stridulating the wing covers are moved apart and then shuffled together again when these teeth are rubbed over a vein on the

* The members of the genus *Daihinia*, no one of which occurs in Indiana, have the fore and hind tarsi three-jointed.