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OHIO ROBBER FLIES V.

(DIPTERA: ASILIDAE)

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The following new records and notes concerning Ohio Asilidae are herewith set forth under 6 headings: (1) New Ohio records, (2) Change of name, (3) Unusual records of species not new to Ohio, (4) Zoomimesis, (5) Honeybee Prey records and (6) Literature cited.

1. NEW OHIO RECORDS

Three species new to Ohio are here recorded bringing the total number of species known from Ohio to 94.

91. **Ceraturgus aurulentus** Fabricius. This rarest of North American Asilids was collected at a light-trap by John S. Thomas in Washington Twp., Jackson County, a few years ago and is now in the collection at the Ohio State Museum. The specimen was a male, but with antennae broken off. No date is available. This species was known as the "long-lost *aurulentus*." Described by Fabricius in 1805 from a New York specimen, it was not subsequently taken until Dr. C. W. Johnson collected one in 1892 at Westville, New Jersey. There are only 10 specimens known in collections. I have 3, one collected by Dr. Josef Bequaert in Van Cortland Park, New York City, without date (although probably 1919) and subsequently given to me; one collected by myself at Stamford, Connecticut, on August 2, 1936; and one taken by Dr. P. W. Fattig at Blood Mountain, Georgia, on September 17, 1939. Dr. Fattig very kindly donated this specimen to me. According to the Journal of the New York Entomological Society, Vol. 27, page 345, 1919 (Reference from Dr. Carl Parsons) another was collected by Mr. Burns at Singac, New Jersey. No date is available, nor is the present location of the specimen known. The New Jersey State list records 2 more specimens, one from Chester, and one from Trenton, July 7 (Harbeck). On August 17, 1925, a female was collected by W. W. Newcomb at Ann Arbor, Michigan, and is now in the University of Michigan Collection.

92. **Stichopogon argenteus** Say. This very small silvery species occurs on sand. Dr. Josef N. Knull showed me in 1947 a specimen collected by Professor R. C. Osburn in Ottawa County, August 7. (No year given). This was the first Ohio record, although it was known to occur elsewhere along the sandy shores of the Great Lakes. In 1949 Dr. Edward S. Thomas, Curator of Natural History, Ohio State Museum, collected a series of 5 males and 14 females on the dry loose sand just back from the beach of Kelley's Island, Erie County, August 25–30. Three were taken with prey; 2 with Chionomid midges, one with a minute cricket.

93. **Holcocephala fusca** Bromley (description to appear in American Museum Novitates). Taken in Texas, Tennessee and Ohio. The Ohio records are as follows: Beaver Pond, Adams County, August 7, 1948 (E. S. Thomas, J. S. Thomas, and S. W. Bromley), the following with prey: 5 with *Culicoides* spp., 1 with *Phortica* sp., and one with a minute Scolytid beetle.

Holcocephala fusca listed from specimens det. by S. W. Bromley, 1949, and in the Ohio State Museum as of Nov. 18, 1949.

Adams Co., Ohio, Aug. 10, 1935, Edw. S. Thomas—2
Adams Co., Ohio, Beaver Pond, Aug. 4, 1937, Edw. S. Thomas—2
Erie Co., Ohio, Castalia, Aug. 14, 1939, E. S. Thomas—1

Erie Co., Ohio, Huron Twp., Sept. 12, 1943, E. S. Thomas—1
Vinton Co., Ohio, Swan Twp., July 30, 1937, R. M. Goslin—1
Lawrence Co., Ohio, Aug. 18, 1929, J. S. Hine—1
Ross Co., Ohio, Andersonville, Aug. 17, 1941, R. M. Goslin—3
Ross Co., Ohio, South Union Twp., Aug. 25, 1941, R. M. Goslin—1
Ross Co., Ohio, Paint Twp., Aug. 16, 1947, W. E. Goslin—2
Hocking Co., Ohio, "Neotoma," July 26, 1936, E. S. Thomas, C. F. Walker—1
Union Co., Ohio, Marysville, Aug. 13, 1940, Clem Wolfe—1
Fairfield Co., Ohio, Flatrocks, Aug. 14, 1938, R. M. Goslin—1
Fairfield Co., Ohio, Flatrocks, Sept. 25, 1936, R. M. Goslin—1
Fairfield Co., Ohio, Berne Twp., July 15, 1939, R. M. Goslin—1
Fairfield Co., Ohio, Berne Twp., Aug. 13, 1936, R. M. Goslin—1
Fairfield Co., Ohio, Berne Twp., Aug. 10, 1936, R. M. Goslin—1
Fairfield Co., Ohio, Lancaster, Aug. 2, 1935, R. M. Goslin—1
Fairfield Co., Ohio, Lancaster, Aug. 1, 1936, R. M. Goslin—1
Fairfield Co., Ohio, Lancaster, Aug. 5, 1935, R. M. Goslin—1
Columbus, Alum Creek, Aug. 7, 1943, R. M. Goslin—2
Columbus, Alum Creek, July 4, 1944, R. M. Goslin—1
Columbus, Alum Creek, July 29, 1944, R. M. Goslin—1
Columbus, Alum Creek, July 11, 1943, R. M. Goslin—1
Columbus, Alum Creek, July 12, 1943, R. M. Goslin—1
Columbus, Alum Creek, July 31, 1943, R. M. Goslin—2
Columbus, Alum Creek, Aug. 12, 1947, R. M. Goslin—1
Columbus, Alum Creek, Aug. 15, 1943, R. M. Goslin—3
Columbus, Alum Creek, Sept. 7, 1942, R. M. Goslin—1
Columbus, Alum Creek, July 18, 1948, R. M. Goslin—3

94. **Diogmites missouriensis** Bromley (Description to appear in American Museum Novitates). The first Ohio record of this species of the Missouri and Mississippi River Valleys, was collected in a field in which weeds had recently been cut at the edge of a vegetable garden in a corner lot, at Erie and Raymar Streets in Hyde Park, on August 11, 1947, by R. M. Goslin and S. W. Bromley. On August 17, 1949, Dr. E. S. Thomas, S. W. Bromley and R. M. Goslin went back to this place. Another specimen, a female (the preceding being a male) was collected by R. M. Goslin at the very spot where the 1947 one was found.

2. Change of Name

The numbers preceding the following data are those used in my original listing.

24. **Laphystia ochreifrons** Curran. In my original list of Ohio Asilids in Ohio State Museum Bulletin, vol. 1, No. 2, 1931, page 8, *Laphystia notata* Bigot was recorded from Cincinnati in both the J. S. Hine and the Charles Dury collections. This name should be changed to *Laphystia ochreifrons* Curran. One of Curran's types was from "Ohio." *Notata* does not seem to occur east of the Mississippi.

3. Unusual Records of Species Not New to Ohio

26. **Atomosia glabrata** Say. Resembles superficially *A. puella* Wiedemann, but has more yellow on the legs, the undersides of the front femora being entirely yellow. It rests on leaves and plant stalks. 5 specimens were collected in Jackson Twp., Vinton County, August 19, 1941, by R. M. Goslin. At Roseville, August 13, 1949, one was noted, but not collected, resting on the stem of a tall Joe Pye weed. At Hyde Park, on August 17, 1949, one was collected by R. M. Goslin on a corn stalk. Mr. Goslin also saw one in the same cornfield on August 18, 1949, where it was resting on a leaf-blade of corn with a white fly in its grasp. Two specimens were collected by R. M. Goslin at "Neotoma," Hocking Co., on August 16, 1942.

Atomosia glabrata, Neotoma, Goodhope Twp., Hocking County, Ohio, Aug. 16, 1942, 1, R. M. Goslin.
Atomosia glabrata, Vinton County, Ohio, Jackson Twp., S 25, Aug. 19, 1941, 1, R. M. Goslin.
Atomosia glabrata, in the Ohio State Museum Collection.
Neotoma, Goodhope Twp., Hocking County, Ohio, Aug. 16, 1942, 1, R. M. Goslin.
Vinton County, Jackson Twp., Ohio, S 25, Aug. 19, 1941, 4, R. M. Goslin
Cincinnati, Ohio, Hyde Park, Aug. 17, 1949, 1, R. M. Goslin.

38. **Bombomima thoracica** Fabricius. Dr. J. N. Knull collected a female with a 17-year cicada as prey at Clifton, June 5, 1936. The cicada was of the smaller variety, *Magicicada septendecim* (L.) var. *cassinii* (Fisher). This is my only record of an asilid attacking the 17-year locust, although the dragon fly, *Epiaeschna heros*, and the introduced ground beetle, *Calosoma sycophanta*, are known to prey on this cicada.

40. **Dasylechia atrox** Williston. Dr. J. N. Knull, Curator of the Ohio State University Insect Collection, discovered a female of this rare species in one of the student collections in 1948 without label but presumably collected that summer on or near the Ohio State University campus. Another in a student collection in 1949 was labelled Sharon, Ohio, June 7, 1949.

42. **Mallophora orcina** Wiedeman. **The Southern Bee-killer.** This species was recorded from Madison Township, Guernsey County, in late summer, 1915, by Thomas Guyton in his unpublished Master's thesis "Insects of an Ohio Farm" (O. S. U. 1916), on p. 119 of the 149 page typed manuscript. This is the northernmost record of the species. It was collected abundantly at Hyde Park, near Cincinnati, in 1899 by Charles Dury. A series was collected by E. S. Thomas, R. M. Goslin and S. W. Bromley at Perry, Gallia County, in a Joe Pye weed swale on August 27, 1938, and in a sandy bean field in Harrison Township, Scioto County, on August 28, 1938. In the University collection in the Botany and Zoology Building O. S. U. are 2 specimens collected by R. W. Strandtmann on August 8, 1942, in Lawrence County, and 2 more on August 9, 1942, in Jackson County.

44. **Promachus hinei** Bromley. New localities are: Numerous specimens collected by Homer F. Price of Payne, Ohio, in Paulding and Defiance Counties, between July 31 and Sept. 26, where Mr. Price reports the species to be common. Defiance County, July 31, 1942; and Blue Creek, Paulding County, August 2, 1942; Clifton Gorge, August 13, 1948 (J. N. Knull and S. W. Bromley); Roseville, August 13, 1949 (S. W. Bromley) and a series collected by E. S. Thomas, R. M. Goslin, S. W. Bromley and Ralph Dury at Linwood and Hyde Park mostly in cornfields and surrounding rank vegetation on August 17 and 18, 1949; Ross County, Andersonville, August 17, 1941, R. M. Goslin; Adams County, Monroe Twp., August 14, 1938, Edward S. Thomas and John S. Thomas; and Adams County, Meigs Twp., August 16, 1947, Wm. E. Goslin.

45. **Promachus rufipes** Fabricius. Mr. Robert M. Goslin, in rearranging the exhibit collection at the Ohio State Museum found a series of this species that the late Professor J. S. Hine had collected in Lawrence County, August 18, 1929. There were one male and three females in the series. *Rufipes* is restricted to the extreme southeastern counties in Ohio. In certain parts of the "deep South," *rufipes* is called the "Bee Panther" because of its attacks on the domestic bee. The most northern record of its capture is Hudson, New York, where I collected it in August, 1924.

68. **Mallophora clausicella** Macquart. Abundant at "Neotoma," Hocking County, on August 28, 1943, where collections were made by S. W. Bromley and R. M. Goslin. They were noted flying actively about within 6 inches of the ground, alighting on Andropogon and other weed stalks. One was noted preying on a halictid bee. A female was noted laying a white froth-covered packet of eggs

on the tip of a grass head in a footpath. A mating pair was noted. In flight, these flies carried the tip of the abdomen upturned.

82. **Leptogaster tenuipes** Loew. A total of 14 specimens[1] of this rare Ohio species has now been collected by Robert M. Goslin, 13 along Alum Creek, Columbus, and 1 in Berne Twp., Fairfield Co. The dates range between July 22 and September 6.

4. Zoomimesis

All through the larger Diptera we find species of flies mimicking the well-defended aculeate Hymenoptera with which they are locally associated. In Ohio there are several robber flies which are mimics of common native bees and wasps. Here are the 12 outstanding mimics listed with the degree of mimicry exhibited and the name of the model:

13. **Ceraturgus cruciatus.** Fair mimic of queen yellow jacket, *Vespa maculifrons* or *Vespa arenaria.*

84. **Ceraturgus dimidiatus.** Fair of queen hornet, *Vespa maculata.*

91. **Ceraturgus aurulentus.** Fair of worker yellow jacket, *Vespa maculifrons* or *V. arenaria.*

19. **Diogmites discolor.** Poor of brown wasp, *Polistes fuscatus.*

40. **Dasylechia atrox.** Good of carpenter bee, *Xylocopa virginica.*

38. **Bombomima thoracica.** Excellent of bumblebee, *Bombus impatiens* or *B. vagans.*

37. **Bombomima grossa.** Poor of large bumblebee. O. E. Plath considered *grossa* mimetic of the guest bumblebee, *Psythirus laboriosus* Fabr.

36. **Bombomima flavicollis.** Good of sand bee, *Andrena carlini* Ckll.

35. **Bombomima divisor.** Poor of hornet, *Vespa maculata.*

39. **Bombomima virginica.** Good of worker bumblebee, *Bombus impatiens.*

68. **Mallophora clausicella.** Fair of bee, *Megachile latimanus* Say.

42. **Mallophora orcina.** Fair of worker bumblebee, *Bombus americanorum.*

5. Honeybee Prey Records

21. **Diogmites neoternatus** Bromley. Through an oversight, this species was not listed among the asilids preying on Ohio honeybees in my last paper, Ohio Robber Flies IV, Ohio Journal of Science 67, 2, March, 1947, p. 68. I have 3 Ohio records of this species with honeybee prey: one, Roseville, August 3, 1941, and two, Montgomery, near Cincinnati, August 11, 1947, (S. W. Bromley and R. M. Goslin). This long-legged scraggly species, characterized by the clavate abdomen

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[1] *Leptogaster tenuipes*
In Ohio State Museum:
Columbus, Ohio, Alum Creek—July 22, 1944—2
" " " " Aug. 7, 1943—1
" " " " Aug. 14, 1943—2
" " " " Aug. 19, 1942—1
" " " " Aug. 22, 1944—1
" " " " July 30, 1949—1
Fairfield Co., Ohio, Berne Twp., S 9—September 6, 1943—1
Leptogaster tenuipes
In R. M. Goslin Collection:
Columbus, Ohio, Alum Creek—Aug. 14, 1943—1
" " " " July 29, 1944—1
Leptogaster tenuipes
To Dr. Stanley W. Bromley Collection:
Columbus, Ohio, Alum Creek—Aug. 13, 1946—1
" " " " Aug. 27, 1946—1
Leptogaster tenuipes
To the Ohio State University Collection:
Columbus, Ohio, Alum Creek—Aug. 28, 1947—1
All of the above specimens collected by Robert M. Goslin.

which is entirely pale reddish-yellow without black markings, and the three deep black velvety stripes on the mesonotum, the middle of which fades into red anteriorly, is a ghostly appearing robber fly, flying silently with outstretched legs in a manner reminiscent of the Phantom Crane fly, *Bittacomorpha clavipes*. The large dark eyes stare at one as the fly hovers nearby. This *Diogmites* has the peculiar habit of flying, when disturbed, directly *through* a shrub or weed, rather than over or around it. It feeds largely on bees and wasps, frequently catching honeybees and *Polistes* wasps.

22. **Diogmites umbrinus** Loew. **The New York Bee-Killer.** This species occurs locally throughout the state but is most frequently found in the Ohio River Valley. An amateur entomologist who kept bees for many years in New York State once told me that he thought this robber fly, together with the Nebraska Bee-Killer, *Promachus fitchii*, had caused economic losses to bee keepers there, and furthermore said that he believed these 2 species largely responsible for the statement made on page 142 of Howard's Insect Book, that Dr. Fitch's correspondent had claimed that "it was through the work of robber flies that during certain seasons in a bee-raising region in New York not a single hive threw off a swarm." P. fitchii's season was late June and July with *umbrinus* taking over in August and September. I have never heard of this species causing such losses in Ohio. The Nebraska Bee-killer, of course, has never been recorded from Ohio, which is probably due to the fact that it requires a certain type of soil, lacking here.

In August, 1930, Dr. Kellogg, then Professor of Bee-keeping at the Massachusetts Agricultural College, Amherst, Mass., found *D. umbrinus* killing honeybees in numbers at the College Apiary. In writing of this species, I am reminded of an interesting item told me by my great friend, the late C. W. Johnson. In 1913, a colony of the wasp, *Aphilanthops frigidus*, was harassed in Massachusetts by *D. umbrinus*. This robber fly was seen seizing not only the wasps alone but also when carrying their own prey of winged female ants.

I might add that *umbrinus*, once the most abundant of the larger asilids in New York and New England, has become increasingly scarce during the past 50 years. It formerly occurred within the limits of New York City, Angus having collected it preying on honeybees at West Farms years ago, but now it has disappeared from most if not all of Westchester County. Long before this species was scientifically described, it was pictured in Dr. E. Emmons' "Natural History of New York" (1854) plate 28, Fig. 2 labelled "undescribed." This red robber fly was abundant in South Central Massachusetts during my boyhood and was even noted flying in the streets of Southbridge, where it was common in flower and vegetable gardens. It was the first robber fly to engage my attention when I found it capturing yellow jackets near their nests, thereby endearing itself to me in my childhood fight against the common enemy.

I have obtained additional Ohio honeybee prey records from the following:

42. **Mallophora orcina,** 50 plus (George E. Perry, Newtown). Mr. Perry told me on August 18, 1949, that he had seen more than 50 bees captured by this "Bee Hawk" during the past few years. They fly singly about the hives and catch the bees on the wing, sometimes close to the entrances. Frequently this audacity amounts to suicide. The bees, enraged by the killing of one of their number, attack the robber fly en masse and sting it to death. Strong colonies of bees, according to Mr. Perry, will not tolerate the presence of this fly close to the hive. He has found the dead bodies of *orcina* at hive entrances on a number of occasions—mute testimony of the bees' deadly retribution.

43. **Promachus vertebratus,** 22. 17 near or at Columbus (SWB) plus 5 at Alum Creek, Columbus (RMG).

44. **Promachus hinei,** 18. 5, Defiance and Paulding Counties (Homer F. Price). 5, Roseville (SWB). 8, Cincinnati (Ralph Dury, R. M. Goslin, S. W. Bromley).

38. **Bombomima thoracica,** 14. Columbus (R. M. Goslin).

19. **Diogmites discolor,** 14. Columbus (R. M. Goslin). Cincinnati (G. E. Perry and McClure) (R. M. Goslin and S. W. Bromley). On August 17, 1949, at Newtown, Mr. McClure found a large male dead at hive entrance after it had caught a bee and was mobbed and stung by the swarm.

22. **Diogmites umbrinus,** 10. 6, Lancaster (SWB). 4, Cincinnati (RMG and Ralph Dury).

This brings the total honeybee prey records for Ohio Bee-killing Asilids to the following tabulation of the 6 outstanding bee-killers.

Name of Asilid	*Number of honey-bee prey*
Mallophora orcina	71
Promachus vertebratus	50
Diogmites discolor	31
Promachus hinei	26
Bombomima thoracica	23
Diogmites umbrinus	19

6. Literature

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