

Article XIV.—REPORT ON THE LEPIDOPTERA OF THE
AMERICAN MUSEUM EXPEDITION TO ARIZONA, 1916

GEOMETRIDÆ AND EPIPLEMIDÆ¹

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The material reported on here was collected by Dr. Frank E. Lutz in 1916, as a part of the entomological survey of Western United States that is being conducted by the Department of Invertebrate Zoology of The American Museum of Natural History. Dr. Lutz was accompanied by Mr. J. A. C. Rehn of the Philadelphia Academy of Natural Sciences, and a part of the material is deposited in that institution.

Most of the specimens were taken at night on or in a cheese-cloth tent that was illuminated by two gasolene lanterns. The collecting stations are all in Pima County, their location is approximately as follows:

	Latitude	Longitude	Altitude
Bear Wallow, Satanta Catalina Mountains.	32° 25.3' N.	110° 44' W.	About 8000 feet
Bear Wallow Trail, Santa Catalina Mountains.	32° 22' N.	110° 46.5' W.	About 3800 feet
Sabino Basin, Santa Catalina Mountains.	32° 22' N.	110° 46.5' W.	About 3800 feet
Mud Springs, Pine Canyon, Santa Catalina Mountains.	32° 23.3' N.	110° 45' W.	About 6500 feet
Lowell Ranger Station, Santa Catalina Mountains.	32° 18.5' N.	110° 49' W.	About 2700 feet
Kits Peak Rincon, Baboquivari Mountains.	31° 57' N.	111° 33' W.	About 4050 feet
North Side Kits Peak, Baboquivari Mountains.	32° 0' N.	111° 36' W.	About 3600 feet
Coyote Mountains.	31° 58' N.	111° 29' W.	About 3500 feet
Comobabi Mountains.	32° 2' N.	111° 45' W.	About 3425 feet
Santa Cruz Village, Comobabi Mountains.	32° 1' N.	111° 54' W.	About 3100 feet
Palo Alto Ranch, Altar Valley.			
Robles Ranch, Altar Valley.	32° 5' N.	111° 18' W.	
Black Dike Prospect, Sierritas.	31° 56' N.	111° 16' W.	About 3750 feet
Lincoln Mine, Sierritas.			
San Xavier Mission, near Tucson.			

¹The following new names are proposed in this paper:
Hydriomena clarki, new species.
Euchlena lutzii, new species.

This collection seems to me rather remarkable in that the species obtained from the above localities are chiefly those characteristic of the dry, mountainous regions of the southwestern United States. The approach to what I have considered as distinctively Mexican forms is conspicuously absent, although much of the material came from near the Mexican border. In only one species, *Hydriomena clarki*, does a distinctively Mexican group seem to be represented, and even this is closely allied to one of the groups in our own fauna.

In most cases the amount of material taken has been ample for purposes of identification and, for the most part, it is in very good condition.

I wish to acknowledge the helpfulness of Mr. F. E. Watson, and to Dr. Lutz I extend my heartiest thanks for courtesies offered.

GEOMETRIDÆ

Nemoria pistaciaria Packard.

One specimen, Mud Springs, July 17-20.

Nemoria junctolinearia Græf.

One specimen, Bear Wallow, July 13.

Nemoria festaria Hulst.

One specimen, Sabino Basin, July 8-12.

Synchlora liquoraria Guenée.

One specimen, Kits Peak Rincon, July 31-August 3.

Dichorda phoenix Prout.

Two specimens, Kits Peak Rincon, August 1-4.

Mesotheta viridipennata Hulst.

Three specimens, Sabino Basin, August 15-21.

Chlorochlamys masonaria Schaus.

Two specimens, Sabino Basin, August 15-21.

Dasycosymbia gracilata Grossbeck.

Three specimens, Coyote Mountains, August 3-7.

Pigia multilineata Hulst.

Twenty-eight specimens: 2, Coyote Mountains, August 3-7; 17, Sabino Basin, 6, July 8-12 and 11, August 15-21; 6, Kits Peak Rincon, July 31-August 4; 3, Comobabi Mountains, August 9-11. The individuals taken at Sabino Basin, July 8-12, are old and worn and probably represent an earlier generation.

Dysstroma species, unknown.

Two specimens, Bear Wallow Trail, July 13 and August 17-19.

The July specimen was swept from *Ceanothus*.

Hydriomena clarki, new species

Palpi extending beyond the head a distance equal to length of head, porrect and beak-like, black at tips and along sides; red-brown mixed with black above and lighter beneath. Front and occiput brownish gray with a very narrow blackish line along the middle. Thorax brownish gray with a mixture of black scales. The lappets black with brownish and white scales. A large brownish and gray tuft at the base. Abdomen rather robust, gray with a distinct reddish cast, a dark brown dorsal line. Anal tuft large and becoming ochreous at the tips.

Primaries.—The whole wing has a faint olive cast. The inner edge from the median vein is tinged with red, more pronounced just inward from the anal angle; the linear discal dot also has a reddish cast. The basal area to about one-fourth out is pale gray more or less strigate with black scales; a squarish black spot at the extreme base of this area showing most strongly at the juncture of the median and subcostal veins. The inner edge of the basal area is very narrowly black with a few white scales outwardly. Beyond is a black band half as wide as the basal area, a little wider on the costa, extending slightly outward across the wing to a deep black rectangular spot between vein one and the inner margin; the outer edge of this band is more or less sinuate with a rather sharp angle inward from costa to subcosta and an outward scallop to middle of cell. Succeeding this band is a narrow gray band determined outwardly by a fine black line which begins in a spot on the costa as wide as the band and parallels the black band across the wing; the line is lost between veins one and two but reappears between vein one and the margin. The median space is gray, conspicuously strigate with black scales; an outwardly oblique, black, scalloped line starts on the costa above the end of the cell and terminates in a black cloud above vein four. A submarginal dark liver-colored band begins on the costa midway between the cell and the apex running in an irregular course across the wing, the inner edge of this band is scalloped inwardly and the outer edge is scalloped outwardly. From costa to vein five it is about the width of the basal black band, at vein five it suddenly contracts on the inner side to about one-third the width above, runs parallel to the outer margin, gradually widening to the middle of the space between veins one and two whence it contracts again slightly to just inside the anal angle. Marginal space reddish with a deep black apical cloud cutting it above vein six. Terminal line broad and blackish, irregularly and broadly dentate. Fringe short and lustrous. All veins more or less outlined with black.

Secondaries.—Smooth, fuscous, slightly darker at outer margin; fringe somewhat lighter, lustrous.

Beneath gray, more or less irrorate with black. Apical portion of primaries cloudy and a few whitish marks on the costa.

Expanse, 32 mm.

Holotype: male; Bear Wallow, August 17–19. Amer. Mus. Nat. Hist. Coll.

Paratypes: 5 males; four with the same data as the holotype, one (left wings badly rubbed) from Sabino Basin, August 15–21. Amer. Mus. Nat. Hist. and author's collection.

The form of maculation seems to place this species in the same group as *furcata* Thunberg but the form of the uncus fixes it in the same group as *speciosata* Packard, to which species it seems to be most closely allied. I take pleasure in dedicating this species to Mr. B. Preston Clark whose generosity made the expedition possible.

Hydriomena neomexicana Hulst.

Seven specimens: 6, Coyote Mountains, August 3-7; 1, Comobabi Mountains, August 9-10.

Cœnocalpe aurata Grote.

Three specimens, Bear Wallow Trail, July 13.

Mesoleuca interrupta Grossbeck.

One specimen, Bear Wallow, July 12-17.

Eupithecia subcolorata Hulst.

One specimen, Mud Springs, July 17-20.

Eupithecia flavigutta Hulst.

Two specimens: 1 Mud Springs, July 17-20; 1, Bear Wallow Trail, July 13.

Eupithecia species, unknown.

One specimen, Coyote Mountains, August 3-7.

Eupithecia species, unknown.

Two specimens, Mud Springs, July 17-20.

Fernaldia fimetaria Grote and Robinson.

Thirty-five specimens: 3, Palo Alto, July 29-30; 21, Black Dike Prospect, July 26-29; 4, Comobabi Mountains, Aug. 9-10; 1, Lincoln Mine, July 19; 3, Kits Peak Rincon, July 31-Aug. 4; 1, North Side Kits Peak, Aug. 7-9; 1, Santa Cruz Village, Aug. 10-12, 1, Robles Ranch, Aug. 13.

Fernaldia partitaria Grote.

Seven specimens: 2, Comobabi Mountains, Aug. 9-10; 4, Black Dike Prospect, July 26-29; 1, Santa Cruz Village, Aug. 10-12.

Chloraspilates bicoloraria arizonaria Grote.

Thirty-seven specimens: 13, Kits Peak Rincon, July 31-Aug. 4; 17, Coyote Mountains, Aug. 3-7; 4, North Side Kits Peak, Aug. 7-9; 2, Comobabi Mountains, Aug. 9-10; 1, Black Dike Prospect, July 26-29.

Macaria simulata Hulst.

One specimen, Sabino Basin, Aug. 15-21.

Macaria pictipennata Hulst.

Two specimens, Kits Peak Rincon, Aug. 1-4.

Macaria s-signata Packard.

Eight specimens: 7, Kits Peak Rincon, July 31-Aug. 4; 1, North Side Kits Peak, Aug. 7-9.

Sciagraphia colorata Grote.

Twenty-six specimens: 1, North Side Kits Peak, Aug. 7-9; 4, Kits Peak Rincon, July 31-Aug. 4; 1, Sabino Basin, July 8-12;

4, Coyote Mountains, Aug. 3-7; 1, San Xavier Mission, July 24; 4, Santa Cruz Village, Aug. 10-12; 11, Tucson, 2, July 3-5 and 9, July 21-23.

Cymatophora minuta Hulst.

Three specimens: 1, Lowell Ranger Station, July 6-20; 2, Bear Wallow, July 12-17.

Phasiane tenebrosata Hulst.

Sixty-nine specimens: 58, Sabino Basin, Aug. 15-21; 11, Kits Peak Rincon, July 31-Aug. 4.

Itame octolineata Hulst.

One specimen, Black Dike Prospect, July 26-29.

Catopyrha species, unknown.

One specimen, Sabino Basin, Aug. 15-21.

Tornos scolopacinaris Guenée.

One specimen, North Side Kits Peak, Aug. 7-9.

Tornos erectarius Grossbeck.

One specimen, Coyote Mountains, Aug. 3-7.

Glaucina escaria Grote.

Two specimens: 1, Santa Cruz Village, Aug. 10-12; 1, Kits Peak Rincon, Aug. 1-4.

Glaucina erroraria Dyar.

Eight specimens: 5, Coyote Mountains, Aug. 3-7; 1, Kits Peak Rincon, July 31-Aug. 3; 1, Santa Cruz Village, Aug. 10-12; 1, Lowell Ranger Station, July 6-20.

The close distinctions necessary to separate the species of *Glaucina* make certainty of identification next to impossible unless the types, or at least compared specimens, are before us. In the case of *erroraria* Dyar, as here identified, neither the types nor compared specimens are at hand. However, the excellent paper by Grossbeck seems to make it quite clear that the specimens here listed are the true *erroraria*.

Glaucina eupetheciaria Grote.

Twenty-eight specimens: 7, North Side Kits Peak, Aug. 7-9; 1, Coyote Mountains, Aug. 3-7; 1, Black Dike Prospect, July 26-29; 1, San Xavier Mission, July 24; 18, Kits Peak Rincon, July 31-Aug. 3.

The eighteen specimens from Kits Peak Rincon seem to me to be slightly different in wing form from the rest. The apex is somewhat more produced than in the others of the series. It is quite possible, I think, that these are the typical *eupetheciaria* Grote while the rest having the apex more rounded may be referable to *pygmeolaria* Grote.

This apparent difference is hardly sufficient to separate the two species, hence they are here listed as one.

Glaucina species, unknown.

Six specimens: 2, Coyote Mountains, Aug. 3-7; 1, North Side Kits Peak, Aug. 7-9; 1, Lowell Ranger Station, July 6-20; 1, Kits Peak Rincon, July 31-Aug. 3; 1, Palo Alto, July 29-30.

I am unable to definitely locate any of these specimens. They seem to represent about four species.

Cœnocharis ochrofuscaria Grote.

Twenty-three specimens: 20, Coyote Mountains, Aug. 3-7; 1, Black Dike Prospect, July 26-29; 2, Santa Cruz Village, Aug. 10-12.

The specimens here identified as *ochrofuscaria* Grote are quite markedly darker than the specimens so identified by Grossbeck in the Museum Collection; structurally, however, they seem to be identical and I feel quite certain that my identification is correct.

Cœnocharis macdunnoughi Grossbeck.

Eleven specimens: 8, Coyote Mountains, Aug. 3-7; 1, North Side Kits Peak, Aug. 7-9; 1, Santa Cruz Village; Aug. 10-12; 1, Kits Peak Rincon, Aug. 1-4.

The specimens here identified as *C. macdunnoughi* Grossbeck agree in all essential points with Grossbeck's description but, as I have been unable to compare them with the types, I may be in error. The species seems very close to *ochrofuscaria* Grote, but the presence of the distinct cross-lines and the darkened median space sets it off from the latter species. Barnes and McDunnough have referred *macdunnoughi* to *Glaucina*; this I believe to be in error, since *macdunnoughi* and *ochrofuscaria* are structurally identical.

Synglochis perumbraria Hulst.

Ten specimens: 4, Santa Cruz Village, Aug. 10-12; 1, Marathon, Brewster County, Texas, July 1-2, '16; 3, Coyote Mountains, Aug. 3-7; 2, Kits Peak Rincon, Aug. 1-4.

Cleora obliquaria Grote.

Twenty-four specimens: 3, Black Dike Prospect, July 26-29; 10, North Side Kits Peak, Aug. 7-9; 3, Santa Cruz Village, Aug. 10-12; 2, Kits Peak Rincon, July 31-Aug. 4; 5, Coyote Mountains, Aug. 3-7; 1, Palo Alto, July 29-30.

Cleora species (near *pampinaria* Guenée).

One specimen, Sabino Basin, July 8-12.

Cleora species, unknown.

One specimen, Kits Peak Rincon, Aug. 1-4.

Cleora species, unknown.

One specimen, Bear Wallow, July 12-17.

Alcis haydenata Packard.

Two specimens, Sabino Basin, July 8-12 and Aug. 15-21.

Stergamatæa dolliata Grossbeck.

One specimen, Sabino Basin, July 8-12.

Phæoura mexicanaria Grote.

One specimen, Sabino Basin, Aug. 15-21.

Græfia smithi Pearsall.

Two specimens, Santa Cruz Village, Aug. 10-12.

Metrocampa perlata Guenée.

Two specimens, Bear Wallow, July 12-17.

Euchlæna lutzi, new species

Palpi.—Sprinkled with light brown along the sides. Front light brown and concolorous with the thorax. Abdomen somewhat lighter than thorax, more ochreous; tips slightly tufted.

Primaries.—General aspect from base to outer line pale ochreous, the color deepening slightly in the apical region. Basal third strigate and clouded with olive-brown scales and patches outwardly to a broadly diffuse line of the same color crossing the wing in a wide outward curve just before the juncture of vein two with the cell. The median space is divided approximately in the center by an irregular and broadly diffused line similar to the one just described; a few brown scales are scattered over the space and the brown discal dot is fused with the line. The outer line is sharply defined, narrow and distinctly brown. This line parallels the margin except near the apex where it forms a sharp angle to the costa. Beyond and above this angle apically the ground-color appears much clouded; the rest of the space beyond the line to the outer margin is evenly chocolate-brown. Apex slightly falcate; margin broadly angled at vein four.

Secondaries.—Concolorous; basal half without lines. Just beyond the discal dot and between it and the inner margin is a straight, broadly diffused, smoky line or band. Marginal space as in primaries.

Beneath much as above but somewhat lighter.

Female.—Ground-color a little lighter than in the male, more inclined to pale ochreous with smoky brown scales and patches scattered over the entire surface, lines or bands but faintly indicated. Discal dot distinct on the primaries but obsolete on the secondaries.

Expanse, 25 mm.

Holotype: male; Coyote Mountains, Aug. 3-7. Amer. Mus. Nat. Hist. Coll.

Allotype: female; Baboquivari Mountains, Pima County, July 15-30, 1903, (O. C. Poling, Grossbeck Coll.). Amer. Mus. Nat. Hist. Coll.

Paratypes: males; 2 specimens with same data as allotype; 2 specimens, Coyote Mountains, Aug. 3-7; 2 specimens, Sabino Basin, Aug. 15-21. Amer. Mus. Nat. Hist. and author's collection.

Five of these specimens were taken by Dr. F. E. Lutz during the summer of 1916, the other three were found in the Grossbeck Collection without a name. It was quite evident that Grossbeck had given them some study and had intended describing them. The species is interesting from the fact that the amount and depth of coloration varies so considerably. One of the paratypes, slightly larger (27 mm.), is almost as devoid of distinctive lines or bands as is the allotype. There is a bare possibility that the species has been described from Mexico but I believe it to be new, hence I propose the name *lutzi* as an expression of the regard in which I hold the collector.

Epiplatymetra lentifuata Barnes and McDunnough.

One specimen, Bear Wallow Trail, July 17.

Stenaspilates albomacularia Hy. Edwards.

Six specimens: 3, Coyote Mountains, Aug. 3-7; 2, North Side Kits Peak, Aug. 7-9; 1, Black Dike Prospect, July 26-29.

Stenaspilates levisaria Grossbeck.

One specimen, Coyote Mountains, Aug. 3-7.

Stenaspilates flavisaria Grossbeck.

One specimen, Coyote Mountains, Aug. 3-7.

Gonodontis distycharia Guenée.

One specimen, Sabino Basin, Aug. 15-21.

Epilemidæ

Callizzia certiorata Pearsall.

Ten specimens: 8, Bear Wallow Trail, July 13; 2, Mud Springs, July 17-20.