

SOUTHWESTERN GEOMETRID NOTES AND  
NEW SPECIES

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*Semiothisa fieldi* Swett was described in 1916 (Can. Ent. p. 326) from a series of specimens taken in the La Puerta Valley of southern California in July. This is a light ashen gray insect, with prominent t.a. and t.p. lines and an annulate discal spot on the primaries. In the collection of the Los Angeles County Museum there is a short series of a much lighter insect, taken at Independence, Calif. by Dr. John A. Comstock in April and May, which seems to be sufficiently stable and different from toptotypical *fieldi* to warrant a varietal name.

## SEMIOTHISA FIELDI var. COMSTOCKI var. n.

Palpi, head, legs, thorax and ground color of wings light tile buff (Ridgway color); maculation, Hay's brown. Compared with *fieldi* Swett the t.a. line has a tendency to curve inward from the upper edge of the cell and although very faint above that point, in some specimens almost reaches the costa. In *fieldi* the line is heavy and stops at the cell. The t.p. line is heavy in both insects but in *comstocki* there is a narrow, smooth gray line separating the line from the distad shade and there is a smooth wide band of lighter scales following that shade. In *fieldi* these light lines are usually absent but when present are rough and irregular. The annulate discal spots in *fieldi* are distinct, in *comstocki* very faint.

Beneath, *fieldi* is darker and more heavily irrorate. *Comstocki* has a distinct tendency toward albinism, in two specimens of the type series the maculation is merely indicated. Expanse nearly identical, 20-22 mm.

There are slight but constant differences in the male genitalia which may indicate that these are separate species but that problem must wait their breeding. The outer central section of the valve connecting the costa with the sacculus, in *fieldi*, leaves the costa in a smooth, deep curve and makes a central rounded projection before going to the sacculus, in *comstocki* this leaves the costa at an angle and goes to a point before angling to the sacculus. The octivals are pointed in *comstocki* and rounded in *fieldi*, the excavation in *comstocki* is shallow and broad, in *fieldi* deep and moderate and the plate in *fieldi* is narrow and long (al-



most 2 mm.) and in *comstocki* short and squat (less than 1½ mm.).

*Holotype* male, Independence, California June 8, 1938 (Dr. J. A. Comstock. coll.) in the collection of the Los Angeles County Museum.

*Allotype* female same data, May 14, 1936 and in the collection of Grace H. and John L. Sperry.

*Paratypes* 4 males, 1 female, same data, April 14 to May 14; 1 female Lone Pine, Calif. June 22, 1937 (Dr. J. A. Comstock, coll.); 1 male, Cartago, Calif. July 2, 1940 (C. Henne) and in the collection of the Los Angeles County Museum and the Sperry collection.

It gives me great pleasure to name this beautiful insect in honor of our friend Dr. John A. Comstock, on his retirement from the Los Angeles Museum, as a slight token of the esteem in which we hold him and with the hope that increasing leisure may find his tent more often pitched in the pleasant places.

Among the many interesting geometrids taken by the Martins and Dr. Comstock in the Santa Rita Mountains of Arizona in 1947 there was a good series of a well marked species of *Nepterotæa*, McD. As *N. diagonalis* Cass. is missing from the Sperry collection it was again necessary to impose on the good nature of our friend, Dr. Nathan Banks for comparison with the type in the Museum of Comparative Zoology and through his kindness the author is enabled to describe

NEPTEROTÆ DOROTHEATA, sp. n.

The ground color of legs, abdomen, thorax and wings is an ecru drab, formed by an admixture of light gray and dark brown scales, the depth of color depending on the percentage of brown scales. Palpi short, porrect, heavily scaled in dark brown. Front light over clypeus with broad black-brown band filling the center of the front between the eyes, upper quarter and vertex of the ground color. Male antennæ dark brown, moderately pectinated, apex dentate, female antennæ very shortly pectinate, color the same. Maculation black brown.

*Primaries:* T.a. line narrow, from costa at  $\frac{1}{4}$  out at right angles, diffuse to middle of cell, thence narrowing to a hair line angles sharply back to inner margin  $\frac{1}{5}$  out from the base. A weak median line from slightly beyond mid costa curves out and inward through the distinct, round, black discal dot, thence subparallel to t.a. line to inner margin at  $\frac{1}{2}$ ; t.p. line diffuse, irregular, heavier than the other lines starts at  $\frac{3}{4}$  out on costa at right angles, goes to vein 7 forming a sharp outward tooth at that point



thence curving back to within a mm. of the median line and parallel thereto to inner margin. There is a short triangular dash on the costa halfway between the t.p. line and the apex. In some specimens there is a very light hair line parallel to and distad about  $\frac{1}{2}$  mm. from the t.p. line. There are three or four irregular dark dashes above vein 4, parallel to and between the veins in the sub-terminal area. There is an irregular, dark, broken terminal line interrupted at the veins. Fringes of ground color, slightly darkened at ends of veins.

*Secondaries*: Variable, t.a. line usually indicated or present from end of t.a. on primaries curving across wing to inner margin at  $2/5$ . T.p. line continues from primaries, curves close outside distinct discal dot and reaches inner margin 1 mm. beyond t.a. line. There are usually indications of two dim subparallel lines beyond the t.p. line, a scalloped terminal line, fringes as in primaries. The ground color of the wings in the female is darker than in the male.

Beneath: Ground color is much lighter, in some specimens almost white, discal dots present on all wings, usually immaculate, there is sometimes indication of the maculation of the upper side along the costa. Expanse both sexes, 20-22 mm.

This species appears closest to *obliviscata* B. & McD. is about the same size and flies in the same part of Arizona but is distinguished from that species by the definite maculation. The male genitalia is markedly different, the harpe in *obliviscata* consisting of a bunch of a dozen or more heavily curved subequal spines whereas that of *dorotheata* is made up of a single long, heavy curved spine backed by two or three shorter spines. The aedeagus in *obliviscata* is armed ventrally at the apex with a single short spine and that of *dorotheata* is simple. The maculation separates *dorotheata* from *memoriata*. Pears, and *polingi* Cass. and Dr. Banks writes that "the type specimen of *diagonalis* Cass. is but little marked, the black dot, and beyond the oblique line is faint, the fore wing is narrower and longer, the black terminal line is continuously black, not interrupted. Beneath, the fore wing is plainly darker than the hind wing." *Dorotheata* should be placed in the genus between *obliviscata* B. & McD. and *memoriata* Pears.

*Holotype* male Madera Canyon, Santa Rita Mts., Ariz., Aug. 2, 1947 (Dr. J. A. Comstock and Lloyd M. Martin) and in the collection of the Los Angeles County Museum.

*Allotype* female same data, July 24, 1947 and in the collection of Grace H. & John L. Sperry.

*Paratypes* 14 males, 11 females same data, July 16 to Aug. 29, 1946, 47 and in the collections of the Los Angeles County Museum, U. S. National Museum, Canadian National Museum, Mu-



seum of Comparative Zoology, American Museum of Natural History, British Museum, French National Museum and the Sperry collection.

It gives me great pleasure to name this interesting species in honor of our friend Mrs. Lloyd M. Martin. I truly believe that there must be a special place in heaven, reserved for the wives of entomologists as a part payment for vacation trials and tribulations suffered while helping a rabid husband to bring from the wilderness a grain or two of new information to add to the world's store. So it gives me a special pleasure to name a species of her own collecting for such an one of our friends. May there be many more good trips, Dorothy, to fill in the blank spots in our knowledge of the fauna of the Southwest.

Through the kindness of Mr. Lloyd M. Martin of the Los Angeles County Museum and one of our best known Southern California lepidopterists, Mr. M. L. Walton, the author has been privileged to examine a short series of one of the most beautiful geometrids which has been seen in some time. These four specimens taken by Mr. Walton in the Chiracahua Mts. of Southern Arizona represent a species unknown to the author and in due course will probably require a new genus to receive them. For the time being the author ventures to describe this species under the old genus *Azelina* Gn. which should be broad enough to receive almost anything in this group.

*AZELINA WALTONARIA* sp. n.

Male antennæ bipectinate, apex simple, female antennæ dentate. Palpi short, scarcely reaching beyond the front, upturned, heavily scaled, third joint short, close scaled. Thorax clothed with long silky hair, parting this shows it loose scaled beneath. Abdomen close scaled with short lateral tufts. Front smooth scaled, tongue developed, fore tibia unarmed, all spurs present, hind tibia of male swollen with strong hair pencil.

Head, front and vertex ochreous-buff, antennæ black-brown, thorax bister, abdomen light mineral-gray. Fore wing, basal area chestnut brown dusted with violet gray scales along costa and inner margin and mixed with white scales along inner margin and below cell. T.a., a thin black line, starts  $\frac{1}{4}$  out on costa, goes diagonally out toward tornus with outward tooth in cell, curves sharply inward from vein 2 and outward to vein 1 thence inward to inner margin at  $\frac{4}{10}$  from the base, edged inwardly, irregularly with gray and white scales. The median area is liver brown. T.p. line very thin, black, starts  $\frac{1}{5}$  out from apex on costa at right angles, curves in from vein 8 and out to just above vein 6 making a small double pointed, outward tooth at the vein, curves sharply back and down to vein 4, thence in scallops, bulging out between



the veins, to inner margin at one third from anal angle, the deepest scallop is between veins 3 and 4. The beginning of a subterminal scalloped black line 2 mm. out from apex on costa, fades out at vein 6. Subterminal area is white except the apical area beyond the s.t. line which is light red brown, and a broad spot between veins 2 and 4 distad of the t.p. line and a diffused shading of lines 2, 3 and 4 subterminally, which are rose brown. The white area is stained with yellowish scales and the whole outer area irrorated with black, in irregular lines subparallel to outer margin, these irrorations lighter toward the tornus. Discal spot annulate, violet gray center and irregular surrounding black ring. Fringe white with wide, dark checks at ends of veins.

Secondaries, basal half of wing covered with long hairs. Bright apricot orange, fading out above the cell to gray white, with a dark area of purple gray scales below the cell to the junction with vein 2 thence to t.p. line.

T.a. line absent, t.p. line starts at inner margin 3 mm. from anal angle narrow, bright brown and well marked to vein 2, thence fading to red orange and almost lost in the ground color, scalloped between the veins. The t.p. on the under side of the secondaries, which is much heavier than that on the upper side and curves nearer the outer margin above vein 2, shows through.

The tornal area between the t.p. line, vein 2 and the margins is white irrorated with brown. Fringes yellowish white, slightly darker at ends of veins. Discal spot beneath shows dimly through. There is no terminal line on either wing.

Beneath, ground color pale grayish-blue-violet on both wings, laved with yellow brown over upper half of fore wing to t.p. line and between veins 2 and 4 and at apex on primaries. T.p. line of primaries as on upper side but dim, as is the black discal spot which is not annulate. Secondaries sprinkled lightly with yellowish brown between base and t.p. line except for an unshaded band along inner margin. T.p. line narrow bright brown, curved irregularly from  $1\frac{1}{2}$  mm. above inner margin 3 mm. from anal angle goes subparallel to outer margin to costa, with an inward scallop between veins 4 and 6; veins outlined in straw-yellow. Fringes as above. Discal spot black, distinct. Expanse, male 37 mm. female 40 mm.

The maculation of the female is the same, but the discal spot on the under side of the secondaries is duller.

*Holotype*, male, Chiricahua Mts., Arizona, near Ranger Station, Oct. 11, 1948 (M. L. Walton, coll.) and in the collection of Grace H. & John L. Sperry.

*Allotype*, female, same data, in the Walton collection.



*Paratypes*, 2 females, same data, and in the collection of the Los Angeles County Museum and collection Walton.

There is no species in the North American fauna with which the author is acquainted which remotely resembles *waltonaria*, perhaps the closest of which I have knowledge is *Gonodontis paliscia*, Prout from South Africa. The author is not satisfied that the genus is correct, but the pectinate antennæ of the male, the dentate antennæ of the female, the swollen male hind tibia with hair pencil and the silky hair which makes up the vestiture of the thorax in both sexes seem to definitely prevent its inclusion in *Pero*, *Stenaspilates* or *Gonodontis*. The wing venation insofar as can be seen without denuding the wings would fit in any of the aforementioned genera. For the time being, the author will place it, in the Sperry collection, immediately before the genus *Stenaspilates*, Pack.

It seems fitting that such a beautiful species should be named in honor of a lepidopterist who, over so many years, has collected such a large number of interesting species in out-of-the-way corners of the Southwest and in so doing has greatly enhanced our knowledge of the lepidoptera of this area. It gives me great pleasure to name this fine species in honor of our colleague, Mr. M. L. Walton of Glendale, California.

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1949. "Southwestern Geometrid notes and new species." *Bulletin of the Southern California Academy of Sciences* 48, 7–12.

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