

**THE SPECIES OF ODONTOPHOTOPSIS
(HYMENOPTERA).**

BY HENRY L. VIERECK.

Of all the Mutillidæ the nocturnal species are least known, because of their habits. Both sexes are on record of only one North American species. The males can be secured as readily as night flying moths, with the aid of a light; but the finding of the females has been more accidental than otherwise. While in the Upper Sonoran Zone of New Mexico, at Alamogordo, Otero County, the writer obtained many males, which used to fly into the room against the lamp, one or two at a time, until after midnight. Not one female was seen, though all likely places were examined.

Until the sexes of the species are known, our classifications of these insects can be temporary only; it is to be hoped that entomologists living where these insects make their homes, will endeavor to discover the missing sexes.

The species of the genus as those in the allied genera vary considerably in the structure and sculpture of the males, affording quite a number of characters for separating them. Some of the characters of the species described in the following pages are common to all. The clypeus is concave and polished. The first joint of the flagellum is three fourths the length of the second, a little more or less, the other joints subequal. There is a variable impression on each side of the pronotum, with usually a subtle appearance. The sculpture of the dorsum is always more separated medially than near the sides. The postscutellum usually has a sculpture like that on the scutellum, with a tendency to become rugulose. A longitudinal ridge bisects the area on the disc of the metathorax. The structure of the mesopleura is of a uniform character. Beyond the second the segments of the abdomen are finely sculptured. In color the species do not deviate very much from each other; the mandibles are invariably tipped with black or dark brown.

Recent studies have revealed structural characters previously not used in descriptions, of these the function is not known. A few explanations concerning some of the terms employed may not be super-

fluous. Area refers to the enclosure on the disc of the metathorax always present, though sometimes much abbreviated. Felt lines, mean the furrows or impressed lines, filled with appressed pubescence, thus >>>>. Subtle area is an enclosure on the second abdominal segment, sometimes hidden by the overlying first segment.

The species are rare in collections. During several weeks of lamp light collecting at Alamogordo, New Mexico, only one specimen was captured. Only one specimen is on record of *venustus*, *aulus*, *adonis*, *thamyra*, *mellicausa* and *clandestinus*. Unless otherwise stated, the specimens on record, in this paper, are to be found in the collection of the American Entomological Society and the Academy of Natural Sciences, Philadelphia. For the privilege of examining specimens in the United States National Museum collection, I am indebted to Dr. W. H. Ashmead.

Key to the Species.

- Head bulged behind the eyes, quite quadrate; large species.....1.
 Head more triangular, sloping behind the eyes.....3.
1. Process of mesosternum large, heavy, gradually fusing with the mesosternum, mandibles terminating in a flattened angled portion.
venustus (Blake).
 Process of mesosternum a short sharp tooth or spur, mandibles not very distinctly flattened near the end, straight.....2.
2. First abdominal segment rather coarsely punctured and closely, legs dark.
tapajos (Blake).
 First segment with small rather sparse punctures, legs light..**aulus** (Blake).
3. First segment slender, not very broad at apex, a distinct constriction between it and the next segment12.
 First segment broad, very broad at apex, sessile, no distinct constriction...4.
4. Large species, with a pygidial area bounded by a sharp ridge; 15 mm.
adonis (Fox).
 Pygidial area poorly defined or absent; 13 mm. long or less5.
5. Species 8 mm. and over, processes strong6.
 Species 8 mm. and less, processes weak.....7.
6. Last segment with a poorly defined pygidial area, insect dark testaceous.
inconspicuus (Blake).
 Last segment without a pygidial area; insect pale testaceous.
acmaeus n. sp.
7. Processes formed by the mesosternum being produced into a more or less pronounced angle on each side of the media furrow, anteriorly the processes are nearly contiguous, species dark8.
 Processes simply short, sharp teeth, species pale.....11.
8. Strongly punctured throughout**sarpedon** (Fox).
 Moderately, rather sparsely punctured.....9.

9. Almost black **thamyras** (Fox).
 Castaneous 10.
10. Processes very pronounced, second segment broad, legs dark. **subtenuis** n. sp.
 Processes not pronounced, second segment slender, legs pale. **trunculus** n. sp.
11. Punctures of first two segments strong, abdomen broad **crucis** n. sp.
 Punctures of first two segments weak, abdomen slender ... **alemon** (Fox).
12. First and second abdominal segments polished, impunctate ... **sercus** n. sp.
 First and second abdominal segments more or less, but always, distinctly punctured 13.
13. Processes broad and blunt 14.
 Processes short spurs 16.
14. Pubescence golden **exogyrus** Viereck.
 Pubescence white 15.
15. Second segment coarsely punctured, processes broadly truncate. **clandestinus** Viereck.
 Punctures on second segment small, widely separated, processes blunt. **alamonis** n. sp.
16. Large, 9 mm. and over 17.
 Smaller, 8 mm. and less 19.
17. Mandibles short, broad and heavy **mellicausa** (Blake).
 Mandibles long and slender 18.
18. Very dark castaneous **avellanus** n. sp.
 Pale testaceous 18½.
- 18½. Space between ocelli black **concolor** (Cress.).
 Space between ocelli concolorous with head **brevicornis** Fox.
19. Dark castaneous 20.
 Pale castaneous 21.
20. Wings strongly brown **fallax** n. sp.
 Wings pale, faintly yellowish **indotatus** n. sp.
21. Antennæ pale yellowish 22.
 Antennæ dark 23.
22. Abdomen slender, first submarginal cell narrow, about four times as long as high **terrītus** (Cockerell).
 Abdomen broad, first submarginal cell broad, about twice as long as high. **augustus** n. sp.
23. Legs dark **succineus** Viereck.
 Legs pale **delodontus** n. sp.

Odontophotopsis venustus (Blake).

Photopsis venustus Blake, Tr. Am. Ent. Soc., xiii, 270, ♂, 1886.

Mutilla pretiosissima Dalla Torre, Cat. Hym., viii, 73, ♂, 1897.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Arizona.

Odontophotopsis tapajos (Blake).

Agama tapajos Blake, Tr. Am. Ent. Soc., iii, 262, ♂, 1871.

Agama astynax Blake, *ibid*, vii, 254, ♂, 1879.

Photopsis tapajos Blake, *ibid*, xiii, 269, ♂, 1886.

Photopsis astynax Blake, *ibid*, xiii, 272, ♂, 1887.

Mutilla tapajos Fox, *ibid*, xxv, 266, ♂, 1899.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Texas. Two specimens.

Odontophotopsis aulus (Blake).

Agama aulus Blake, *Tr. Am. Ent. Soc.*, iv, 75, ♂, 1872.

Photopsis aulus Blake, *ibid*, xiii, 270, ♂, 1886.

Mutilla aulus Fox, *ibid*, xxv, 266, ♂, 1889.

Type, Coll. Am. Ent. Soc., Phila. *Type locality*, Texas.

Odontophotopsis adonis (Fox).

Mutilla adonis Fox, *Tr. Am. Ent. Soc.*, xxv, 265, ♂, 1899.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Las Cruces, New Mexico.

Odontophotopsis acmaeus n. sp.

Length, ♂, 9 mm.—*Head*.—Polished, punctures sparse and fine, median impressed line on the front distinct in greater part. Distance between posterior ocelli about twice that between them and the anterior ocellus; distance between posterior ocelli equal to or a little less than that between them and nearest eye margin. Lower margin of the eyes almost contiguous with the insertion of the mandibles. Mandibles elbowed, slender beyond the bend, not deeply emarginate on the lower margin which is merely undulate, without a strong tooth.

Thorax.—Prothorax rugose. Punctures of dorsulum separated, almost contiguous; innermost furrows strong, lateral furrows faint, starting about one-third the distance from the anterior margin. Scutellum closely rugose; postscutellum indistinctly sculptured, rugulose. Propleura rugose, in part simply roughened; mesopleura with shallow punctures on depressed part, bulged part with shallow contiguous punctures, posterior border smooth and polished. Area not symmetrical, rather oblong. Meshes of the reticulation, on metathorax, large, the raised lines defining them, not strong. A short abscissa on the radial nervure the only trace of a second cubital cell outline, first submarginal cell like in *exogyrus*; second recurrent entirely, subdiscoidal almost, obliterated. Transverse median nervure originating a little beyond the basal nervure.

Abdomen.—Petiole with punctures not sharply defined, close together and shallow. Second segment very finely, sparsely punctured. Felt line about one-half length of segment, on ventral segment a little shorter. Subtle area hidden.

Color.—Pubescence white, dorsally tinted with yellowish. Tegument pale testaceous, between ocelli almost black, antennæ paler than the body, legs very much paler. Stigma testaceous, nervures very pale.

Type, -Coll. U. S. Nat. Mus. Wash. *Type locality*, Arizona. Arizona (2304), two males.

Odontophotopsis inconspicuus (Blake).

Photopsis inconspicuus Blake, *Tr. Am. Ent. Soc.*, xiii, 272, ♂, 1886.

Mutilla infelix Dalla Torre, *Cat. Hym.*, viii, 50, ♂ 1897.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, California. California, two males, El Chinche, Lower California. September, 1893, (Eisen), one male.

***Odontophotopsis subtenuis* n. sp.**

Length, ♂, 6.5 mm.—*Head* with punctures irregularly placed, strong, medium sized, rather close together, no distinct median impressed line. Distance between posterior ocelli about twice the distance between them and the anterior ocellus; distance between posterior ocelli distinctly less than that between them and nearest eye margin. Malar space distinct, about one-half mm. high. Mandibles narrow, gently curved, slightly emarginate, teeth weak.

Thorax.—Prothorax closely rugose. Punctures on dorsulum separated, not far from contiguous, furrows only present on posterior half. Scutellum shining, almost reticulate; postscutellum indistinctly sculptured, rugulose. Propleura almost punctured, rugose, hardly any smooth space. Impressed portion of mesopleura with closely arranged punctures on the superior half, on lower half smooth; bulged part not strongly so, with close shallow punctures, rugose in appearance. Disc of metathorax with a rather oblong, irregular area. Meshes of the reticulation of metathorax moderately large, not strongly outlined. Only an indistinct abscissa on radial and subdiscoidal nervure; first submarginal cell not much more than twice as long as high; transverse median nervure interstitial with basal nervure.

Abdomen.—Petiole with only a few very shallow punctures on a shining surface. Second segment with sparse small punctures; the felt line on dorsal segment more than one half length of the segment, the felt line on ventral segment about one-half the length of the dorsal line.

Color.—Pubescence white, that of the felt lines dark, grayish. Testaceous; antennæ and legs very much darkened, dull brownish; stigma dark brown, nervures paler.

Remarks:—One specimen has the transverse median nervure originating beyond the basal nervure.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Texas. Texas, two males. Georgia, one ♂.

***Odontophotopsis sarpedon* (Fox).**

Mutilla sarpedon Fox, Trans. Am. Ent. Soc., xxv, 267, ♂, 1899.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Texas. Texas, eight males.

***Odontophotopsis thamyra* (Fox).**

Mutilla thamyra Fox, Trans. Am. Ent. Soc., xxv, 267, ♂, 1899.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Texas.

***Odontophotopsis trunculus* n. sp.**

Length, ♂, 6.5 mm.—*Head*.—Punctures strong, medium sized, close together on front, rather sparse beyond, no median line. Distance between posterior

ocelli less than twice the distance between them and anterior ocellus; distance between posterior ocelli equal to or a little greater than that between them and nearest eye margin. Malar space distinct, less than one-half mm. high. Mandibles narrow, gently curved, slightly emarginate, teeth not strong.

Thorax.—Prothorax shining, crudely punctured. Dorsulum with strong, almost contiguous punctures, grooves present only on posterior half. Scutellum rugose; postscutellum indistinctly sculptured, rugulose. Propleura with a large shining area, shining rugulose; bulged portion not strong, closely reticulate or nearly, depressed part smooth and shining. Area not sharply defined, oblong. Meshes of the reticulation on metathorax large, not strong nor regular.

Wings.—Trace of a third transverse cubitus, with a trace of a nervure at right angles to it; second recurrent nervures absent, subdiscoidal nervure delicate. First submarginal cell four times as long as high. Transverse median nervure interstitial with basal nervure.

Abdomen.—Petiole with only a few very shallow punctures on a shining surface. Punctures on second segment sparse and small, felt line about one-half length of segment, on ventral segment a little shorter. Exposed part of subtle area semicircular.

Color.—Pubescence white, that of the felt lines dark. Pale castaneous, a spot on each side of pronotum and between ocelli black, antennæ and legs testaceous. Stigma and nervures darkened testaceous.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Texas. Texas.

Odontophotopsis crucis n. sp.

Length, ♂, 7 mm.—*Head*.—Medium, strong uniform punctures, well separated, median line partly formed on front. Distance between posterior ocelli less than twice the distance between them and anterior ocellus; distance between posterior ocelli about equal to that between them and nearest eye margin. No malar space. Mandibles broadly emarginate, tooth short and rounded, elbow distinct.

Thorax.—Prothorax closely rugose. Punctures of dorsulum quite separated, grooves starting anterior to the middle. Scutellum coarsely punctured. Postscutellum indistinctly sculptured, rugulose. Propleura coarsely sculptured, rugulose. Propleura coarsely sculptured, almost reticulate, no smooth area. Mesopleura with bulged part pronounced, reticulated; depressed portion punctured and smooth in part. Area poorly defined, almost obsolete. Meshes of reticulation on metathorax large, strong.

Wings.—A very faint third transverse cubitus, second recurrent nervure entirely obliterated, subdiscoidal nervure indistinct. First submarginal cell four times as long as high. Transverse median nervure interstitial with basal nervure.

Abdomen.—Punctures of petiole sparse and shallow. Second segment with fine sparse punctures, felt line about one-half length of segment, on ventral segment a little shorter. Subtle area hidden.

Color.—Nearly all pubescence white. Testaceous; antennæ and legs pale, black spot between ocelli, abdomen darker than the rest of the insect. Stigma testaceous, nervures pale.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Las Cruces, N. M. Las Cruces, July 8th (T. D. A. Cockerell).

Odontophotopsis sercus n. sp.

Length, ♂, 12 mm.—*Head*.—Punctures distinct, sparse, closer on front than beyond, the median furrow represented by a pit. Distance between posterior ocelli a little less than twice that between them and anterior ocellus, equal to or a little less than that between the lateral ocellus and nearest eye margin. No malar space. Mandibles heavy, emargination a sharp incision, tooth strong and distinct.

Thorax.—Prothorax closely, rather coarsely rugose. Dorsulum with very coarse contiguous and almost contiguous punctures, furrows starting on anterior third. Scutellum and postscutellum very coarsely punctured. Propleura closely rugose, almost punctate, hardly any smooth area. Mesopleura with bulged portion prominent, punctured, the punctures not sharply defined, but rather large and close together, all of the depressed portion punctured. Area sharply defined, elliptical. Meshes of reticulation on metathorax very sharply defined.

Wings.—Third transverse cubitus and second recurrent nervure absent, subdiscoidal nervure faint, first submarginal cell nearly four times as long as high. Transverse median nervure interstitial with basal nervure.

Abdomen.—Petiole highly polished, punctures sparse and very minute. Second segment highly polished, punctures sparse and minute, felt line on dorsal segment as usual, not a trace on ventral segment.

Color.—Pubescence yellowish, except on metathorax and petiole where it is white. Bright castaneous; antennæ and legs pale testaceous. Stigma testaceous, nervures pale. Black between ocelli.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Lower California. Lower California, one specimen.

Odontophotopsis exogyrus Vier., Proc. Acad. Nat. Sci. Phila., 1902, p. 738, ♂.

Type, Coll. Acad. Nat. Sci. Phila. *Type locality*, La Jolla, California. Two males, August, 1901 (T. D. A. Cockerell).

Odontophotopsis clandestinus Vier.—Proc. Acad. Nat. Sci., Phila., p. 740, ♂, 1902.

Type, Coll. Acad. Nat. Sci. Phila. *Type locality*, Mesilla, New Mexico. One male at light, July 31st (T. D. A. Cockerell).

Odontophotopsis alamonis n. sp.

Length, ♂, 12 mm.—*Head*.—Punctures sparse and shallow, no distinct median line. Distance between posterior ocelli equal to twice the distance between anterior and posterior ocellus. Distance between posterior ocelli greater than that between them and nearest eye margin. Malar space less than one-half mm. high. Mandibles like in *exogyrus*—the terminal portion broader.

Thorax.—Prothorax with rugosities, almost reticulate. Punctures of dorsulum strong, irregularly separated grooves starting on anterior third or nearly. Scutellum and postscutellum dull, rugose. Propleura rugose, a long narrow smooth area near posterior border. Mesopleura with the bulged portion rather prominent and coarsely reticulated. Depressed part smooth and polished, punctured

in part. Area almost quadrate, sharply defined in part. Meshes of reticulation on metathorax large, sharply defined. Wings—first submarginal cell little more than twice as long as high, otherwise like *sercus*. Transverse median nervure interstitial with basal nervure.

Abdomen.—Punctures coarse and close together. Second segment dull, punctures small, not far apart, in felt lines like *sercus*, subtle area broad at base, pointed at apex.

Color.—Pale castaneous, antennæ and greater part of legs pale testaceous. Spot between ocelli, a lateral streak on second abdominal dorsal and ventral segments and part of four posterior femora black or blackish. Stigma almost black, nervures very pale testaceous. Pubescence nearly entirely white.

Type, Coll. Acad. Nat. Sci. Phila. *Type locality*, Alamogordo, New Mexico. One ♂, Alamogordo, May 15, 1902. Expedition of Academy of Natural Sciences, 1902.

***Odontophotopsis mellicausa* (Blake).**

Agama mellicausa Bl., Tr. Am. Ent. Soc. Phila., iii, 240, ♂, 1871.

Photopsis mellicausa Bl., ibid., xiii, 262, ♂, 1886.

Mutilla mellicausa Fox, ibid., xxv, 255, ♂, 1889.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Texas.

***Odontophotopsis avellanus* n. sp.**

Length, ♂, 13 mm.—*Head*.—Punctures very distinct, contiguous and almost contiguous on front, well separated beyond, median impression rather shallow. Posterior ocelli with a distance between them which is twice as great as that between them and anterior ocellus, and a little greater than that between them and nearest eye margin. No malar space. Mandibles elbowed almost to a L, the terminal portion very slender and narrow, emargination distinct, but not deep, tooth an acute angle.

Thorax.—Sculpture of prothorax closely rugose. Dorsulum with strong punctures, nearly contiguous, grooves strong, starting on anterior third. Scutellum punctured, punctures contiguous. Postscutellum indistinctly sculptured, rugulose. Propleura closely rugose, almost punctured, apparently no smooth area. Bulged portion of mesopleura distinct, covered with shallow punctures close together, depression punctured. Only a remnant of an area at base of metanotum. Meshes of the reticulation on metathorax large, very sharply defined. Wings—a very faint third transverse cubitus, otherwise like *sercus*. Transverse median nervure interstitial with basal nervure.

Abdomen.—Petiole much like in *alamonis*. Punctures of second segment small and separated, numerous; felt lines as usual, on ventral segment reduced almost to a spot. Subtle area large, semicircular in outline.

Color.—Dull castaneous. Antennæ darkened, brownish, legs pale testaceous. Stigma testaceous, nervures pale testaceous. Pubescence nearly white, felt line dark.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Texas. One ♂, Texas.

Odontophotopsis concolor (Cress.).

Mutilla concolor Cress., Proc. Ent. Soc. Phila., iv, 439, ♂, 1865.

Agama concolor Blake, Tr. Am. Ent. Soc. Phila., iii, 262, ♂, 1871.

Photopsis concolor Blake, ibid., xiii, 265, ♂, 1886.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Colorado. Two males, Colorado. One male, Las Cruces, New Mexico, July 8th (Cockerell). One male, Lewiston, Idaho.

Odontophotopsis brevicornis (Fox).

Mutilla brevicornis Fox, Tr. Am. Ent. Soc. Phila., xxv, p. 255, ♂, 1889.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Texas. Four males, Texas. One male, Montana. One male, Fort Grant, Ariz., July 16th (H. G. Hubbard). Coll. U. S. N. M.

Odontophotopsis fallax n. sp.

Length, ♂, 9 mm.—*Head*.—Punctures well separated, rather uniformly placed, good sized and shallow, shallow median impression; paratype with a pit. Posterior ocelli with a distance between them which is less than twice the distance between them and anterior ocellus, and distinctly less than that between them and nearest eye margin. Hardly any malar space. Mandibles strongly elbowed, emargination deep, angle strong.

Thorax.—Prothorax rugose, nearly like in *trunculus*. Dorsulum with distinct irregular separated punctures, parapsidal grooves extending to anterior margin. Lateral groove one-half length of parapsidal groove. Scutellum and postscutellum with punctures close together. Propleura widely rugose, sculpture irregular, hardly any smooth space. Bulged portion of mesopleura sharply defined by a polished groove, with shallow punctures close together, depressed portion punctured in greater part, inferiorly smooth and shining. Area of metathorax almost oblong, poorly defined. Meshes of metathorax rather irregular, not sharply defined. Wings—first submarginal cell about three times as long as high. Trace of a third transverse cubitus, subdiscoidal nervure strong, but no trace of a recurrent nervure on it. Transverse median nervure interstitial with basal nervure.

Abdomen.—Petiole similar to *alamonis*. Second segment polished, punctures small and sparse, felt lines on dorsal segments as usual, on ventral segment about one-half as long as on dorsal segment. Subtle area hidden.

Color.—Castaneous, antennæ darkened brownish, legs a little paler than body. Stigma dark brown, nervures a shade paler. Pubescence yellowish.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Nevada. Two males from Nevada. Paratype 7 mm. in length.

Odontophotopsis indotatus n. sp.

Length, ♂, 10 mm.—*Head*.—Punctures strong, contiguous or nearly on front, well separated beyond, median depression a pit. Distance between posterior ocelli a little less than twice the distance between them and anterior ocellus, a little greater than that between them and nearest eye margin. No malar space. Mandibles similar to *fallax*.

Thorax.—Prothorax closely rugose. Dorsulum with punctures uniform in size, deep and irregularly separated, parapsidal groove originating somewhat anterior to middle, lateral groove more posterior. Punctures on scutellum and postscutellum irregular and close together. Propleura closely rugose or rugulose. Mesopleura with bulged portion distinctly covered with contiguous rather large shallow punctures, shallow portion smooth and shining, sparsely punctured. Area abbreviated, apparent only at base. Meshes of reticulation on metathorax large, sharply defined, shallow. Wings—first submarginal cell as in *fallax*, subdiscoidal nervure distinct, but no trace of an abscissa on it, nor on the radius, where the third transverse cubitus should be. Transverse median nervure originating beyond the basal nervure.

Abdomen.—Punctures of petiole not coarse, sparse. Second segment polished, punctures numerous, small and well separated, felt line as usual, on ventral segment merely a dot.

Color.—Dull castaneous, antennæ and four posterior legs blackish. Stigma dark brown, nervures pale testaceous. Pubescence on metathorax, petiole and second segment white, otherwise faintly yellowish.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Texas. One male from Texas.

***Odontophotopsis territus* (Ckll.).**

Photopsis territus Ckll., Ent. News, v, 200, ♂, 1894.

Mutilla territus Fox, Trans. Am. Ent. Soc. Phila., xxv, 255, ♂, 1899.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Las Cruces, New Mexico. Two males, Las Cruces (Wootton). One male, Las Cruces, August (Cockerell).

***Odontophotopsis augustus* n. sp.**

Length, ♂, 7 mm.—*Head*.—Punctures obscure, median depression a pit. Distance between posterior ocelli about equal to twice the distance between them and anterior ocellus and a little greater than that between them and nearest eye margin. No malar space. Mandibles gently curved, excised, the tooth a blunt short angle.

Thorax.—Prothorax rather coarsely rugose. Punctures of dorsulum sparse and small, parapsidal groove slight, originating anterior to middle. Lateral groove indistinct. Scutellum and postscutellum rugose, almost rugulose, dull. Propleura almost reticulate, large part roughened. Mesopleura with bulged portion not very distinct, with a close reticulation continued on the depressed portion above, the depressed part being smooth and shining inferiorly. Area not sharply defined, almost quadrate. Meshes moderately large, sharply defined. Wings—first submarginal cell more than twice as long as high, but not three times, subdiscoidal nervure very faint, no abscissa on it nor on the radius. Transverse median nervure interstitial with the basal.

Abdomen.—Punctures on petiole coarse and closely arranged. Punctures on second segment sparse and very small, felt line as usual, on ventral segment one-half as long as on dorsal segment. Subtle area tapering like the end of a finger.

Color.—Testaceous, antennæ and legs very pale testaceous, black spot between ocelli. Stigma testaceous, nervures pale. Pubescence white.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, St. Augustine, New Mexico. One ♂ from St. Augustine, New Mexico (Cockerell 2126).

Odontophotopsis succineus Vier., Proc. Acad. Nat. Sci. Phila., p. 741, ♂, 1902.

Type, Coll. Acad. Nat. Sci. Phila. *Type locality*, La Jolla, California. Two males taken in August at La Jolla (T. D. A. Cockerell).

Odontophotopsis delodontus n. sp.

Length, ♂, 8 mm.—*Head*.—Punctures numerous on front, with depression a shallow pit. Distance between posterior ocelli a little less than twice the distance between them and anterior ocellus, and a little less than that between them and nearest eye margin. No malar space. Mandibles gently curved, excised, the tooth a short blunt angle.

Thorax.—Prothorax closely rugose. Punctures on dorsulum strong, irregularly separated, parapsidal grooves arising about at middle, lateral grooves almost equal in length to parapsidal grooves. Scutellum and postscutel with irregular punctures, almost rugose. Propleura coarsely sculptured, rugose, in part smooth. Bulged portion of mesopleura rather distinct, closely punctured, depressed portion sparsely punctured. Area almost reduced to a remnant. Meshes of reticulation on metathorax regular, sharply defined. Wing—first submarginal cell four times as long as high. Subdiscoidal cell distinct, otherwise like *indotatus*. Transverse median nervure interstitial with basal nervure.

Abdomen.—Petiole much like *indotatus*. Punctures numerous, small, well separated, felt line as usual, on ventral segment a dot, subtle area broad, semicircular.

Color.—Testaceous, antennæ and legs pale testaceous, not much black between ocelli. Stigma brown, nervures pale testaceous.

Type, Coll. Am. Ent. Soc. Phila. *Type locality*, Arizona. One male, Arizona.

NOTES AND ADDITIONS.

A study of that portion of Mr. Melander's "Notes on North American Mutillidæ, with Descriptions of New Species," which relates to the genus *Odontophotopsis*, revealed the following additional species—all males:

hebes, New Mexico.

cockerelli, W. Texas.

simpliciventris, Texas.

wheeleri, Austin, Texas.

grata, La Cueva, Organ Mts., New Mexico.

pudica, Pressy's Camp, Wenass Valley, Washington.

westcottii, Albuquerque, New Mexico.

erebus, Mesilla Park, New Mexico.

hamata, La Cueva, Organ Mts., New Mexico.

trita, Las Cruces, New Mexico.

Two co-types and seven homotypes of *danaus* in Coll. Am. Ent. Soc. are *Photopsis* and not *Odontophotopsis*.

Type and metatype of *bellerophon* have no crenulate ridge on mesosternum, which is simple; therefore they belong to *Photopsis*.

O. trunculus n. sp. may be the same as *simpliciventris* Mel.

O. mellicausa Blake has a fringe of plumose hairs on edge of second and third segments, some plumose hairs on disc of third segment, beyond the hairs are simple. To this extent the types disagree with Mr. Melander's interpretation.

The contiguous punctures of mesonotum and the pit on the front instead of an impressed line will readily separate *O. sercus* n. sp. from *westcottii*, to which it is closely related. In *sercus* the first five segments have an apical fringe of plumose hairs, beyond this point the hairs are simple.

O. avellanus appears to be nearest *erebus* Mel., and like that species has an apical fringe of plumose hairs on all abdominal segments.

O. delodontus is related to *erebus*, and has plumose fringes on all segments. It is separated at once by the size and the well-separated punctures on the mesonotum.



Viereck, Henry Lorenz. 1904. "The Species of *Odontophotopsis* (Hymenoptera)." *Transactions of the American Entomological Society* 30, 81–92.

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