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NAMES APPLIED TO THE NORTH AMERICAN BEES
OF THE GENERA LITHURGUS, ANTHIDIUM,
AND ALLIES

BY

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NAMES APPLIED TO THE NORTH AMERICAN BEES OF THE GENERA LITHURGUS, ANTHIDIUM, AND ALLIES.¹

By T. D. A. COCKERELL,
Of the University of Colorado.

The Anthidiine and Lithurgine bees, representing two groups of Megachilidæ, are interesting on account of their habits, and frequently well-marked or even very peculiar structural characters. The Anthidiines, nearly always spotted or banded with yellow on the abdomen, are very well represented in our fauna, and are even to be found in the Miocene deposits of Colorado. *Lithurgus*, on the other hand, has only a few species in our fauna, although it is an old genus, found in the European Miocene, and widely spread over the earth, even to Australia and the islands of the Pacific.

LIST OF SPECIES.

Genus *ANTHIDIUM* Fabricius,

A genus of many species, found in most parts of the world, but absent from Australia and New Zealand.

The females use cottony fibers in making their nests, and are called by Fabre "Cottoniers."

For a discussion of the Palearctic genera and groups included by authors in *Anthidium*, see *Entomologist's Record*, vol. 21, No. 12.

TABLES.

- (1) Cockerell, Bull. So. Cal. Acad. Sci., vol. 3, 1904, pp. 56-58. (Males.)
- (2) Cockerell, Proc. U. S. Nat. Mus., vol. 40, 1911, p. 249.
- (3) Friese, Das Tierreich, Megachilinæ, lief. 28, 1911, pp. 379-381.
- (4) Friese, Das Tierreich, Megachilinæ, lief. 28, 1911, pp. 391-392.
- (5) Cockerell, University of Colorado Studies, vol. 4, 1907, pp. 249-250.
- (6) Swenk, University [of Nebraska] Studies, vol. 14, no. 1, 1913, pp. 9-11.

americanum FRIESE, 1911. Tab. 4.

New name for *A. maculatum* Smith, preoccupied.

¹ The asterisk (*) indicates that the species is in the collection of the United States National Museum. Some species sent to the United States National Museum by Prof. T. D. A. Cockerell labeled "cotypes," are here listed as "paratypes," since Professor Cockerell uses the name "cotype" in the sense in which the museum uses "paratype." The museum has considerable material in the Anthidiine group and when this material is all determined the number of species in its collection will be considerably increased. Of the 107 names (fossil species omitted) in this list in the Anthidiine bees, 47 are represented by specimens in the collection. Of this 47, 20 are types or paratypes.—J. C. CRAWFORD.

- *angelarum** TRITUS, 1906. Los Angeles County, California (Coquillett).
Female $9\frac{1}{2}$ mm.; markings deep yellow, scopa very white, sixth abdominal segment with large yellow spots.
Type.—Cat. No. 9034, U.S.N.M.
- *astragali** SWENK, 1913. Bad Lands at mouth of Monroe canyon, Sioux County, Nebraska. (M. Cary). Tab. 6.
Paratype.—Cat. No. 15259, U.S.N.M.
- atrifrons** CRESSON, 1868. New Mexico (S. Lewis).
Same as *emarginatum*.
- atriventre** CRESSON, 1878. California (Hy. Edwards). Tab. 3.
Female with ventral scopa and hair of face fuscous or black.
- atriventre** SMITH, 1879. Orizaba, Mexico.
Name preoccupied: = *orizabæ*.
- aztecum** CRESSON, 1878. Mexico (Sumichrast). Tab. 4.
Allied to *cognatum*.
- *banningense** COCKERELL, 1904. Banning, California (Davidson). Tab. 1.
Male $14\frac{1}{2}$ mm.
- *bernardinum** COCKERELL, 1904. Strawberry Valley, California (Davidson). Tab. 1.
Male about 14 mm.; allied to *A. pecosense*.
Paratype.—Cat. No. 13666, U.S.N.M.
- *bernardinum aridum** COCKERELL, 1904. Rock Creek, California (Davidson). Tab. 1.
Scape of male yellow in front.
- *bernardinum fragariellum** COCKERELL, 1904. Strawberry Valley, California (Davidson). Tab. 1.
Scape of male all black.
- bernardinum wilsoni** COCKERELL, 1904. Mount Wilson, California (Davidson). Tab. 1.
Male about 11 mm.
- blanditum** CRESSON, 1879. Nevada (Morrison). Tab. 2, 3.
Coxæ and trochanters (female) all black.
- blanditum praedentatum** COCKERELL, 1907. Boulder, Colorado (G. Hite). Tab. 5.
Known (female) from *A. montivagum* and *A. porterae* by the bright lemon-yellow sixth abdominal segment, its margin evidently notched in the middle, and the elongated marks over the eyes. Referred later to *A. placitum* as a variety.
- californicum** CRESSON, 1879. California (H. Edwards). Tab. 1, 3.
Fowler describes the female from Berkeley and Redlands, California. Fox describes a variety from Lower California.
- clypeodentatum** SWENK, 1913. Sioux county, Nebraska. Tab. 6.
- *cognatum** CRESSON, 1878. Georgia (Morrison). Tab. 3.
Characters: Trans. Amer. Ent. Soc., vol. 29, p. 175. Illinois (Robertson).
- compactum** PROVANCHER, 1896. Los Angeles, California (Coquillett).
Name preoccupied: = *collectum*.
- conspicuum** CRESSON, 1879. Nevada (Morrison). Tab. 3, 5.
Male: Entom. News, 1909, p. 262.
Also in Colorado.
- collectum** HUARD, 1896. Tab. 1, 3.
Allied to *A. emarginatum*; see Bull. Southern California Acad. Sci., May 1904, p. 73.
New name for *A. compactum*.
- collectum ultrapictum** COCKERELL, 1904. Tehachapi, California (Davidson).
Male a little larger; scape with a yellow stripe; abdominal bands very bright yellow, only that on first segment divided into four spots.
- crassipes** CRESSON, 1878. Florida (Tatnall). Tab. 3.
Ventral scopa yellowish; legs very robust.
- edwardsii** CRESSON, 1878. California (Hy. Edwards). Tab. 3.
Dorsal hair of head and thorax dense and fulvous.

- **emarginatum* SAY, 1824. Tab. 3, 5, 6.
Face of female black.
Cresson redescribes it from specimens collected in Kansas.
- emarginatum atripes* CRESSON, 1879. Nevada (Morrison).
Male with legs entirely black.
- exhumatum* COCKERELL, 1906. Fossil in the Miocene shales of Florissant (Scudder).
- flavolineatum* SMITH, 1879. Oajaca, Mexico=*Dianthidium flavolineatum*.
Female 8 mm., a short narrow line behind the eyes yellow.
- **harbecki* CRAWFORD, 1910. Wenonah, New Jersey (H. S. Harbeck).
Has a pulvillus, "Related according to the swollen legs to *larrea* and to *crassipes*.
Outside of that one character it does not seem close to any others." (Crawford in letter.)
Type.—Cat. No. 13454, U.S.N.M.
This is to be referred to *Heteranthidium* on the authority of Mr. Crawford.
- hesperium* SWENK, 1913. Palo Alto, California.
- hesperium dentipygum* SWENK, 1913. Laramie, Wyoming.
- **illustre* CRESSON, 1879. Nevada (Morrison). Tab. 3.
Fowler described the male from Redlands, California.
Nesting habits; Entom. News, 1904, p. 284.
This species is to be referred to *Dianthidium*.
- illustre consonum* CRESSON, 1879. Nevada (Morrison).
- impatiens* SMITH, 1879=*Dianthidium impatiens*. Tab. 4.
Male 8½ mm.
- incurvatum* SWENK, 1913. Ute creek, Costilla County, Colorado (H. S. Smith).
- jocosum* CRESSON, 1878. Colorado (Ridings). Tab. 3.
"A pretty little species, with the bands on apex of abdomen broad and uninterrupted." (Cresson.)
- **lupinellum* COCKERELL, 1904. Pecos, New Mexico (W. P. Cockerell). Tab. 1.
Male about 11 mm.; clypeus all yellow. Visits *Lupinus*.
Also in Texas.
- maculatum* SMITH, 1854. Mexico.
Notes on type: Trans. Amer. Ent. Soc., vol. 21, p. 336.
Apex of male abdomen with long straight parallel blunt spines, the outer ones very much longer than the middle one; subapical lateral spines hooked.
Renamed *A. americanum* Friese, 1911.
- maculifrons* SMITH, 1854. "United States." Tab. 3.
- **maculosum* CRESSON, 1878. "Utah (Putnam); California (H. Edwards)." Tab. 2, 3.
Male; Ann. Mag. Nat. Hist., May 1900, p. 412.
- montivagum* CRESSON, 1878. Colorado (Ridings). Tab. 2, 3.
- mormonum* CRESSON, 1878. Utah (Ulke). Tab. 3.
- nebrascense* SWENK, 1913. Sowbelly canyon, Sioux County, Nebraska (R. W. Dawson). Tab. 6. Also in Wyoming.
- orizabæ* DALLA TORRE=*Dianthidium orizabæ*. Tab. 4.
Abdominal scopa black.
- palliventre* CRESSON, 1878. California (Hy. Edwards). Tab. 1, 3.
Supposed male; Bull. Southern California Acad. Sci., April, 1904, p. 60.
- palmarum* COCKERELL, 1904. Palm Spring, California (Davidson). Tab. 1.
Tegulae apricot color.
- paroselæ* COCKERELL, 1898. Mesilla, New Mexico (Cockerell). Tab. 1.
Male; Ann. Mag. Nat. Hist., May 1900, p. 412.
Nesting habits; Minnie Newberry, Psyche, 1900, p. 94.
- **pecosense* COCKERELL, 1904. Pecos, New Mexico (Cockerell). Tab. 1, 2.
Also at Flagstaff, Arizona (F. C. Pratt).

- *perplexum** SMITH, 1854. Georgia. Tab. 3.
Legs and margin of thorax ferruginous.
This is to be referred to *Dianthidium* subgenus *Anthidiellum* on the authority of Mr. Crawford.
- placitum** CRESSON, 1879. Nevada (Morrison). Tab. 2, 3.
Female clypeus yellow except a median stripe; a yellow band behind ocelli, interrupted in middle.
- placitum prædentatum** COCKERELL, 1907. Boulder, Colorado (G. Hite). Tab. 2, 5.
- *porterae** COCKERELL, 1900. Las Vegas, New Mexico (W. Porter). Tab. 1, 5.
Prior to 1900 confused with *A. maculifrons*.
Also in Texas, and north to Calgary in western Canada.
Type.—Cat. No. 5812, U.S.N.M.
- *porterae amabile** COCKERELL, 1904. Boulder, Colorado (Cockerell). Tab. 5.
Ground color of abdomen red.
Type.—Cat. No. 9655, U.S.N.M.
- *porterae personulatum** COCKERELL, 1907. Boulder, Colorado. (W. P. Cockerell). Tab. 5, 6.
Female clypeus entirely black; male with apical lobes and spine of abdomen black.
- *poudreum** TITUS, 1902. Fort Collins, Colorado (Titus). Tab. 2.
“*poudreum*,” in the original publication, is a misprint.
Male (11 mm.) differs from *atrifrons* by the yellow markings, scape entirely black, and last abdominal segment deeply notched, with a blunt black tooth in middle.
Variety (? hybrid with *tenuifloræ*); Ent. News, 1909, p. 262.
Also at Flagstaff, Arizona (Pratt).
- praedentatum trianguliferum** SWENK, 1913. Fort Garland, Costilla County, Colorado (L. Bruner).
- *psoraleæ** ROBERTSON, 1902. Near Carlinville, Illinois (Robertson) Tab. 6.
Characters: Trans. Amer. Ent. Soc., vol. 29, p. 175.
Face of female black.
- *ridingsii** CRESSON, 1878. Georgia (J. Ridings). Tab. 3.
“A very distinct species, easily recognized by the abdominal fasciæ being very narrow and regular.” (Cresson.)
This is to be referred to *Heteranthidium* on the authority of Crawford.
- rodriguezi** COCKERELL, 1912. Guatemala (Rodriguez).
- sagittipictum** SWENK, 1913. Pullman, Washington (C. V. Piper).
- saxorum** COCKERELL, 1904. Rock Creek, California (Davidson). Tab. 1.
Abdomen shining, with sparse punctures, the markings orange.
- scudderi** COCKERELL, 1906. Fossil in the Miocene shales of Florissant (Scudder).
- serranum** COCKERELL, 1904. Rock Creek, California (Davidson) Tab. 6.
Male 15½ mm. Comparison with *illustre* and *conspicuum*; Ent. News, 1909, p. 262; also Bull. Southern California Acad. Sci., Feb. 1904, p. 23.
- *tenuifloræ** COCKERELL, 1907. Boulder, Colorado (W. P. Cockerell). Tab. 5, 6.
Allied to *emarginatum*; female ventral scopa sepia brown, pale at sides; male with dark tubercles and scutellum.
Also in Montana and western Canada.
- titusi** COCKERELL, 1904. Fort Collins, Colorado (E. S. G. Titus). Tab. 1, 5.
Allied to *emarginatum*.
- transversum** SWENK, 1913. Ute creek, Costilla County, Colorado (H. S. Smith).
- *tricuspidum** PROVANCHER, 1896. Los Angeles, California (Coquillett). Tab. 1, 3.
Titus (1906) gives a new description.
- *utahense** SWENK, 1913. Logan, Utah.
Paratype.—Cat. No. 15260, U.S.N.M.
- wallisi** COCKERELL, 1913. Peachland, British Columbia (J. B. Wallis).
Described in Canadian Entomologist, 1913, p. 13.

Genus *DIANTHIDIUM* Cockerell.

A very widespread genus, rather more so than *Anthidium*, since there is one species in Australia.

The females use resin in making their nests, and are called by Fabre "Résiniers." Pulvilli are present on the feet of this genus, but absent in true *Anthidium*.

SUBGENERA AND SECTIONS.

Paranthidium T. and W. COCKERELL, 1901.

Type.—*Perpictum* Cockerell.

Anthidiellum COCKERELL, 1904.

Type.—*Strigatum* Panzer (European).

TABLES.

- (1) Cockerell, Bull. Southern California Acad. Sci., vol. 3, 1904, pp. 3-4.
 - (2) Friese, Das Tierreich, Lief. 28, Megachilinae, 1911, pp. 379-381.
 - (3) Friese, Das Tierreich, Lief. 28, Megachilinae, 1911, pp. 391-392.
 - (4) Swenk, University [of Nebraska] Studies, vol. 14, No. 1, 1913, pt. 25-6.
- agnatum** CRESSON, 1878. Mexico (Sumichrast). Tab. 3.
Wings fuliginous.
- apicale** CRESSON, 1878. Mexico (Sumichrast). Tab. 3.
This, *bivittatum* and *toltecum* "are closely related, and have a short, broad, robust form somewhat like that of *perplexum* and *notatum*" (Cresson).
- balli** TITUS, 1902. Ridgeway, Colorado, July 31 (E. D. Ball).
Length 14 mm., markings dark rich yellow; allied to *venustum*.
- *bivittatum** CRESSON, 1878. Mexico (Sumichrast). Tab. 3.
Mesothorax with two yellow stripes.
Guatemala (Barber and Schwarz). Female described; Ann. Mag. Nat. Hist., July, 1913, p. 108.
- boreale** ROBERTSON, 1902. Near Carlinville, Illinois (Robertson).
Allied to *D. notatum*; male 8 mm.; legs red, marked with yellow.
Characters: Trans. Amer. Ent. Soc., vol. 29, p. 175.
- *concinnum** CRESSON, 1872. Texas (Belfrage). Tab. 2.
"Much like *simile*, differing principally by the color of the legs." (Cresson).
The legs are fulvo-ferruginous.
Cotype.—Cat. No. 1773, U.S.N.M.
- *consimile** ASHMEAD, 1896. Near Los Angeles, California (Davidson). Tab. 1.
Female 7 mm.
Parasite; *Torymus anthidii* Ashmead.
The nest is figured and described in Ent. News, 1896, p. 23.
Type.—Cat. No. 16698, U.S.N.M.
- cressonii** DALLA TORRE, 1896. Tab. 2.
New name for *venustum* Cresson, preoccupied.
Nest: Bull. Amer. Mus. Nat. Hist., vol. 12, (1906), p. 444, fig. 1.
- curvatum** SMITH, 1854. Georgia. Tab. 1.
This has been confused with *sayi* (*interruptum* Say).
- *davidsoni** COCKERELL, 1904. Bear Valley, California (Davidson). Tab. 1.
Allied to *parvum*.
Type.—Cat. No. 9653, U.S.N.M.
- *ehrhorni** COCKERELL, 1900. Mojave Desert, California (Ehrhorn). Tab. 1.
Belongs to subgenus *Anthidiellum*.
Type.—Cat. No. 5811, U.S.N.M.
- *eiseni** COCKERELL, 1913. San José del Cabo, Lower California (Eisen). Belongs to *Anthidiellum*.
Type.—Cat. No. 16225, U.S.N.M.

- flavolineatum* SMITH, 1879. Oajaca, Mexico. Tab. 3.
formosum CRESSON, 1878. Colorado (Ridings). Tab. 2.
 Possibly the male of *cressonii*.
gabbii CRESSON, 1878. Costa Rica (W. M. Gabb). Tab. 3.
**gilense* COCKERELL, 1897. West Fork of Gila River, New Mexico (Townsend).
 Tab. 1, 2.
 Also in Texas.
 Male: Ann. Mag. Nat. Hist., May 1900, p. 413.
 Type.—Cat. No. 5810, U.S.N.M.
gualanense COCKERELL, 1912. Gualan, Guatemala (W. P. Cockerell).
illustre CRESSON (see under *Anthidium*). Nevada (Morrison). Tab. 2.
impatiens SMITH, 1879. "South Mexico." Tab. 3.
interruptum SAY, 1824. "Missouri."
 Name preoccupied: = *sayi*.
**jugatorium* SAY 1824. "Missouri." Tab. 4.
 Very close to *perpictum*, differing in color of tegulae.
**larreae* COCKERELL, 1897. Near Agricultural College, Mesilla Valley, New Mexico
 (Cockerell). Tab. 2.
 Legs red. Relationships; Bull. Southern California Acad. Sci., Feb., 1904, p. 23.
 Type.—Cat. No. 3507, U.S.N.M.
lepidum CRESSON, 1878. Georgia (Morrison). Tab. 2.
 "Resembles *jugatorium* in ornamentation of abdomen" (Cresson).
**macrurum* COCKERELL, 1913. Federal District, Mexico (J. R. Inda).
 Type.—Cat. No. 16226, U.S.N.M.
mexicanum CRESSON, 1878. Mexico (Sumichrast). Tab. 3.
 Wings fuscous.
**notatum* LATREILLE, 1809. "Carolina." Tab. 2.
 Redescribed by Cresson, Proc. Ent. Soc. Phila., vol. 2, 1864, p. 376.
orizabæ DALLA TORRE, 1896. Tab. 3.
 New name for *A. atriventris* Smith, preoccupied.
**parvum* CRESSON, 1878. Colorado (Ridings). Tab. 1, 2.
 "Marked very much like *simile*, but smaller" (Cresson).
**perpictum* COCKERELL, 1898. Ruidoso Creek, New Mexico (Wooton). Tab. 1.
 Type.—Cat. No. 5807, U.S.N.M.
 I have recently (Aug. 8, 1913) taken this at flowers of *Helianthus annuus*, at Boulder,
 Colorado.
perpictum coloradense SWENK, 1913. Colorado Springs, Colorado.
perplexum SMITH. See under *Anthidium*.
**provancheri* TITUS, 1906. Los Angeles County, California (Coquillett).
 "Closely allied to *ulkei*, *ehrhorni*, and *simile*" (Titus).
 Type.—Cat. No. 9033, U.S.N.M.
pudens CRESSON, 1879. Nevada (Morrison). Tab. 2.
 "This may prove to be the female of *pudicum*" (Cresson).
**pudicum* CRESSON, 1879. Nevada (Morrison). Tab. 2.
 Resembles *D. parvum*, but markings paler; perhaps not specifically distinct.
 Female; Entomologist, May, 1907, p. 99.
**robertsoni* COCKERELL, 1904. Rock Creek, California (Davidson). Tab. 1.
 Belongs to subgenus *Anthidiellum*.
 Type.—Cat. No. 9654, U.S.N.M.
**sayi* COCKERELL, 1907. Tab. 4.
 New name for *interruptum* Say, preoccupied.
sayi xerophilum COCKERELL, 1907. Mesilla, New Mexico (Cockerell).
 A very red form.
**simile* CRESSON, 1864. "Mass., Conn." Tab. 2.

- Varietal form or race in Texas; Proc. Ent. Soc. Washington, IX, p. 72.
- singulare** CRESSON, 1879. Nevada (Morrison). Tab. 2.
- "Easily recognized (female) by the dilated lateral margin of abdominal segments 2 to 4" (Cresson). First two abdominal segments with the yellow bands divided into spots.
- singulareperluteum** T. and W. COCKERELL, 1904. Wilson's Peak, California (Davidson). First two abdominal segments with the yellow bands deeply notched, but not divided.
- subparvum** SWENK, 1913. Pullman, Washington (C. V. Piper).
- tertiarium** COCKERELL, 1906. Fossil in the Miocene shales of Florissant (Scudder.)
- *texanum** CRESSON, 1878. Texas (Belrage). Tab. 2.
- Nest and female; Melander, Biol. Bull., 1902.
- Allied to *concinnum*.
- toltecum** CRESSON, 1878. Mexico (Sumichrast). Tab. 3.
- *ulkei** CRESSON, 1878. Utah (*Hy. Ulke*). Tab. 2, 4.
- Comparison with *parvum*; Entom. News, 1909, p. 261.
- *ulkei perterritum** COCKERELL, 1913. Santa Fe, New Mexico (Cockerell).
- venustum** CRESSON, 1878. Colorado (Ridings, Morrison).
- Name preoccupied: = *cressonii*.

The following South American species are known to belong to *Dianthidium*:

- | | |
|---|---|
| <i>D. inerme</i> Friese. | <i>D. gregarium</i> Schrottky. |
| <i>D. bertonii</i> Schrottky. | <i>D. gregarium continuifasciatum</i> Strand. |
| <i>D. zebratum</i> Schrottky. | <i>D. tigrinum</i> Schrottky. |
| <i>D. bicoloratum</i> Smith. | <i>D. anisitsi</i> Schrottky. |
| <i>D. bicoloratum tucumanum</i> Vachal. | <i>D. paraguayense</i> Schrottky. |
| <i>D. steloides</i> Spinola. | <i>D. multiplicatum</i> Smith. |
| <i>D. confusum</i> Smith. | <i>D. lunatum</i> Smith. |
| <i>D. indscriptum</i> Dalla Torre. | <i>D. joergenseni</i> Friese (<i>bruchii</i> Schrottky). |
| <i>D. nudum</i> Schrottky. | <i>D. brethesi</i> Schrottky. |
| <i>D. vernoniae</i> Schrottky. | <i>D. catamarcense</i> Schrottky. |
| <i>D. megachiloides</i> Holmberg. | <i>D. autumnale</i> Schrottky. |
| <i>D. heathi</i> Cockerell. | <i>D. nectarinioides</i> Schrottky. |
| <i>D. iheringi</i> Schrottky. | <i>D. multifasciatum</i> Strand. |

Anthidium rubripes FRIESE, which Brethes (1909) referred to *Dianthidium*, is an *Anthidium*.

Genus *HYPANTHIDIUM* Cockerell.

Second recurrent nervure passing well beyond second submarginal cell, as in *Dianthidium*, but feet with no pulvilli.

aureocinctum COCKERELL, 1912. Mexico.

***panamense** COCKERELL, 1913. Gatun, Canal Zone, Panama (A. H. Jennings.)

Type.—Cat. No. 16227, U.S.N.M.

The type of *Hypanthidium* is the South American *H. flavomarginatum* Smith.

Genus *HETERANTHIDIUM* Cockerell.¹

Second recurrent nervure meeting second transverse cubital, as in *Anthidium*; feet with pulvilli; end of male abdomen pointed. See also Ent. News, 1909, p. 261

***chippewaense** GRAENICHER, 1910. Indian village at juncture of the Lower Tamarack and St. Croix Rivers, Minnesota (Graenicher).

Paratype.—Cat. No. 14915, U.S.N.M.

cockerelli TITUS, 1902. Rocky Ford (Gillette) and Virginia Dale (Titus), Colorado.

Described under *Protanthidium*.

dorsale LEPELETIER, 1841. Georgia. This is the type of the genus.

Legs ferruginous; hair of thorax and head above rufous.

¹ Entomological News, 1904, p. 292.

harbecki CRAWFORD. Sec under *Anthidium*.

***occidentale** CRESSON, 1868. New Mexico (S. Lewis).

Colorado (cf. Cresson).

ridingsi CRESSON. See under *Anthidium*.

***zebratum** CRESSON, 1872. Texas (Heiligbrodt).

Genus **PROTANTHIDIUM** T. and W. Cockerell.

This is an Asiatic genus; the two American species (*cockerelli* and *chippewaense*) which have been referred to it belong to *Heteranthidium*.

Genus **TRACHUSA** Jurine.

A genus of Europe, represented in California by a single species, which departs from typical *Trachusa*, and approaches *Dianthidium*, in the venation. In general, however, it is remarkably like the European *T. serratulae*.

perdita COCKERELL, 1904. Tehachapi, California (Davidson).

Male about 12 mm.; abdomen black without light markings; clypeus and lateral face marks cream color.

Genus **LITHANTHIDIUM** Cockerell.

pertriste COCKERELL, 1911. Fossil at Florissant, Colorado.

Genus **LITHURGUS** Berthold.

Fox (1902) has proposed to separate the North American species as a genus *Lithurgopsis*, but this can hardly be maintained. For an account of the characters of various species of *Lithurgus*, see Trans. Amer. Ent. Soc., vol. 31 (1905), p. 333.

Typical *Lithurgus* has no pulvillus in either sex; the males of *Lithurgopsis* have a distinct pulvillus.

***apicalis** CRESSON, 1875. "Colorado, New Mexico (H. C. Yarrow, C. E. Aiken)."

Hair at end of abdomen fulvous.

***apicalis opuntiae** COCKERELL, 1902. Mesilla Valley, New Mexico (Cockerell).

Hair at end of abdomen dark. Formerly confused with *gibbosus*.

***compressus** SMITH, 1853. "United States" (Doubleday).

Apparently the male of *gibbosus*.

***echinocacti** COCKERELL, 1898. La Cueva, Organ Mountains, New Mexico (Townsend.)

Visits *Echinocactus wislizenii*.

***gibbosus** SMITH, 1853. "United States."

Female with the facial prominence not at all bilobed.

oblongus Fox = *Megachile longula*.

Lithurgus is known from the European Miocene (*L. adamiticus* Heer). It is represented in South America by the following species:

<i>L. corumbæ</i> Cockerell.	<i>L. rufiventris</i> Friese.
<i>L. dubius</i> Sichel.	<i>L. pygmaeus</i> Friese.
<i>L. laticeps</i> Friese.	<i>L. planifrons</i> Friese.
<i>L. albiceps</i> Friese.	<i>L. neoqueenensis</i> Friese.
<i>L. huberi</i> Dücke.	<i>L. osmoides</i> Friese.
<i>L. friesei</i> Dücke.	<i>L. macroglossa</i> Friese.

