

**Article XV.**—NOTES ON THE DISTRIBUTION AND BIBLIOGRAPHY OF NORTH AMERICAN BEES OF THE FAMILIES APIDÆ, MELIPONIDÆ, BOMBIDÆ, EUGLOSSIDÆ, AND ANTHOPHORIDÆ

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INTRODUCTION

It was our original intention to prepare a simple check-list of North American bees, but the literature is so scattered and a locality record without a knowledge of the authority upon which it is based is so unsatisfactory that we decided to include our bibliographic notes (especially on papers published after 1896) and to publish at present only the records for certain families of higher bees. These notes are not intended to be a complete bibliography of the subject. In general, we have not given a reference unless it added to our knowledge of distribution, and, in summarizing a reference, we have usually left out the parts that are repetitions or mere confirmations of previously published data. We think our records are practically complete up to at least 1919. No taxonomic name is given with a reference if the author used the one adopted by us here. A type locality is designated by an asterisk. It would have delayed too greatly the publication of this list to have attempted gathering unpublished records from specimens in various collections. The American Museum of Natural History would, however, be glad to have copies of such records.

Distribution is not merely spatial; distribution in time is also important. For that reason we have, for the most part, included the months (indicated by Roman numerals) in which adults were found and,

because it also is often important, the flowers at which they were captured. Doubtless some of the papers dealing with flowers and bees have been overlooked.

Since the collector has often worked harder than the author, he is entitled to have part of the credit for a new locality record. Furthermore, the collector's name, through a knowledge of his activities, sometimes enables subsequent authors to locate, at least approximately, a place which may not appear on maps. We have, therefore, usually given the collector's name (in parentheses), unless he happened to be also the author, but, unfortunately, these did not always get in our notes and it did not seem to be worth while rechecking all the references for this point alone.

The classification of bees is not in a very satisfactory shape and some of the recent changes in names and system do not seem to have helped matters a great deal. More field-work and detailed studies of comparative anatomy are needed before we can hope to accomplish much in the way of improving the taxonomy. We have, therefore, been conservative, even where we feel that changes might be justified, and we have usually "lumped" rather than "split." However, in most cases the bibliography clearly shows where splits have been made.

#### **APIDÆ** Leach

As restricted here, this family includes only *Apis*.

**APIS** Linnæus, 1758, pp. 343 and 575

(Type: *mellifera* Linnæus)

There are no native species in America. The introduced *mellifera* now occurs in nearly all civilized regions. *A. mellifera ligustica* Spinola, 1806, p. 35, with largely rufolvous abdomen, is commonly kept in the United States. *A. mellifera lamarckii* Cockerell, 1906*b*, p. 166, (n. n. for *fasciata* Latreille, 1804, p. 171, not Linnæus, 1767) was recorded from Canyon City, Colorado, by Uhler, 1877, p. 783. Friese, 1906*a*, p. 299, recorded *A. mellifera syriaca* Buttel-Reepen from San José, Costa Rica.

*Apis bostoniana* Sulzer is neither American nor *Apis*, but is the European *Bombus hypnorum* (Linnæus). See Cockerell, 1906, p. 104.

*Apis grissipes* Turton, Syst. Nat. III, p. 559, from "S. American Is." (presumably West Indies) cannot be identified.

#### **MELIPONIDÆ**

We use this name for the genera which are usually grouped as the Meliponinæ of the Apidæ. They are certainly as distinct from *Apis* as is *Bombus*.

**MELIPONA** Illiger, 1806, p. 157(Type: *Apis favosa* Fabricius)

Dalla Torre, 1896, p. 574, includes *Trigona* Jurine and *Tetragona* Lepeletier as subgenera. Von Ihering, 1903, gives full notes on the biology of Brazilian species. Cockerell, 1919, pp. 194-206, gives a key to the species in U. S. National Museum.

*amalthea*. See *Trigona*.

*bipunctata*. See *Trigona*.

*carrikeri*. See *marginata carrikeri*.

*citriperda*. See *Trigona ruficrus*.

*costaricensis*. See *fasciata costaricensis*.

*cressoni*. See *Trigona nigra*.

**fasciata** Latreille, 1811, p. 173, 291. ♀. Vera Cruz, MEXICO.

Gronen, 1881, p. 331. Biology

Cockerell, 1919, p. 198. Pará, BRAZIL.

**fasciata costaricensis** Cockerell, 1919, p. 198. ♀. Pozo Azul, COSTA RICA; VI; (Carriker).

**fasciata melanopleura** Cockerell, 1919, p. 201. ♀. Pozo Azul, COSTA RICA; VI; (Carriker).

**fasciata panamica** Cockerell, 1919, p. 198. ♀. Porto Bello\*, Cabima, and Alhajuelo, PANAMA; II, V; (Busck).

**flavipennis** Smith, 1854, p. 406. ♂. Pará, BRAZIL.

*M. titania* Gribodo, 1893, p. 251. ♀. Rioja, ARGENTINA.

*M. titania* Ducke, 1902, p. 294. At *Solanum toxicarium*.

Schultz, 1904, p. 816. DUTCH GUIANA. Palmar and Archidona, ECUADOR; (Hänsch).

Cockerell, 1919, p. 205. Mapiri, BOLIVIA. Guayaquil, ECUADOR. Pozo Azul, (Carriker), and Juan Vinas, (Schaus), COSTA RICA.

*fulvipeda*. See *fulvipes*.

**fulvipes** Guérin, 1839, p. 462. ♀, ♂. CUBA.

*Melipona zonulata* [Klug] Spinola, 1840, p. 123. MEXICO.

*Apis (Melipona) fulvipes* Blanchard, 1849, Plate cxxix, fig. 7.

*Trigona fulvipeda* Poey, 1851, pp. 122-176. ♂ and biology. Discussed by Müller, 1875, p. 291.

Smith, 1863, Plate xx.

Fox, 1891, p. 348. KINGSTON, JAMAICA.

du Buysson, 1901, p. 153. Zacualco, Jalisco, MEXICO. Biology.

Cockerell, 1912b, p. 315. Gualan and Quirigua, GUATEMALA; II; at *Solanum* and *Pontederia cordata*; (W. P. Cockerell).

Friese, 1916, p. 299. San José, COSTA RICA; (Schmidt).

Variety *a* Cockerell, 1919, p. 200. ♀. Quirigua, (W. P. Cockerell), Cacao, and Trece Aguas, (Goll), GUATEMALA; V. Prinzapolca River, east coast of

## NICARAGUA.

Cockerell, 1919, p. 201. Rio Jacinto, D. F., (Riquelme), and Izamal, Yucatan, (Townsend), MEXICO. Belize, HONDURAS. Puntarenas, COSTA RICA; (Knab). San Diego, (Palmer and Riley), and Guantanamo, CUBA.

**fulvipes obscuripes** Friese, 1916, p. 348. (*Trigona*) ♀. San Carlos, COSTA RICA; (Burgdorf). MEXICO.

**fuscata** Lepeletier, 1836, p. 424. ♀. PERU.

Spinola, 1840, p. 130. FRENCH GUIANA.

*Trigona fuscata* Smith, 1854, p. 413.

Ducke, 1902, p. 295. Belem, Pará, BRAZIL.

Schultz, 1904, p. 817. Itaituba and Tapajoz, BRAZIL; VIII, X.

Friese, 1916, p. 299. San Carlos, COSTA RICA; (Burgdorf).

Cockerell, 1919, p. 205. Mapiro, BOLIVIA.

**fuscipes** Friese, 1900a, p. 382. ♀, ♂. MEXICO. COLOMBIA. VENEZUELA. Yquitos, PERU. Prov. Pianhy, BRAZIL.

Zabriskie, 1909, p. 48. Description of wax.

Cockerell, 1919, p. 203. Cacao, Trece Aguas, Alta Vera Paz, GUATEMALA; V; (Goll.).

*jenningsi*. See *orbignyi jenningsi*.

*lautipes*. See *variegatipes lautipes*.

**ligata** Say, 1837, p. 415. (*Trigona*) ♀. MEXICO.

Cockerell, 1904a, p. 23. San Rafael, Vera Cruz, MEXICO; VII; at *Cordia*; (Townsend).

**marginata carrikeri** Cockerell, 1919, p. 198. ♀. Pozo Azul, COSTA RICA; VI; (Carriker).

**marginata torrida** Friese, 1916, p. 348. ♀. San José, COSTA RICA; (Schmidt).

*melanopleura*. See *fasciata melanopleura*.

**nigripes** Friese, 1900a, p. 381. ♀. GUATEMALA; (Stoll).

*obscuripes*. See *fulvipes obscuripes*.

**orbignyi jenningsi** Cockerell, 1919, p. 199. ♂. Las Cascadas, Canal Zone, PANAMA; (Jennings).

*panamica*. See *fasciata panamica*.

**solani** Cockerell, 1912b, p. 315. ♀. Quirigua, GUATEMALA; II; at *Solanum*; (W. P. Cockerell).

*torrida*. See *marginata torrida*.

*titania*. See *flavipennis*.

**variegatipes** Gribodo, 1893, p. 254. ♀, ♂. GUADELOUPE.

Crawford, 1914, p. 131. DOMINICA; (Foote).

Cockerell, 1919, p. 204. MONTERRAT; (Riley).

**variegatipes lautipes** Cockerell, 1919, p. 204. ♀. MONTERRAT; III; (Riley).

*zonulata*. See *fulvipes*.

*Oxytrigona* Cockerell

See *Trigona*.

*Tetragona* Lepeletier

See *Melipona* and *Trigona*.

**TRIGONA** Jurine, 1807, p. 245

(Type: *Apis amalthea* Olivier)

Dalla Torre, 1896, pp. 574–585, included all the previously described species under *Melipona*. Von Ihering, 1903, gives full notes on biology of Brazilian species.

**Tetragona** Lepeletier, 1825, p. 170, is a subgenus.

**Oxytrigona** Cockerell, 1917*d*, p. 124, was proposed as a subgenus with *mediorufa* as the type.

**amalthea** Olivier, 1789, p. 78. (*Apis*)

*Melipona amalthea* Illiger, 1806, p. 156.

*Trigona amalthea* Jurine, 1807, p. 246.

Lepeletier, 1825, p. 610. Only the biology; otherwise *T. silvestriana* Vachal.

*Trigona fuscipennis* Friese, 1900*a*, p. 385. ♀. GUATEMALA. COLOMBIA. Blumenau, Para, BRAZIL. PANAMA. MEXICO.

*Trigona fuscipennis* Ducke, 1903, p. 314. Throughout the state of Pará, BRAZIL.

See Von Ihering, 1903, p. 204 (biology, etc.) and Schultz, 1904, p. 826.

Cockerell, 1912, p. 60. BRAZIL: Natal, Rio Grande do Norte; Independencia, Parahyba; Manaos, Amazonas; VI, VIII; (Mann and Heath).

Cockerell, 1912*b*, p. 314. Gualan, Puerto Barrios, and Quirigua, GUATEMALA; II; at *Calopogonium caruleum* and *Pontederia cordata*.

Cockerell, 1913, p. 10. Escuintla, GUATEMALA, and Las Sabanas, PANAMA; XI, XIII; (Wheeler). "This is the *T. fuscipennis* Friese. The *amalthea* of Friese and Silvestri is *T. silvestriana* Vachal (*T. friesii* von Ihering)."

Wheeler, 1913, p. 1. Biology.

Cockerell, 1914*c*, p. 309. Guayaquil, ECUADOR; (Von Buchwald).

Schrottky, 1914, p. 219. Discusses synonymy.

Cockerell, 1916*a*, p. 3. DUNOON, BRITISH GUIANA; VII; (Gaige).

See Friese, 1916, p. 299.

Cockerell, 1920*a*, p. 465. Rockstone, Potaro Landing, and Kangaruma, BRITISH GUIANA; VII, VIII; (Lutz). Attends homopterous bark insects in Brazil.

**argyrea** Cockerell, 1912*b*, p. 313. ♀. Quirigua, GUATEMALA; (W. P. Cockerell). "Nest in clay bank."

**atomaria** Cockerell, 1917*d*, p. 217. ♀. Pozo Azul, COSTA RICA; VI; (Carriker).

**bilineata** Say, 1837, p. 414. ♀. MEXICO.

Ihering, 1903, p. 205. Petropolis and Itatiba, BRAZIL. Biology.

Ducke, 1902, p. 324. Pará, BRAZIL.

Cockerell, 1917*d*, p. 127. Federal District, MEXICO.

**bipartita** Lepeletier, 1836, p. 432. ♀. BRAZIL.

Fox, 1895, p. 272. Tepic, MEXICO.

**bipunctata** Lepeletier, 1836, p. 427. (*Melipona*) ♀; BRAZIL.

Smith, 1863, p. 507.<sup>1</sup>

Strand, 1910, p. 558. Asuncion, S. Lorenzo, Villa Morra, and Trinidad, PARAGUAY; XI, XII.

Friese, 1916, p. 299. San José, COSTA RICA; (Schmidt).

See also Ducke, 1902, p. 319; von Ihering, 1903, p. 205; Schultz, 1904, p. 828; and Cockerell, 1917*d*, p. 125.

**bipunctata luteipennis** Friese, 1901, p. 382. ♀. San Carlos, COSTA RICA. See also 1916, p. 348.

**bipunctata wheeleri** Cockerell, 1913, p. 11. ♀. Escuintla\* and Patulul, GUATEMALA; I, XII; (Wheeler).

Wheeler, 1913, p. 5. Biology.

**capitata** Smith, 1854, p. 409. ♀. BRAZIL.

Ducke, 1902, p. 299. Belem, Marajó Island, and Macapá, BRAZIL.

Strand, 1910, p. 558. Trinidad, PARAGUAY.

Friese, 1916, p. 299. COSTA RICA.

**capitata virgilioi** Friese, 1901, p. 268. ♀. Blumenau, St. Catharina, BRAZIL; (Virgil).

Friese, 1916, p. 299. San Carlos, COSTA RICA; (Burgdorf).

See also Ducke, 1902, p. 299, and von Ihering, 1903, p. 207.

*corvina*. See *ruficrus corvina*.

*cressoni*. See *nigra*.

**cupira** Smith, 1863, p. 507. ♀. BRAZIL.

Ducke, 1902, p. 317. ♂. Pará, BRAZIL. Biology.

Ihering, 1903; p. 207. Biology.

Silvestri, 1911, pp. 65-69.

Cockerell, 1912*b*, p. 313. Amatitlan, Puerto Barrios, Guatemala City, Antigua, Gualan, and Quirigua, GUATEMALA; I, II; at *Vernonia aschenborniana* and *Ipomæa sidæfolia*; (W. P. Cockerell).

Cockerell, 1913, p. 10. Zacapa, GUATEMALA, and San José, COSTA RICA; XII; (Wheeler).

Wheeler, 1913, p. 3. Biology.

Cockerell, 1920*a*, p. 464. Pacayas, COSTA RICA; (Werckele). Cabima and Porto Bello trail, PANAMA; (Busck and Jennings).

<sup>1</sup>I have a specimen of *bipunctata* from F. Smith's collection, and am satisfied that it is the species which Lepeletier described.—T. D. A. C.

**doederleini** Friese, 1900*a*, p. 390. ♀. Bahia and Obidos, BRAZIL. Chiriqui, PANAMA.

**dorsalis** Smith, 1854, p. 411. ♀. Pará, BRAZIL. (Not of Smith, 1863, p. 510, which is *meade-waldoi* Cockerell, 1915*a*, p. 32.)

*Melipona dorsalis* Girard, 1874, p. cvi. Bahia, BRAZIL.

Von Ihering, 1903, p. 211. Biology.

Holmberg, 1903, p. 378. Chaco and Atlas Misiones, ARGENTINA.

Cockerell, 1915*a*, p. 30. Cincinnati Coffee Plantation, 20 miles inland from the port of Santa Marta, COLOMBIA; 5,000 ft.; VII; (Gaige). Re-description, synonymy, and biology.

Cockerell, 1917*d*, p. 128. Alhajuelo, PANAMA; (Busck). Guapiles, COSTA RICA; (Crawford). Secanquin, GUATEMALA; (Goll.).

**droryana** Friese, 1900*a*, p. 391. ♀, ♂. Espirito Santo, BRAZIL.

Ihering, 1903, p. 216. Biology.

Strand, 1910, p. 558. Asuncion, S. Lorenzo, Villa Morra, and Puerto Bertoni, PARAGUAY,

Cockerell, 1920*a*, p. 466. Acapulco, MEXICO; (Knab). Cacao, Trece Aguas, GUATEMALA; (Goll.). Discuss the synonymy involving *mosquito* and *emerina*.

*duponti* Spinola, 1840, p. 124. Mexico. A *nomen nudum*.

**ferricauda** Cockerell, 1917*d*, p. 127. ♀. Porto Bello, PANAMA; IV; (Busck).

*flaveola*. See *tataira friesiella*.

**flaveola mediorufa** Cockerell, 1913, p. 12. ♀. Escuintla, GUATEMALA; XII; (Wheeler).

Wheeler, 1913, p. 8. Biology.

*flavocincta*. See *frontalis flavocincta*.

*friesiella*. See *tataira friesiella*.

*friesii*. See *amalthea*.

**frontalis** Friese, 1911, p. 455. ♀. HONDURAS.

Cockerell, 1912, p. 50. Chinandega, NICARAGUA; (Baker).

Cockerell, 1913, p. 11. Patulul, GUATEMALA; I; (Wheeler).

Wheeler, 1913, p. 4. Biology.

Cockerell, 1914*c*, p. 309. Guayaquil, ECUADOR.

Cockerell, 1920*a*, p. 462. Guadalajara, Jalisco, MEXICO; (Diguët).

**frontalis flavocincta** Cockerell, 1912, p. 50. ♀. Independencia, Parahyba, BRAZIL; (Mann and Heath).

*T. f. flavocincta* var. *a* Cockerell, 1912*b*, p. 314. ♀. Quirigua, GUATEMALA; (W. P. Cockerell).

Cockerell, 1917*d*, p. 217. "Baker and Ashmead formerly identified as *lineata* Mexican specimens of *T. frontalis flavocincta* Ckll., an insect easily separated by the shining mesothorax."

Cockerell, 1920*a*, p. 462. Paraiso, Canal Zone, PANAMA; I; (Busck).

*fulvipeda* and *fulvipes*. See *Melipona*.

**fulviventris** Guérin, 1845, p. 463. MEXICO.

Ducke, 1902, p. 312. ♀, ♂. Pará, BRAZIL.

Cockerell, 1912, p. 61. Porto Velho (This is located 7 k. N. of the old town, San Antonio, which is just below the lowest falls of the Madeira), Amazonas, BRAZIL; IX; (Mann and Baker).

Cockerell, 1912*b*, p. 314. Puerto Barrios, Quirigua, Amatillan, and Guatemala City, GUATEMALA; II; at *Zexmenia virgulta*, *Ipomæa quinquefolia*, and *Pontederia cordata*; (W. P. Cockerell).

Cockerell, 1913, p. 10. Zacapa, GUATEMALA; (Wheeler).

Friese, 1916, p. 299. San Carlos, COSTA RICA; (Burgdorf).

Cockerell, 1920*a*, p. 461. Cacao, Tres Aguas, GUATEMALA; (Goll). San Antonio, NICARAGUA. Sonsonata, SALVADOR; (Knab). Esparta, (Knab), and Pozo Azul, (Carriker), COSTA RICA. Cordoba, Mexico; (Knab). Alafaela and Gatun, (Jennings), and Las Cruces, Porto Bello, Paraiso, Alhajuelo, and Cabima, (Busck), PANAMA.

See *laboriosa* Smith.

*fuscata*. See *Melipona*.

**fuscipennis** Friese, 1900*a*, p. 385. ♀. GUATEMALA. COLOMBIA. Pará and Blumenau, BRAZIL. PANAMA. MEXICO.

Ducke, 1902, p. 314. ♂.

Silvestri, 1903, p. 187. Coxipó, BRAZIL. In nests of *Eutermes rippertii* (Ramb.).

See *amalthea* and *ruficrus corvina*.

**hellwegeri** Friese, 1900*a*, p. 389. ♀. Cuantla, Jacubaya, and Cornuvaca [Cuernavaca?], MEXICO.

**jatiformis** Cockerell, 1912*b*, p. 311. ♀. Quirigua\* and Puerto Barrios, GUATEMALA; I; (W. P. Cockerell).

**jaty** Smith, 1863, p. 507. ♂. BRAZIL.

Ducke, 1902, p. 307. Belem, Pará, BRAZIL. See also von Ihering, 1903, p. 220; Schultz, 1904, p. 825; and Strand, 1910, p. 559.

Cockerell, 1912*b*, p. 312. Amatitlan and Quirigua, GUATEMALA; II; at *Zexmenia virgulta*; (W. P. Cockerell).

Cockerell, 1913, p. 10. Escuintla and Patulul, GUATEMALA; I, XII; (Wheeler).

Wheeler, 1913, p. 2. Biology.

Cockerell, 1920*a*, p. 461. Ollas de Moka and San José, GUATEMALA. Pozo Azul, COSTA RICA; (Carriker). NICARAGUA. Tabernilla, Canal Zone, PANAMA; (Busck).

*kohli*. See *pallida*.

**laboriosa** Smith, 1862, p. 42. ♀. PANAMA.

Cockerell, 1910*b*, p. 366. "A specimen from Smith's collection appears to me to be identical with *T. fulviventris* Guér., as represented by [material collected by] Baker at Belize."



*ligata*. See *Melipona*.

*luteipennis*. See *bipunctata luteipennis*.

*mayarum*. See *zeigleri mayarum*.

*meade-waldoi*. See *dorsalis*.

*mediorufa*. See *flaveola mediorufa*.

*mellaria*. See *punctata*.

**mellicolor** Packard, 1869, p. 56. ♀. Between Quito and the Napo River, ECUADOR.

Cockerell, 1917*d*, p. 124. Pozo Azul, COSTA RICA; (Carriker).

**mexicana** Guérin, 1844, p. 464. MEXICO.

Schultz, 1904, p. 827. "Amazon," BRAZIL; (Bates).

Cockerell, 1913, p. 11. Rio Nautla, MEXICO; (Townsend).

**mirandula** Cockerell, 1917*d*, p. 122. ♀. Pozo Azul, COSTA RICA; VI; (Carriker).

*molesta* Puls. Dalla Torre, 1896, p. 581, erroneously records it from North America.

**musarum** Cockerell, 1917*d*, p. 123. ♀. "Philadelphia Banana R." COSTA RICA; (Knab). Boqueron River, PANAMA; V; (Busck).

Cockerell, 1920*a*, p. 464. Cotinga River, BRAZIL: 4000 feet; VIII; (Crampton). May be a subspecies of *rhumbleri* Friese.

**nigerrima** Cresson, 1878*a*, p. 181. ♀. MEXICO; (Sumichrast).

Cockerell, 1912*b*, p. 312. Quirigua, GUATEMALA; II; at *Pontederia cordata*, *Ipomæa sidæfolia*, and *Centrosema plumieri*; (W. P. Cockerell). P. 492: Rio Charape, PERU; 5000 ft.; IX; (Townsend).

Friese, 1916, p. 299. San José, COSTA RICA; (Schmidt).

See *silvestriana*.

**nigra** Cresson, 1878*a*, p. 181. ♀. MEXICO; (Sumichrast).

*Melipona cressoni* Dalla Torre, 1896, p. 577.

Cockerell, 1913, p. 12. Belize, BRITISH HONDURAS; (Baker).

*nigrita*. See *pallida nigrita*.

**nigrocyanea** Ashmead, 1900, p. 208. ♂. Leeward side of ST. VINCENT, W. I. (but in his list, p. 299, he gives it as from GRENADA, W. I.).

**opaca** Cockerell, 1917*d*, p. 126. ♂. Tabernilla, Canal Zone, PANAMA; VII; (Busck).

**pachysoma** Cockerell, 1917*d*, p. 125. ♀. Porto Bello\*, PANAMA; (Busck). Also Culebra, Canal Zone; (Rousseau).

**pallida** Latreille, 1804, p. 177, Pl. XIII, fig. 14. (*Apis*) ♀. FRENCH GUIANA.

Latreille, 1809, p. 183.

*Melipona pallida* Lamarck, 1817, p. 53.

*Trigona kohli* Friese, 1900a, p. 387. ♀. COLOMBIA. PERU. FRENCH and DUTCH GUIANA. Pará, São Paulo, Manaus, BRAZIL.

*Trigona kohli* Silvestri, 1903, p. 187. Coxipo, Cuyaba, and Urucum, BRAZIL; in nests of *Eutermis rippertii*.

Cockerell, 1912, p. 61. Abuná, on the Rio Madeira nearly opposite mouth of Rio Abuná, BRAZIL; IX; (Mann and Baker).

Wheeler, 1913, p. 3. Gatun, Canal Zone, PANAMA. Habits.

Cockerell, 1913, p. 10. Las Sabanas, PANAMA; XI; (Wheeler).

Cockerell, 1920a, p. 463. Rockstone, Tumatumari, Tukeit, and Kaieteur, BRITISH GUIANA; VII, VIII; (Lutz and Crampton). Tabernilla, La Chorrera, Rio Trinidad, and Alhajuelo, PANAMA; (Busck).

**pallida nigrata** Friese, 1901, p. 269. ♀, ♂. Cordoba, MEXICO.

*panamensis*. See *pectoralis panamensis*.

**parastigma** Cockerell, 1918, p. 165. ♀, ♂. N. n. for *stigma* Cockerell, 1912b, p. 312 (not Smith). Quirigua, GUATEMALA; (W. P. Cockerell).

*Trigona stigma*, Cockerell, 1913, p. 11. Las Sabanas, PANAMA, XI. Sangre Grande, TRINIDAD; III; (Scott).

*Trigona stigma* Wheeler, 1913, p. 5. Biology.

**pectoralis** Dalla Torre, 1896, p. 582. N. n. for *thoracica* Cresson, 1878a, p. 181 (not Smith). ♀. MEXICO; (Sumichrast).

Cockerell, 1913, p. 11. Escuintla, GUATEMALA, XII; (Wheeler). San Marcos, NICARAGUA; (Baker). Has been confused with *dorsalis* Smith.

Wheeler, 1913, p. 6. Biology.

See also Cockerell, 1915a, p. 31.

**pectoralis panamensis** Cockerell, 1913, p. 12. ♀. Las Sabanas, PANAMA; XI; (Wheeler).

Wheeler, 1913, p. 6. Biology.

**perangulata** Cockerell, 1917d, p. 125. ♀. Alhajuelo\*, Canal Zone, PANAMA; V; (Busck). Pozo Azul, COSTA RICA; VI; (Carriker).

*perilampoides*. See *punctata*.

**punctata** Smith, 1854, p. 409. ♀. Pará, BRAZIL.

*Trigona mellarius* Smith, 1862, p. 40. ♀. PANAMA.

*Trigona perilampoides* Cresson, 1878a, p. 181. ♀. MEXICO; (Sumichrast).

Friese, 1903, p. 361. Bartica, BRITISH GUIANA.

*T. mellaria* Cockerell, 1911b, p. 285. Piura, PERU; IV; at asclepiads; (Townsend).

*Trigona mellaria* W. P. Cockerell, 1912, p. 282, and 1912b, p. 312. Gualan and Quirigua, GUATEMALA; II; at *Calopogonium caeruleum*.

*Trigona perilampoides* Cockerell, 1913, p. 10. Escuintla, GUATEMALA; XII; (Wheeler).

Meade-Waldo, 1913, p. 497. Synonymy.

*rhumbleri*. See *musarum*.

**ruficus** Latreille, 1804, p. 176. (*Apis*) ♀. BRAZIL.

*Melipona citriperda* Illiger, 1806, p. 158.

Jurine, 1807, p. 246. ♀.

Von Ihering, 1903, p. 228. Biology.

Strand, 1910, p. 557. Asuncion, Trinidad, Villa Morra, and S. Lorenzo, PARAGUAY; XI, XII.

Cockerell, 1912, p. 60. Natal, Rio Grande do Norte, and Independencia, Parahyba, BRAZIL; VI; (Mann and Heath).

Cockerell, 1913, p. 12. Zacapa, GUATEMALA; XII; (Wheeler).

Wheeler, 1913, p. 7. Biology.

**ruficrus corvina** Cockerell, 1913, p. 12. ♀. Zacapa\*, GUATEMALA; XII. San José, COSTA RICA; XII. Gatun, Canal Zone, XI, and Las Sabanas, PANAMA. (Wheeler).

Wheeler, 1913, p. 7. Biology.

Cockerell, 1918*a*, p. 482. Chagres River, Canal Zone, PANAMA; X; chewing on the leaves of young citrus plants; (Morrison).

Cockerell, 1920*a*, p. 465. Tumatumari, BRITISH GUIANA; VII; (Lutz).

**salvatoris** Cockerell, 1917*d*, p. 124. ♀. San Salvador, SALVADOR; VIII. Escuintla, GUATEMALA; (Knab).

**schulthessi** Friese, 1900*a*, p. 386. ♀. GUATEMALA; (Stoll).

*silvestriana* Vachal. Cockerell, 1912*b*, p. 312, says that the one reported by Vachal from British Honduras may have been *nigerrima*. See also *amalthea*.

*stigma*. See *parastigma*.

**tataira friesiella** Cockerell, 1917*d*, p. 124. N. n. for *flaveola* Friese, 1900*a*, p. 389 (not Spinola). ♀. COLOMBIA. GUATEMALA; (Stoll). Espirito Santo, BRAZIL; (Michaëlis).

*Trigona flaveola* Friese, 1916, p. 299. San Carlos, COSTA RICA; (Burgdorf).

*thoracica*. See *pectoralis*.

**townsendi** Cockerell, 1911*b*, p. 286. ♀. Piura, PERU, X; (Townsend).

Cockerell, 1913, p. 10. Patulul, GUATEMALA; I; (Wheeler).

Wheeler, 1913, p. 5. Biology.

Cockerell, 1920*a*, p. 465. Boruca, COSTA RICA; VII; (Carriker). Escuintla, (Knab), and Cacao, Trece Aguas, (Schwarz and Barber), GUATEMALA. Alhajuelo, Canal Zone, PANAMA; III; (Busck).

*virgiliæ*. See *capitata virgilia*.

*wheeleri*. See *bipunctata wheeleri*.

**zexmenia** Cockerell, 1912*b*, p. 313. ♀. Quirigua\* and Gulán, GUATEMALA; II; at *Zexmenia virgulata* and *Vernonia aschenborniana*; (W. P. Cockerell).

**zieglerei** Friese, 1900*a*, p. 391. ♀. Amazonas and Pará, BRAZIL. VENEZUELA. PANAMA. See, also, Ducke, 1902, p. 308.

Friese, 1916, p. 299. COSTA RICA.

**ziegleri mayarum** Cockerell, 1912*b*, p. 311. ♀. Quirigua, GUATEMALA; (W. P. Cockerell.)

### BOMBIDÆ

Franklin (1913 and 1913*a*) has given such an excellent account of the American species that we have followed him for the most part, although we do not agree entirely with his treatment of varieties.

*Apathus* Newman

See *Psithyrus* and *Bombus*.

*Bombias* Robertson

See *Bombus*.

**BOMBUS** Latreille, 1802*a*, p. 385 (in part)

(See also Latreille, 1802, p. 437. Type: *Apis terrestris* Linnæus)

*Bremus* (Panzer, 1801; see, also, Morice and Durrant, 1914, p. 428) is accepted by some recent authorities as the name for this genus, but the case is still debatable and it seems better to use here the well-known name.<sup>1</sup>

**Bombias** Robertson, 1903, p. 176 (Type: *B. auricomus* Robertson) was proposed as a separate genus but we have followed Franklin, 1911, p. 161, in treating it as a subgenus. The subgenera may be further subdivided into "groups" as follows.

<i>Bombus</i>	<i>Bombias</i>
Dumoucheli Group	Fraternus Group
Pratorum "	Auricomus "
Kirbyellus "	
Borealis "	
Terrestris "	

See, in this connection, Radoszkowski, 1884*a*, pp. 51–92. The groups to which the North American species have been referred, chiefly by Franklin, 1913 and 1913*a*, are indicated here by initials in square brackets placed before the specific names.

Cockerell and McNary, 1902, p. 71, discuss mouth-parts in their relation to flowers.

The following names should be dropped as unrecognizable.

*Apis alata* Fabricius, 1798, p. 274, or *Bombus elatus* Fabricius, 1804, p. 352, may be *Apathus citrinus* Smith, 1854, p. 385—male of *Psithyrus laboriosus*.

<sup>1</sup>I do not consider that there is any valid reason for using *Bremus*.—T. D. A. C.

*Apis antiquensis* Fabricius, 1775, p. 380, was probably not a *Bombus*. If it was, the "Antigua" from which it was said to have come was almost certainly not a West Indian island as no *Bombus* has been found native in any of the Antilles. There is an Antigua in Guatemala, for example.

*Apis marylandica* Fabricius, 1798, p. 273.

*Bombus ornatus* Smith, 1854, p. 398. Handlirsch thought it might be a variety of *ternarius*.

*Bombus parvulus* Fabricius, 1804, p. 352.

*Bombus praticolus* Kirby, 1837, p. 274. Friese cites "*praticola* Nyl." as a variety of *lapponicus* subsp. *lugubris*.

[T.] **affinis** Cresson, 1863, p. 103. ♀\* ("♀" in error), ♂. CANADA\*; (Saunders). NEW YORK; (Norton).

*B. vagans* Cresson, 1863, p. 91. ♀, not ♀ and ♂.

Provancher, 1888, p. 339. Ottawa, CANADA; (Guignard).

Handlirsch, 1888, p. 229. Boston, MASSACHUSETTS; (Konopitsky). GEORGIA; (Morrison).

Titus, 1902, p. 38. COLORADO.

Grænicher, 1906, p. 20. Milwaukee County, WISCONSIN; at *Parnassia caroliniana*.

Grænicher, 1907, p. 91. ♀. WISCONSIN; at *Ribes oxycanthoides*.

Smith, 1910, p. 698. Greenwood Lake and Westville, NEW JERSEY.

Franklin, 1913, p. 277. "It is not very common in northern NEW ENGLAND but apparently grows much more so southward. In southern New England it is quite a common species, though less so than several others. It ranges southward through to Middle Atlantic States into SOUTH CAROLINA and GEORGIA, where it again appears to be rare, and westward certainly as far as Ramsey County, MINNESOTA, and probably somewhat farther." Pittsburgh, PENNSYLVANIA. Nest.

Franklin, 1915, p. 413. Fargo, NORTH DAKOTA; (Stevens).

Viereck, 1916, p. 757. Branford, Colebrook, New Haven, and Salisbury, CONNECTICUT.

Bequaert, 1920, p. 9. Auburndale, Dedham, and Sherborn, MASSACHUSETTS; at *Ceanothus americana*.

[T.] **affinis novæ-angliæ** Bequaert, 1920, p. 6. ForestHills\* and Sherborn, MASSACHUSETTS. Brooklyn, NEW YORK. Suggests that *B. justus* Titus, 1902, pp. 39, 43, from Woods Hole, Massachusetts, is this variety.

*alaskensis*. See *flavifrons*.

*alata*. See p. (502).

*albertensis*. See *rufocinctus*.

[P.] **alboanalis** Franklin, 1913, p. 385. ♀ or ♂. New name for the following misidentifications.

*B. sitkensis* Ashmead, 1902a, p. 126 (part). Kukak Bay, ALASKA; VII. Bering Island (Stejneger) and Copper Island (Barrett-Hamilton), SIBERIA.

(?) *B. sitkensis* Viereck, 1904, p. 99. Vancouver, BRITISH COLUMBIA; VI; (Harvey).

Franklin, 1913, p. 385. Kodiak and Popoff Island, ALASKA; (Kincaid).  
Smith 1857, p. 30, recorded the European *hortorum* from Lake Winnepeg; it "should be referred either to this species, the locality labels of Smith's specimens having been incorrect, or possibly to *B. mixtus*."

*albocaudata*. See *weisi*.

[P.] **alboniger** Franklin, 1915, p. 409. ♀, ♂, ♂. Cerro Zunil, GUATEMALA; 4000-5000 ft.; (Champion). Irazu, COSTA RICA; 6000-7000 ft.; (Rogers).

*alpina*. See *arcticus*.

[P.] **ambiguus** Franklin, 1911, p. 159. ♀, \* ♀. Sisson and Santa Cruz Mountains, CALIFORNIA. Keyport, WASHINGTON.

[D.] **americanorum** Fabricius, 1775, p. 380. (*Apis*) America.

(?) *Apis pennsylvanicus* De Geer, 1773, p. 575.

*Apis nidulans* Fabricius, 1798, p. 274. North America.  
Fabricius, 1804, p. 346.

*B. nidulans* Fabricius, 1804, p. 346.

*Bremus americanorum* Jurine, 1807, p. 260.

*Centris americanorum* Lepeletier, 1825, p. 795.

Harris, 1835, p. 70. MASSACHUSETTS.

Greene, 1860, p. 172. "Western America."

*B. pallidus* Cresson, 1863, p. 92. ♀. St. Louis, MISSOURI; (Norton).

*B. pennsylvanicus* Cresson, 1863, p. 94. ♀, ♂, not the ♂. CONNECTICUT. NEW YORK. NEW JERSEY. PENNSYLVANIA. DELAWARE. MARYLAND. VIRGINIA. ILLINOIS. KANSAS. FLORIDA. TEXAS. The nest (p. 164) from Gloucester, NEW JERSEY, contained "*Apathus elatus*."

*Apathus elatus* Cresson, 1863, p. 114. ♂. Gives as synonyms *Apis alata* Fabricius, 1798, p. 274, and *Bombus elatus* Fabricius, 1804, p. 352.

*B. pennsylvanicus* Packard, 1864, p. 111. MAINE. Boston, MASSACHUSETTS.

*B. pennsylvanicus* Riley, 1870, p. 303. Le Roy, NEW YORK.

*B. pennsylvanicus* Cresson, 1872, p. 285. Bosque County (Belfrage) and Dallas County (Boll), TEXAS.

*B. pennsylvanicus* Cresson, 1875, p. 728. Eastern NEVADA; (Yarrow).

*B. pennsylvanicus* Cresson, 1876, p. 210. Davenport, IOWA; (Putnam).

*Apathus elatus nidulans*, *B. pennsylvanicus americanorum* and *B. p. pallidus* Cresson, 1879, p. 230.

*B. pennsylvanicus* Patton, 1879, p. 367. Northwestern KANSAS; IX; at *Solidago*; (Willis'ou).

*B. pennsylvanicus* Bowles, 1880, p. 33. Montreal and Quebec, CANADA;

(Provancher).

*Apathus elatus* Provancher, 1882, p. 269. St. Anne de Lapérade, CANADA.

*B. pennsylvanicus* Handlirsch, 1888, p. 238 (part). GEORGIA.

*B. pennsylvanicus* Coville, 1890, p. 200. Discusses the "elatus" question. See also Robertson, 1890, p. 40.

Robertson, 1891a, pp. 569-597. Carlinville, ILLINOIS; at *Asclepias verticillata*, *incarnata*, *cornuti*, and *purpurescens*, *Gentiana andrewsii*, *Linaria vulgaris*, *Phlox divaricata*, *Polemonium reptans*, *Hydrophyllum virginicum* and *appendiculatum*, *Mertensia virginica*, *Ipomœa pandurata*, *Convolvulus sepium*, *Solanum nigrum* and *carolinense*, *Verbascum thapsus*, *Collinsia verna*, *Pentstemon pubescens* and *lævigatus* *digitalis*, *Veronica virginica*, *Seymeria macrophylla*, *Gerardia pedicularia*, *purpurea*, *tenuifolia*, and *auriculata*.

Robertson, 1894, pp. 436-475. Macoupin County, ILLINOIS; at *Prunus serotina*, *Rubus villosus*, *Potentilla canadensis*, *Rosa humilis* and *setigera*, *Pyrus coronaria*, *Cratægus coccinea* and *crusgalli*, *Veronia fasciculata* (printed *noveboracensis* but changed by author in copies he sent out), *Lacinaria* ["*Liatriis*"] *pycnostachya*, *Solidago canadensis*, *nemoratis*, and *lanceolata*, *Boltonia asteroides*, *Aster novæangliæ* and *paniculatus*, *Antennaria plantaginifolia*, *Silphium laciniatum*, *Helianthus mollis*, *grosseserratus*, and *tuberosus*, *Verbesina helianthoides*, *Coreopsis palmata*, *tripteris*, and *aristosa*, *Bidens chrysanthemoides*, *Helinium autumnale*, and *Cnicus altissimus*, *altissimus discolor*, and *lanceolatus*.

Robertson, 1895, pp. 140-143, 145, 148. At *Gentiana puberula*, *Frasera carolinensis*, *Phlox pilosa*, *Lithospermum canescens*, *Mimulus alatus* and *ringens*.

Robertson, 1896, pp. 156, 159, 160, 162, 165, 175, 176, 178. At *Podophyllum peltatum*, *Æsculus*, *Astragalus canadensis* and *mexicanus*, *Gymnocladus canadensis*, *Aster ericoides viollosus*, *Silphium perfoliatum*, and *Rudbeckia laciniata*.

Robertson, 1896a, p. 158. At *Rhamnus lanceolata*.

*Psithyrus elatus* Dalla Torre, 1896, p. 569.

Cockerell, 1898d, p. 71. Mesilla Valley, NEW MEXICO.

Robertson, 1898a, pp. 230-244. At *Lespedeza reticulata*, *Cornus paniculata*, *Viburnum pubescens*, *Lonicera sullivantii*, and *Helianthus divaricatus*.

Cockerell and Porter, 1899, p. 388. Las Vegas, NEW MEXICO; VI-X; at *Cleome serrulata*; (Rishel).

*Psithyrus cevallia* Cockerell, 1899, p. 157. Las Cruces, NEW MEXICO; VIII; at *Cevallia sinuata*. Also Mesilla Park, NEW MEXICO; XI; at *Aster canescens viscosus*.

*B. pennsylvanicus* Cockerell, 1899c, p. 3. Baldwin, Douglas County, KANSAS; (Bridwell).

*B. pennsylvanicus* Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

*B. pennsylvanicus* Meehan, 1902, p. 35. Visited blue *Lobelia syphilitica* but not scarlet *Lobelia cardinalis*.

*B. titusi* Ashmead, 1902, p. 50. ♂. Lamar, COLORADO; IX; (Gillette); see Titus, 1902, p. 42.

Barks, 1902, p. 212. Sleeping habits.

*B. pennsylvanicus* Titus, 1902, p. 42. Fort Collins, Foothills, Livermore, Virginia Dale, Julesburg, and Rocky Ford, COLORADO; VI-IX.

*B. pennsylvanicus* Harris and Kuchs, 1902, p. 25. St. Joseph, MISSOURI; at *Solanum rostratum*.

Viereck, 1903a, p. 119. College Park and Chestertown, MARYLAND, VI-X; (Vanatta).

*B. pennsylvanicus* Viereck, 1906, p. 238. Oak Creek Canyon, ARIZONA; VIII; (Snow).

Britton and Viereck, 1906, pp. 217, 220. At *Pyrus malus* and *Rubus nigrobaccus*.

Cockerell, 1906, p. 313. "Upper to Middle Sonoran."

*B. fervidus* Fairchild and Barrett, 1906, p. 13 (?; synonymy *vide* Franklin). Arlington Farm, VIRGINIA (?). Description of copulation.

Grænicher, 1907, pp. 22, 31, 40, 44, 93, 94. ♀. WISCONSIN; at *Uvularia grandiflora*, *Erythronium americanum*, *Salomonium biflora*, *Trillium erectum*, *Ribes cynosbati* and *gracile*.

Swenk, 1907, p. 296. Lincoln, Omaha, South Bend, Cedar Bluffs, Weeping Water, Nebraska City, West Point, Neligh, Broken Bow and Brown, Rock, and Hitchcock Counties, NEBRASKA; at *Astragalus*, *Rubus*, *Malus*, *Petalostemon*, *Berberis*, *Carduus*, *Cassia*, *Psoralea*, *Monarda*, *Solanum*, *Vernonia*, *Solidago*, and *Helianthus*.

Cockerell, 1907b, p. 257. Boulder, COLORADO; VIII, IX; at sunflower and *Melilotus alba*; (Weston, W. P. Cockerell, Rohwer).

*B. pennsylvanicus* Fletcher and Gibson, 1907, p. 129. Ottawa, ONTARIO; (Fletcher).

*B. pennsylvanicus* Tucker, 1909, p. 277. Wichita and Lawrence, KANSAS; V-IX.

Cockerell, 1911, p. 391. Cuttyhunk Island, MASSACHUSETTS; VII.

Grænicher, 1911, p. 249. Mouth of Yellow River in Burnett County, Hudson in St. Croix County, Prescott and Maiden Rock in Pierce County, and Fountain City in Buffalo County, WISCONSIN; VII, VIII.

*B. pennsylvanicus* Franklin, 1913, p. 399. Hanover, NEW HAMPSHIRE. Oaxaca, MEXICO. "Common throughout the United States, east of the Rocky Mountains, except in some of the most northern ones."

*B. pennsylvanicus* Franklin, 1915, p. 414. Fargo, NORTH DAKOTA; (Stevens). Jalisco, MEXICO; (Schumann).

*B. pennsylvanicus* Cockerell, 1917a, p. 192. San Benito, TEXAS; (W. P. Cockerell).

Cockerell, 1919c, p. 27. Boulder, COLORADO; X; at *Salvia pitcheri*.

Bequaert, 1920, p. 9. Botson, Lexington, and Sherborn, MASSACHUSETTS.

It seems that *americanorum* is a better name than *pennsylvanicus*, as the identity of the latter is too uncertain; and Franklin, after an exhaustive discussion, states that he is of the opinion "that De Geer's figure was really made from a specimen of *auricomus*." In this connection see Robertson, 1920, p. 14.

*antiguensis*. See p. (503).

[B.] **appositus** Cresson, 1878a, p. 183. ♀\*, ♂, ♂. COLORADO.\* NEW MEXICO. UTAH. NEVADA.



(?) *B. borealis* Cresson, 1876, p. 210. Empire, COLORADO.

Cockerell, 1910*d*, p. 128. New Castle, COLORADO; at *Carduus*; (Robbins).

Tucker, 1909, p. 277. Buffalo, COLORADO; VIII.

Franklin, 1913, p. 285. "Appears to be confined to the mountain ranges and higher lands of the western United States and to the southwestern portion of Canada (probably the lower lands)." WASHINGTON. Chino, southern CALIFORNIA. Western MONTANA. WYOMING.

Cockerell, 1915*b*, p. 483. Corona, COLORADO; above timber line; at *Trifolium dasy carpum*; (Kenoyer).

Sladen, 1919, p. 126. Connects *borealis* with the Eurasian *distinguendus*.

See *borealis*.

[K.] **arcticus** Kirby, 1821, p. 216. ♀, ♂. Boothia Felix, ARCTIC AMERICA. (See Meade-Waldo, 1916, p. 469.)

For various probable but uncertain references in synonymy see Franklin, 1913, p. 302, and Dalla Torre, 1896, pp. 511, 524.

*B. grælandicus* (Westermann) Smith, 1854, p. 393, ♀. GREENLAND.

(?) *B. hyperboreus* Schmiedeknecht, 1882, p. 308. Arctic regions of EUROPE and SIBERIA.

*B. hyperboreus* Fox, 1892, p. 135. Disco Island, lat. 69° 10', West GREENLAND; VI, VIII; (Mengeland Hughes).

*Bremus hyperboreus* Frison, 1919, p. 456. 76° 30' N. to 78° 20' N.; Crocker Land Expedition. Believes that *arcticus* = *hyperboreus* Schönherr, 1809, p. 57.

Sladen, 1919*a*, p. 28*g*. ♂, ♀. Bernard Harbour, NORTHWEST TERRITORIES and Herschel Island, YUKON TERRITORY; (Johansen). Collinson Point (Johansen), Barter Island (Jenness), ALASKA; "Cape Ross, Melville Island, Northwest Territories, by Emiu (Eskimo)," (V. Stefansson) . . . . . *Bombus arcticus* is probably the *B. hyperboreus* of European authors, found in Greenland and Arctic Eurasia."

*asptoni*. See *Psithyrus ashtoni*.

*astragali*. See *rufocinctus*.

*atrifasciatus*. See *kirbyellus*.

*aztecus*. See *fervidus dorsalis*.

[A.] **auricomus** Robertson, 1903, pp. 176, 177. (*Bombias*) ♀, ♂, ♂. Carlinville, ILLINOIS.

*B. pennsylvanicus* Cresson, 1863, p. 94. ♀ (part), ♂ (part), ♂.

*B. nevadensis* Handlirsch, 1888, p. 245. ♂.

*B. pennsylvanicus* Robertson, 1890, p. 40.

*B. pennsylvanicus* Robertson, 1891*a*, pp. 571, 573, 574, 580, 589, 591. At *Asclepias incarnata*, *cornuti*, and *sullivantii*, *Mertensia virginica*, *Collinsia verna*, and *Pentstemon lævigatus digitalis*.

*B. pennsylvanicus* Robertson, 1894, pp. 438-475. Macoupin County, ILLINOIS; at *Rubus villosus*, *Pyrus coronaria*, *Cratægus crusgalli*, *Vernonia fasciculata* (printed *noveboracensis* but changed by the author in copies sent out), *Eupatorium purpureum*, *Helianthus grosseserratus*, and *Cnicus altissimus*, *altissimus discolor*, and *lancoelatus*.

*B. pennsylvanicus* Robertson, 1895*a*, p. 143. At *Phlox pilosa*.

(?) *B. pennsylvanicus* Britton and Viereck, 1906, p. 213. CONNECTICUT; at *Ribes nigrum*.

*Bombias auricomus* Viereck, 1906, p. 240. Magdalena Mountains, NEW MEXICO; VII; (Snow).

*Bombias auricomus* Swenk, 1907, p. 295. Lincoln, Omaha, South Bend, West Point, and Dundy County, NEBRASKA; V-X; at *Ribes*, *Astragalus*, *Fragaria*, *Rubus*, *Antirrhinum*, and *Carduus*.

*Bombias auricomus* Smith, 1910, p. 699. Caldwell and Westville, NEW JERSEY.

*Bombias auricomus* Grænicher, 1911, p. 249. Hudson in St. Croix County and Prescott in Pierce County, WISCONSIN; VII, VIII.

*B. (Bombias) auricomus* Franklin, 1913, p. 413. CANADA (probably southern Ontario). NEW YORK. MASSACHUSETTS. PENNSYLVANIA. MARYLAND. DELAWARE. VIRGINIA. NORTH CAROLINA. TENNESSEE. KENTUCKY. OHIO. INDIANA. ILLINOIS. MICHIGAN. St. Paul, MINNESOTA. MISSOURI. IOWA. Greenville, TEXAS. KANSAS. Virginia Dale, COLORADO.

*Bombias auricomus* Viereck, 1916, p. 759. Branford, CONNECTICUT; V.

*badiocollis*. See *ephippiatus*.

*balteatus*. See *kirbyellus*.

*bicolor*. See *rubicundus*.

*bifarius*. See *edwardsii*.

[P.] **bimaculatus** Cresson, 1863, p. 92. ♂. CONNECTICUT; (Norton).

*B. ridingsii* Cresson, 1878a, p. 182. ♀, ♂. WEST VIRGINIA; (Ridings). Cresson, 1879, p. 230. MASSACHUSETTS. *B. ridingsii*: CANADA.

*B. ridingsii* Robertson, 1891a, pp. 579, 580, 589, 594. At *Hydrophyllum virginicum* and *appendiculatum*, *Mertensia virginica*, *Collinsia verna*, and *Seymeria macrophylla*.

*B. ridingsii* Robertson, 1894, p. 447. Macoupin County, ILLINOIS; at *Amelanchier canadensis*.

*B. separatus* Dalla Torre, 1896, p. 546 (part).

*B. ridingsii* Britton and Viereck, 1906, pp. 216, 217, 220. CONNECTICUT; at *Prunus persica*, *Pyrus malus*, and *Rubus nigrobaccus* and *strigosus*.

*B. ridingsii* Swenk, 1907, p. 296. South Bend and Omaha, NEBRASKA; V; at *Rubus occidentalis*. "We have never taken workers or males" in Nebraska.

Lovell, 1907, p. 199. Waldoboro, MAINE; at *Rhodora canadensis* and *Diervilla trifida*.

Smith, 1910, p. 698. Philadelphia, PENNSYLVANIA.

Franklin, 1913, p. 305. "Very rare in southeastern CANADA, ranging southward through New England and Middle Atlantic States into GEORGIA and ALABAMA" and LOUISIANA.

Viereck, 1916, p. 758. New Haven, Branford, and Southington, CONNECTICUT; V-VII.

Bequaert, 1920, p. 9. Forest Hills, Cohasset, and Sherborn, MASSACHUSETTS.

[P.] **bolsteri** Franklin, 1913, p. 357. ♀, ♂. Bay of Islands, Little River, and Humber River near Deer Lake, NEWFOUNDLAND.

Lutz, 1916, p. 515. ♂. Spruce Brook (Leng) and Codroy (Gratacap), NEWFOUNDLAND.

[B.] **borealis** Kirby, 1837. ♀. Lat. 65°, North America.

Cresson, 1864, p. 41. ♀, ♂. CANADA; (Saunders). NEW YORK; (Ashton).

*B. fervidus* Putnam, 1864, p. 99. Bridport, VERMONT. Warwick, MASSACHUSETTS. Nest.

Cresson, 1879, p. 230. NEW HAMPSHIRE. WEST VIRGINIA.

*B. fervidus* Radoszkowski, 1884a, p. 77. Based one of his groups on this species.

Provancher, 1888, p. 340. Ottawa and Cap Rouge, CANADA.

Coville, 1890, pp. 198. 201. Ithaca, NEW YORK. Habits.

Evars, 1896, p. 13. Sudbury, ONTARIO.

Lovell, 1898a, p. 387. At *Cornus stolonifera*.

Lovell, 1907, p. 198. Waldoboro, MAINE; VIII-IX; at *Pontederia cordata*, *Vicia cracca*, and *Trifolium pratense*.

Fletcher and Gibson, 1908, p. 111. Beaver Lake, ALBERTA; (Halkett).

Smith, 1910, p. 698. NEW JERSEY.

Gränicher, 1911, p. 249. Gordon in Douglas County, Swiss and the mouths of the Nemakagon and Yellow Rivers in Brunett Counties, Divide in Vilas County, and Jacksonport in Door County, WISCONSIN; VII, VIII.

Franklin, 1913, p. 282. NEWFOUNDLAND. NEW BRUNSWICK. QUEBEC. Nepigon and Lake of Bays, ONTARIO. MANITOBA. Amherst, MASSACHUSETTS. MICHIGAN. St. Paul and Lake Itasca, MINNESOTA. "In western Canada its range seems to end on the eastern side of the Rocky Mountains where it is completely replaced by its close ally, *B. appositus*."

Franklin 1915, p. 414. Fargo, NORTH DAKOTA. Detroit and Moorhead, MINNESOTA; (Stevens).

Lutz, 1916, p. 520. Boisedale and Cape Breton Island (Leng) and Codroy (Gratacap), NEWFOUNDLAND. Campo Bello Island, NEW BRUNSWICK.

Sladen, 1919, p. 126. Related, through *appositus*, with the Eurasian *distinguendus*.

See *appositus*.

*brachycephalus*. See *diligens*.

*cayennensis* and *cayennensis*. See *incarum*, *medius*, and *mexicanus*.

[D.] **californicus** Smith, 1854, p. 400. ♀ (not the ♂). CALIFORNIA.

Cresson, 1863, p. 97. ♀ only.

*B. dubius* Cresson, 1863, p. 97. ♀ (the "?" removed in Cresson, 1916, p. 117). Western KANSAS; (Norton).

Cresson, 1875, p. 728. Eastern NEVADA; (Yarrow).

*Apathus*? *californicus* Cresson, 1879, p. 214. ♂. CALIFORNIA; (Edwards).

Cresson, 1879, p. 230. NEVADA. OREGON.

*B. dubius* Cresson, 1879, p. 230. COLORADO.

*B. consanguineus* Handlirsch, 1888, p. 239. ♀, ♂. Vancouver Island and mainland, BRITISH COLUMBIA.

Fox, 1893, p. 23. El Rosario, Lower California. MEXICO; V; (Haines). See Cockerell, 1899b, p. 19.

*B. dubius* Cockerell, 1893, p. 338. Near Swift Creek, Custer County, COLORADO.

Fowler, 1902, p. 317. Berkeley, Redoude, and San Diego, CALIFORNIA; II-XI.

*B. dibius* Titus, 1902, p. 40. Fort Collins and Westlake, 8000 ft., COLORADO, VII.

*B. neglectulus* Ashmead, 1902, p. 124. ♀, ♂. ALASKA.

Cockerell, 1903, p. 452. Alum Rock Park, CALIFORNIA; (Ehrhorn).

Viereck *et al.*, 1904, p. 99. Corvallis and Mt. Hood, OREGON. WASHINGTON. V, VI, IX-XI.

Cockerell, 1904e, p. 89. Los Angeles and Catalina Island, CALIFORNIA.

*Psithyrus californicus* Cockerell, 1904e, p. 90. Switzers, CALIFORNIA.

*B. dubius* Cockerell, 1906d, p. 453. Florissant, COLORADO; VII; at *Iris missouriensis* and white *Carduus*.

Fletcher and Gibson, 1907, p. 128. Prince Albert, and Calgary, ALBERTA; VII.

Fletcher and Gibson, 1908, p. 111. Olds, ALBERTA, (Willing); and Duncans, (Fletcher). If this Duncans is the one in Ontario the record seems doubtful.

Tucker, 1909, p. 277. Tabernash, COLORADO; VIII.

Davidson, 1911, p. 66. San Bernardino Mountains up to 6000 ft., CALIFORNIA.

Franklin, 1913, p. 393. "All the Pacific states and territories, except Montana and Arizona" (See below). Magdalena Mountains, NEW MEXICO.

Franklin, 1915, p. 414. Beaver Creek, MONTANA; 6300 ft.; (Hunter).

See *vosnesenskii*.

*cariei*. See *frigidus*.

*castoris*. See *rufocinctus*.

[P.] *centralis* Cresson, 1864, p. 41. ♀. Fort Crook, CALIFORNIA; (Ulke). 1879, p. 231; COLORADO.

*B. justus* Cresson, 1878a, p. 187. COLORADO; (Morrison). 1879, p. 231: NEVADA.

*B. flavifrons* Handlirsch, 1888, p. 231 (part).

*B. justus* Cockerell, 1898d, p. 71. Santa Fé Canyon, Ruidoso Creek, NEW MEXICO.

*B. monardæ* Cockerell and Porter, 1899, p. 387. Monument Rock, Santa Fé Canyon\* (8000 ft.) and Rio Ruidoso (White Mountains, 6500-6600 ft.), NEW MEXICO; VII, VIII; at *Monarda stricta*, *Potentilla thurberi*, and *Allium cernuum*; (Cockerell, Townsend).

*B. justus* Cockerell, 1898d, p. 71, and Cockerell and Porter, 1899, p. 390. NEW MEXICO: Beulah; Harvey's Ranch, 9600 ft.; South Fork, Eagle Creek, White Mountains, 8000-8900 ft.; Rio Ruidoso, 6500-8300 ft.; east of Santa Fé, 7400 ft.; Santa Fé Canyon, 7600 ft; V-VIII; at *Iris missouriensis*, *Sicyos parviflorus*, *Brittonastrum pallidum*, *Verbascum thapsus*, *Prunella vulgaris*, *Vicia*, *Monarda stricta*, *Mentzelia rusbyi*, *Solidago trinervata*, *Verbena stricta*, *Allium cernuum*, *Geranium richardsoni*, *Senecio*, *Cnicus* and *Rudbeckia*; (Porter, Cockerell, Townsend, Wootton).

*B. justus* Titus, 1902, p. 43. Livermore, Fort Collins, Virginia Dale, Estes Park (Gillette), North Park (Ball), and Palmer Lake, COLORADO; VII, VIII. The record from Woods Hole, Massachusetts, is certainly either a mistake or an accident. (See *affinis novæ-angliæ*.)

Cockerell, 1904, p. 234. Manitou, COLORADO; IV; at *Ribes leptanthum*.

Cockerell, 1906, p. 313. Clouderoft, NEW MEXICO. "Canadian Zone."

*B. justus* Cockerell, 1906d, p. 453. Florissant, and Four Mile on the Cripple Creek road (Bentley), COLORADO; VI, VII.

*B. justus* Swenk, 1907, p. 297. "Pine Ridge Country," Sioux County, NEBRASKA; V-IX.

*B. justus* Cockerell, 1907b, p. 257. Boulder, COLORADO.

(?) *B. praticolus* Fletcher and Gibson, 1908, p. 111 (part).

Cockerell, 1910d, p. 128. Meeker, New Castle, and Rifle Gap, COLORADO; at *Cleome serrulata*; (Robbins). *Centralis* considered a valid race of *justus*.

*B. justus* Davidson, 1911, p. 66. Seven Oaks and Bear Valley, San Bernardino Mountains, CALIFORNIA.

Franklin, 1913, p. 371. BRITISH COLUMBIA. WASHINGTON. IDAHO. WESTERN MONTANA. OREGON. WYOMING. NEVADA. UTAH. ARIZONA.

*B. justus* Cockerell, 1919c, p. 272, Gold Hill, COLORADO; 8600 ft.; VII; at *Frasera*.

*cevallia*. See *americanorum*.

[P.] **cockerelli** Franklin, 1913, p. 356. ♀, ♂. New name for *B. prunellæ* Cockerell and Porter, 1899, p. 391, in part. Rio Ruidoso, White Mountains, NEW MEXICO; 6500-8200 ft.; VII, VIII; at *Monarda stricta*, *Verbena stricta*, *Solidago trinervata*, *Prunella vulgaris*, *Potentilla thurberi*, *Rhus glabra*, *Sicyos parviflorus*, *Geranium atropurpureum*, *Vicia* near *pulchella*, *Commelina dianthifolia*, and *Mentzelia rusbyi*. Franklin states that Clouderoft, NEW MEXICO, is the only other known locality and gives synonymy which questionably involves *B. consimilis* of Viereck, 1902, p. 44 (Beulah, NEW MEXICO; VI) and of Cockerell, 1906, p. 313.

*B. prunellæ* Cockerell, 1901c, p. 38. At *Commelina dianthifolia*.

*coloradensis*. See *occidentalis*.

*columbicus*. See *vosnesenskii*.

*consanguineus*. See *californicus*.

*consimilis*. See *cockerelli* and *vagans*.

*cooleyi*. See *edwardsii*.

[P.] **couperi** Cresson, 1878a, p. 185. ♀. CANADA; (Couper).

Fletcher and Gibson, 1908, p. 111. Nepigon, ONTARIO; (Fletcher). ANTI-COSTI ISLAND, Canada; (Schmitt).

Franklin, 1913, p. 360. LABRADOR. Mountains east of Codroy and Bay of Islands, NEWFOUNDLAND. Isle Royale, MICHIGAN.

*Bremus couperi* Frison, 1919, p. 451. ♀, ♂. Painsec, NEW BRUNSWICK; (Sladen).

See *frigidus*.

*cressoni*. See *nevadensis*.

[F.] **crotchii** Cresson, 1878a, p. 184. ♀. CALIFORNIA; (Crotch).

*B. nigrocinctus* Provancher, 1888, p. 342.

Fowler, 1902, p. 317. Tulare and Ventura, CALIFORNIA; V, VI.

*B. (Bombias) crotchii* Franklin, 1913, p. 434. Los Angeles County, San Bernardino County, San José, Ontario, Claremont, and San Diego, CALIFORNIA.

*derhamellus*. See *frigidus* and *sitkensis*.

[F.] **diligens** Smith, 1861, p. 154. Oaxaca, Mexico.

*B. brachycephalus* Handlirsch, 1888, p. 244. ♀, ♂, ♂. Orizaba, MEXICO; (Bilimek).

Fox, 1895, p. 272. Tepic, MEXICO.

*B. (Bombias) brachycephalus* Franklin, 1913a, p. 143.

Franklin, 1915, p. 411. Omilteme, Guerrero, MEXICO; 8000 ft. El Jicaro, Vera Pas, and San Geronimo, GUATEMALA; (Champion).

*dimidiatus*. See *flavifrons*.

[D.] **dolichocephalus** Handlirsch, 1888, p. 244. ♀, ♂. Orizaba, MEXICO; (Bilimek).

Franklin, 1913a, p. 108. ♂. Orizaba, MEXICO. Olas de Moka, Solola, GUATEMALA; 3000 ft.

Franklin, 1915, p. 415. MEXICO: Amula (6000 ft.), Xyucumanatlan (7000 ft.), and Acaguizotla (3500 ft.)—all in Guerrero—; Tepic and Jalisco, (Schumann).

*dorsalis*. See *fervidus dorsalis*.

*dubius*. See *californicus*.

[P.] **edwardsii** Cresson, 1878a, p. 184. ♀, ♂\*, (not ♂). CALIFORNIA.\* Vancouver Island, BRITISH COLUMBIA; (Edwards). COLORADO; (Morrison). Possibly one of the last two is erroneous.

(?) *B. ternarius* Putnam, 1876, p. 189, and Cresson, 1876, p. 210. Fort Bridger, WYOMING. Empire, COLORADO.

*B. bifarius* Cresson, 1878a, p. 185. ♀\*, ♂. COLORADO.\* Vancouver Island, BRITISH COLUMBIA.

*B. vancouverensis* Cresson, 1878a, p. 187. ♂ (in part). Vancouver Island, BRITISH COLUMBIA; (Edwards).

*B. ternarius lacustris* Handlirsch, 1888, p. 230.

*B. nearcticus* Handlirsch, 1888, p. 243. ♀, ♂, ♂. BRITISH COLUMBIA.

(?) *B. ternarius* Cockerell and Porter, 1899, p. 390. Rio Ruidoso (6700–8200 ft.), Beulah, Harvey's Ranch (9600 ft.), Aztec, and Mescalero, NEW MEXICO; V, VII, VIII; at *Rudbeckia laciniata*, *Verbascum thapsus*, *Mentzelia rusbyi*, *Monarda stricta*, *Vicia near pulchella*, *Solidago trinervata*, *Iris missouriensis*, and wild plum; (Townsend, Porter, Nead, and Otis). This reference may belong to *huntii*.

*B. bifarius* Titus, 1902, p. 43. Fort Collins, Boulder, Westlake, Rist Canyon, Marshall Pass, Alder, Lamar, Cimmaron, Ward, Muldoon, Palmer

Lake, Ridgeway, and Steamboat Springs, COLORADO; V-VIII; (Bruneo, Gillette, and Ball).

*B. "nearcticus"* Ashmead, 1902a, p. 127. Juneau, VII, and Wrangell (Wickham), ALASKA.

*B. ternarius bifarius* Viereck, 1902, p. 44. Beulah, NEW MEXICO; VI; at *Jamesia americana*.

*B. cooleyi* Morrill, 1903, p. 222. ♀. Bridger Mountain (6000 ft.), Bozeman (4800 ft.), Middle Creek Canyon, and Bridgen [Bridger ?] Canyon, MONTANA; VI, VII; (Cooley).

*B. bifarius* Viereck *et al.*, 1904, p. 99. WASHINGTON.

(?) Viereck *et al.*, 1904, p. 100. Fort McLeod, CANADA; VIII.

Cockerell, 1906, p. 313. Pecos, NEW MEXICO; VI; at *Fallugia*; (W. P. Cockerell).

Cockerell, 1906a, p. 74. Ward, COLORADO; 9000 ft.; at *Phacelia*.

Cockerell, 1907c, p. 97. CALIFORNIA. NEVADA.

Fletcher and Gibson, 1908, p. 111. Mt. Arrowsmith and Duncans, BRITISH COLUMBIA; (Fletcher). Banff, ALBERTA; (Sanson).

*B. edwardsii cooleyi* and *B. bifarius* Cockerell, 1910a, p. 25. Calgary, ALBERTA; (Dod).

(?) Davidson, 1911, p. 66. Sequoia National Park, San Bernardino Mountains, and San Fernando, CALIFORNIA. Nest. These may be *fernaldi*, according to Franklin, 1913, p. 329.

Franklin, 1913, p. 328. IDAHO. UTAH.

*Bombus edwardsii kenoyeri* and *B. e. bifarius* Cockerell, 1915b, p. 483. ♀. Tolland, COLORADO; at *Frasera stenosepala*; (Kenoyer).

*B. edwardsii bifarius* Cockerell, 1919b, p. 294. Timber line on Longs Peak trail, COLORADO; at *Elephantella*; (W. P. Cockerell).

See *fernaldi* and *rufocinctus*. Probably the varieties, especially *bifarius*, should be distinctly recognized.

*elatus*. See *americanorum*, *fervidus*, and *perplexus*.

[P.] *ephippiatus* Say, 1837, p. 414. MEXICO.

*B. lateralis* Smith, 1879, p. 134. ♀. Val de Fuego, GUATEMALA. Irazu, COSTA RICA; 6000-7000 ft.

*B. ephippiatus lateralis* Handlirsch, 1888, p. 233.

*B. schneideri* and var. *fuliginosus* Friese, 1903, p. 253. San Carlos, COSTA RICA. Chiriqui, PANAMA.

*B. ephippiatus lateralis* Crawford, 1906, p. 157. ♀, ♂. Cartago (4950 ft.), San José (3550 ft.), and (Bruner) Volcano Irazu (6000-9000 ft.), COSTA RICA; VI; at *Dahlia*. What appears to be the last paragraph of Crawford's remarks on this species refers to *volucelloides*, the name having been omitted in printing.

Franklin, 1913a, p. 86. San Carlos, La Estrella de Cartago, and Zarsero, COSTA RICA. ECUADOR.

Franklin, 1915, p. 414. Purula, GUATEMALA. Volcan de Chiriqui, PANAMA; 2000-3000 ft.; (Champion). Rio Sarstoon, BRITISH HONDURAS.

*B. schneideri* Friese, 1916, p. 298. San Mateo, (*B. schneideri badiocollis* Friese) San Carlos, and (*B. ephippiatus lateralis* Smith, p. 299) San Carlos. all COSTA RICA.

See *nigrodorsalis*, *pulcher*, and *wilmatta*.

*ephippiatus pulcher*. See *formosus*.

*expallidus*. See *ternarius expallidus*.

[P.] **fernaldi** Franklin, 1911, p. 157. ♀, ♂, ♂. Santa Clara County, Lake County, Nevada County, San José County, Mendocino, Sonoma County, Palo Alto, and Yosemite, CALIFORNIA. NEVADA. And, *B. edwardsii* Fowler, 1902, p. 317: Berkeley and San Francisco, CALIFORNIA; II-X. Franklin designated Fowler's specimens as the types of *fernaldi* but asks if "those specimens [can] be identified with certainty." Fowler's description, in his table, clearly indicates *fernaldi* rather than *edwardsii* as these are defined by Franklin.

*ferrugineus*. See *terrestris moderatus*.

[D.] **fervidus** Fabricius, 1798, p. 274. (*Apis*) North America.

Fabricius, 1804, p. 352.

Harris, 1835, p. 70. MASSACHUSETTS.

Lepeletier, 1837, p. 470. ♀. Philadelphia, PENNSYLVANIA.

Cresson, 1863, p. 93. ♀, ♂, ♂. CANADA. CONNECTICUT. NEW YORK. DELAWARE. VIRGINIA. KANSAS. UTAH.

Putnam, 1864, p. 98 (part). Warwick, MASSACHUSETTS.

Riley, 1870, p. 303. Le Roy, NEW YORK.

Cresson, 1875, p. 728. Eastern NEVADA; (Yarrow).

Putnam, 1876, p. 189, and Cresson, 1876, p. 210. Fort Bridger, WYOMING. Davenport, IOWA. Spring Lake, UTAH.

Cresson, 1879, p. 230. CALIFORNIA.

Bowles, 1880, p. 33. Quebec and Montreal, CANADA.

Provancher, 1883, p. 735. Have not seen.

Coville, 1890, p. 201. Ithaca, NEW YORK. Discussed the "*Apathus elatus*" error. See also Robertson, 1890, p. 41.

Evans, 1896, p. 13. Sudbury, ONTARIO.

Cockerell and Porter, 1899, p. 387. Las Vegas and Rio Ruidoso at about 6700 ft. in White Mountains, NEW MEXICO; VII, VIII; at *Petalostemon candidus* and *Vicia*.

Cockerell, 1899, p. 157. Pasco, WASHINGTON; V; (Kincaid).

Cockerell, 1901c, p. 42. At *Petalostemon candidus*.

Tirus, 1902, p. 40. Fort Collins, Livermore, Antonito, Trinidad, Montrose, Fort Lupton, and Boulder, COLORADO; V-IX; (Gillette and Haynes).

(?) Fowler, 1902, p. 317. San Diego and Berkeley, CALIFORNIA; V, X.

Meehan, 1902, p. 35. At *Lobelia syphilitica*.

(?) Viereck, 1902, p. 44. Beulah, NEW MEXICO.

*B. pennsylvanicus* Robertson, 1903, p. 177.

*B. pennsylvanicus* Viereck *et al.*, 1904, p. 98. Condon, OREGON; VII, IX; (Cordley).

Jarvis, 1905, p. 128. Ottawa, CANADA.

Lovell, 1907, p. 197. Waldoboro, MAINE; V-IX; at *Rhodora canadensis*, *Æsculus hippocastanum*, *Falcata comosa*, *Trifolium pratense*, and *Pontederia cordata*.



*B. pennsylvanicus* Swenk, 1907, p. 296. Sioux County, Lincoln, Omaha, Weeping Water, West Point, Neligh, Springview, and Gordon, NEBRASKA; V-IX; at *Astragalus*, *Rubus*, *Petalostemon*, *Monarda*, *Mentha*, *Carduus*, *Solidago*, and *Helianthus*.

Fletcher and Gibson, 1907, p. 128. McLeod, ALBERTA; VI; (Fletcher).

*B. pennsylvanicus* Grænicher, 1907, p. 26. ♀, ♂. WISCONSIN; at *Allium cernuum*.

Tucker, 1909, p. 277. Wichita, KANSAS; VIII. Colorado Springs and Denver, COLORADO; VIII.

Cockerell, 1910d, p. 128. Rifle Gap and Meeker, COLORADO; (Robbins).

*B. ternarius* Smith, 1910, p. 698. Staten Island, NEW YORK; (Davis).

Cockerell, 1911, p. 390. Woods Hole, MASSACHUSETTS; (Eleth Cattell).

Davidson, 1911, p. 66. Los Angeles, CALIFORNIA.

*B. pennsylvanicus* ("=*fervidus*") Grænicher, 1911, p. 249. Mouth of the Yellow River in Burnett County. Never's Dam in Polk County, and Maiden Rock in Pierce County, WISCONSIN; VII, VIII.

Franklin, 1913, p. 388. Regina, ASSINIBOIA. "This species is present throughout all the states of the United States, except as follows: Florida, Louisiana, Alabama, Mississippi, the greater part of Texas, the eastern half of Oklahoma, the greater part of Arkansas, the greater part of Georgia, the eastern half of North and South Carolina, eastern Virginia and the western portions of Tennessee and Kentucky."

Crawford, 1913, p. 269. Red Head, St. John, and Nerepis, NEW BRUNSWICK; VII-IX.

Viereck, 1916, p. 757. New Haven, Bradford, East Hartford, Mt. Carmel, Salisbury, Torrington, and Milford, CONNECTICUT.

Cockerell, 1916c, p. 9. Whitefish Point, Chippewa County, MICHIGAN; VI; (Andrews).

Cockerell, 1917e, p. 212. Falls Church, VIRGINIA; at *Helianthus annuus zonatus*.

Bequaert, 1920, p. 9. Forest Hills, Auburndale, Cohasset, and Sherborn, MASSACHUSETTS.

See *americanorum* and *borealis*.

[D.] **fervidus dorsalis** Cresson, 1879, p. 230. ♀. No locality given but Cresson, 1916, p. 117, says it is CANADA.

*B. dorsalis* Lovell, 1898a, p. 385. (?) Waldoboro, MAINE; at *Chelone glabra*.

*B. nevadensis aztecus* Cockerell, 1899a, p. 389. ♀. Aztec, Las Vegas, Beulah, Mesalero Agency, and Rio Ruidoso (6700-6900 ft.), NEW MEXICO; V-VIII; at *Verbena bipinnatifida*, *Monarda stricta*, *Lupinus sitgreavesii*, and *Verbascum thapsus*; (Porter, Barber, and Townsend).

*B. dorsalis* Viereck, 1906, p. 238. Oak Creek Canyon, ARIZONA; VII, VIII; (Snow).

*B. dorsalis* Cockerell, 1906, p. 313. "Canadian to Upper Sonoran."

*B. dorsalis* Cockerell, 1906d, p. 453. Florissant, COLORADO; VII; at *Capnoides*; (Rohwer).

[P.] **flavifrons** Cresson, 1863, p. 105. ♀, ♂, ♂\*. Fort Yukon\*, ALASKA. HUDSON BAY TERRITORY. Kansas. The latter is probably erroneous.

(?) *B. praticola* Kirby, 1837, p. 274. ♀. Lat. 65°, North America. Putnam, 1876, p. 195, and Cresson, 1876, p. 210. Spring Lake, Utah County, UTAH. Empire, COLORADO. (Putnam)  
Bowles, 1880, p. 33. Montreal, CANADA.  
Handlirsch, 1891, p. 452 (part). BRITISH COLUMBIA.  
Viereck, 1901, p. 325. Eagle City, ALASKA; 65° 30' N.; (Kirk).  
Titus, 1902, p. 43. Marshall Pass, Lizard Head (Ball), and Ward, COLORADO; VIII.

*B. alaskensis* Ashmead, 1902a, p. 128. ♀, ♂. Sitka and Fox Point, ALASKA; VI, VII.

*B. dimidiatus* Ashmead, 1902a, p. 129. ♀, ♂. Fox Point and Wrangell (Wickham), ALASKA; VII.

*B. flavifrons veganus* Cockerell, 1903a, p. 891. ♂. Top of Las Vegas Range, NEW MEXICO; about 11,000 ft. Typical specimens of *flavifrons* there and above timber line on Truchas Peaks (W. P. Cockerell), also at Beulah (Skinner), NEW MEXICO. 1906, p. 312: "Arctic Alpine to Canadian."

Cockerell, 1907b, p. 257. Eldora (Rohwer) and above timber line on Arapahoe Peak (W. P. Cockerell), COLORADO; VIII.

*B. praticolus* Fletcher and Gibson, 1908, p. 111. St. Albert, ALBERTA; (Fletcher). (?) Metlakatla, BRITISH COLUMBIA; (Keen).

Tucker, 1909, p. 277. Cheyenne Canyon near Colorado City, Buffalo, and Colorado Springs, COLORADO; VII, VIII.

*B. flavifrons dimidiatus* Cockerell, 1910a, p. 25. Calgary, ALBERTA.

Franklin, 1913, p. 368. Metlakatla, Fort Yukon, and Juneau, ALASKA. Vancouver, BRITISH COLUMBIA. Blue Mountains, WASHINGTON. IDAHO. MONTANA.

Sladen, 1915, p. 84. Agassiz, BRITISH COLUMBIA; VII; (Treherne). Nest; see *Psithyrus insularis*.

Cockerell, 1915b, p. 483. Nebraska Hill and Corona (above timber line), COLORADO; at *Trifolium dasycarpum* and *Mertensia bakeri*; (Kenoyer).

Cockerell, 1919b, p. 294. Hudsonian zone on Logs Peak trail, COLORADO.

See *centralis* and *vosnesenskii*. It seems that *dimidiatus*, at least, should be recognized as a variety.

[P.] **formosus** Smith, 1854, p. 403. ♀. Oaxaca, MEXICO, the published locality (India) being wrong; see Cockerell, 1899b, p. 19, and Meade-Waldo, 1916, p. 469.

*B. pulcher* Cresson, 1863, p. 108. ♀. Jalapa, MEXICO; (Akhurst).

*B. ephippiatus pulcher* Handlirsch, 1888, p. 233.

Franklin, 1913a, p. 91. Ixtaceihautl, Popocatepetl (8000 ft.), and Ozumba [Orizaba?], MEXICO. Olas de Moka, Department Solola, GUATEMALA. VENEZUELA.

Franklin, 1915, p. 414. MEXICO: Xucumanatlan, 7000 ft., (Smith), and Omilteme, 8000 ft., both in Guerrero; Ciudad, 8100 ft., (Forrer); and Orizaba. Santa Cruz, San Geronimo, and Capetillo, GUATEMALA; (Champion).

[F.] **fraternus** Smith, 1854, p. 385. (*Apathus*) ♂. North America.

*B. scutellaris* Cresson, 1863, p. 96. ♀\*, ♀. TEXAS\*. FLORIDA.

*Apathus fraternus* Cresson, 1863, p. 111. New Wied, TEXAS.

*B. scutellaris* Patton, 1879, p. 360. Northwestern KANSAS; IX; at *Solidago*; (Williston).

*B. scutellaris* Robertson, 1891a, pp. 571, 574, 577, 589. 597. Carlinville, ILLINOIS; at *Asclepias incarnata* and *sullivantii*, *Acerates longifolia*, *Collinsia verna*, and *Gerardia tenuifolia*.

*B. scutellaris* Robertson, 1894, pp. 452-475. Macoupin County, ILLINOIS; at *Eupatorium serotinum*, *Solidago canadensis* and *lanceolata*, *Helianthus grosseserratus*, *Coreopsis aristosa*, *Helenium autumnale*, and *Cnicus altissimus discolor*.

*Psithyrus fraternus* Dalla Torre, 1896, p. 569.

*B. scutellaris* Robertson, 1896, p. 159. At *Æsculus hippocastanum*.

*B. scutellaris* Robertson, 1898a, p. 244. At *Helianthus divaricatus*.

*B. scutellaris* Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

*B. scutellaris* var. Cockerell and Porter, 1899, p. 390. ♀. Las Vegas, NEW MEXICO; VIII; at *Petalostemon candidus*.

*B. scutellaris* Titus, 1902, p. 41. Fort Collins and (Ball) Julesburg, COLORADO; VII, VIII.

*B. scutellaris* Harris and Kuchs, 1902, p. 25. St. Joseph, MISSOURI; at *Solanum rostratum*.

*B. scutellaris* Viereck, 1903a, p. 132. Anglesea, NEW JERSEY; VIII; at *Asclepias pulchra*.

*Bombias scutellaris* Robertson, 1903, pp. 176, 177.

*Bombias scutellaris* Viereck, 1906, p. 224. Galveston, TEXAS; V; (Snow). Cockerell, 1906, p. 313. "Upper Sonoran."

*B. scutellaris* Dæcke, 1907, p. 265. Lucaston, NEW JERSEY; IX.

*Bombias scutellaris* Swenk, 1907, p. 294. Lincoln, Omaha, Nebraska City, West Point, Carns, and Sioux County, NEBRASKA; VI-X; at *Carduus*, *Helianthus*, *Solidago*, and *Grindelia*.

*B. scutellaris* Tucker, 1909, p. 278. Wichita, KANSAS; VIII.

*Bombias scutellaris* Smith, 1910, p. 699. Brown Mills, NEW JERSEY; VIII, IX.

*B. (Bombias) fraternus* Franklin, 1913, p. 421. LOUISIANA. MISSISSIPPI. ALABAMA. GEORGIA. NORTH and SOUTH CAROLINA. OKLAHOMA. ARKANSAS. TENNESSEE. MISSOURI. KENTUCKY. Eastern VIRGINIA. Eastern MARYLAND. DELAWARE. Lakehurst, NEW JERSEY. OHIO. INDIANA. ILLINOIS. IOWA. Hugo and Berkeley, COLORADO.

[P.] **frigidus** Smith, 1854, p. 399. ♀, ♂. HUDSON BAY. (See Meade-Waldo, 1916, p. 469.)

*B. derhamellus* Kirby, 1837, p. 273. Lat. 65°.

*B. carriei* Greene, 1860, p. 170. ♀. Fort Steilacoom, "Washington Territory"; (Suckley).

Cresson, 1863, p. 100 (not the ♂): Great Slave Lake and Yukon River, (Kennicott); and Puget Sound, (Norton).

Provancher, 1888, p. 341. Ottawa, CANADA; (Guignard).

Handlirsch, 1891, p. 454 (part). BRITISH COLUMBIA. Yale and Lytton, "Washington Territory."

(?) *B. derhamellus* Fox, 1892, p. 134. Herbert Island and McCormick Bay, West GREENLAND; VII.

Cockerell, 1901b, p. 361. Summit of the range between the Pecos and Sapello rivers, near the headwaters of the Pecos, NEW MEXICO.

*B. couperi* and (?) *B. oregonensis* Titus, 1902, p. 44. Ward and Lizard Head, COLORADO; VIII; (Ball).

*B. couperi* Ashmead, 1902a, p. 126. Popoff Island, Seldovia, and Nushagak River (McKay), ALASKA; VII. See *strenuus* for Ashmead's *frigidus*.

Cockerell, 1903a, p. 891. Truchas Peaks, NEW MEXICO; above timber line.

*B. derhamellus sitkensis* Friese, 1904b, p. 518. Makes *frigidus* a synonym.

(?) Cockerell, 1906, p. 312. Truchas Peak, above timber line (W. P. Cockerell) and top of Las Vegas Range, NEW MEXICO. "Arctic Alpine to Hudsonian."

Cockerell, 1907b, p. 257. Arapahoe Peak, above timber line, VIII, (W. P. Cockerell), and Eldora, IX, (Rohwer), COLORADO.

Franklin, 1913, p. 360. Eagle, ALASKA. Ft. Rae, MACKENSIE. Ungava Bay, LABRADOR. NEWFOUNDLAND. Fremont Pass, COLORADO; (11,500-12,000 ft.

Lutz, 1916, p. 516. Athabasca River, ALBERTA; (Anderson). Collins, IDAHO.

Sladen, 1919a, p. 316, ♂, ♀. Nome, ALASKA; (Johansen).

See *mixtus* and *strenuus*.

*fuliginosus*. See *ephippiatus*.

[F.] *funebri* Smith, 1854, p. 400. ♀. Quito, ECUADOR.

Cameron, 1903, p. 237. ♀, ♂. Machachi (9000-10,000 ft.), Hac. Guachala (9217 ft.), Pichincha (11,500 ft.), Chillo (9000 ft.), S. Lucia (8000 ft.) and Hac. S. Rosario (10,300 ft.), ECUADOR; (Whympfer; see his 'Travels amongst the Great Andes of the Equator').

*B. (Bombias) funebri* Franklin, 1913a, p. 157. Tarata, BOLIVIA. Callanga, PERU. COLOMBIA. Atypical specimens, COSTA RICA.

Franklin, 1915, p. 415. Pachacayo, PERU; over 12,000 ft.; (Townsend).

[P.] *gelidus* Cresson, 1878a, p. 184. ♀. ALEUTIAN ISLANDS; (Edwards).

Franklin, 1913, p. 341. Popoff Island, Koyuku River, Kukak Bay, and Nualaska, ALASKA. Signuia, BAFFIN LAND.

See *kincaidii*.

*griseocollis*. See *impatiens*.

*grænlandicus*. See *arcticus*.

*guatemalensis*. See *wilmattæ*.

[F.] *haueri* Handlirsch, 1888, p. 234. ♀. Orizaba and Tukubaya, MEXICO; (Bilimek).

Franklin, 1907, p. 91 and (*B. Bombias haueri*) Franklin, 1913a, p. 141, ♀, ♂. Mexico City, Eslava, and Meadow Valley (head of Rio Piedras Verdes, six miles south of Colonia Garcia in the Sierra Madre of western Chihuahua), MEXICO.

[F.] **henshawi** Franklin, 1913, p. 446. (*B. Bombias*) ♀. San Francisco and Palo Alto, CALIFORNIA.

*hortorum*. See *alboanalis*.

*howardi*. See *occidentalis*.

*hudsonicus*. See *perplexus*.

[P.] **huntii** Greene, 1860, p. 172. ♀. "Utah Territory."

*B. ternarius* Cresson, 1863, p. 104. ♀, ♀, ♂, (part). Probably the Utah and Puget Sound records.

*B. ternarius* Cresson, 1875, p. 728. COLORADO; (Rothrock). NEW MEXICO; (Loew).

*B. ternarius* Putnam, 1876, p. 189. Fort Bridger, WYOMING.

*B. ternarius* Cresson, 1876, p. 210. Empire, COLORADO.

Cockerell, 1893, p. 337. Willow Creek, Cusack Ranch, and also at timber line, Custer County, COLORADO; VIII.

(?) *B. ternarius* Cockerell and Porter, 1899, p. 390. Rio Ruidoso (6700–8200 ft.), Beulah, Harvey's Ranch (9600 ft.), Aztec, and Mescalero, NEW MEXICO; V, VII, VIII; (Townsend, Porter, Mead, and Otis). May be *edwardsii*, under which we have given the flower records.

*B. ternarius* Cockerell, 1899, p. 156. Seattle, WASHINGTON; III; (Kincaid).

*B. ternarius* Titus, 1902, p. 42. Fort Collins, Bellvue, Livermore, Ridgeway, Lamar, Virginia Dale, Westlake, Durango, Antonito, Clear Creek Canyon, Ward, Glenwood Springs, and Salida, COLORADO; III–IX.

*B. ternarius* Viereck *et al.*, 1904, p. 99. Condon and Corvallis, OREGON; VII, VIII; (Tulley).

(?) *B. ternarius* Viereck, 1906, p. 245. Near Lander, WYOMING.

*B. rufosuffusus* Cockerell, 1905a, p. 271. ♀. Boulder, COLORADO; VI; (W. P. Cockerell). May be distinct.

Cockerell, 1906, p. 312. Truchas Peak, above timber line (W. P. Cockerell), and top of Las Vegas Range, NEW MEXICO. "Arctic Alpine to Transition." Cockerell, 1906d, p. 453. Florissant and (*rufosuffusus*) Topaz Butte, COLORADO; VI; at *Ribes longiflorum*, *Polemonium*, *Pentstemon secundiflorus* and *Pedicularis*; (Rohwer, Wheeler and Cockerell).

Swenk, 1907, p. 297. "Pine Ridge country," Sioux County, NEBRASKA; V–IX; at *Astragalus*, *Symphoricarpus*, *Campanula*, *Borago*, *Melilotus*, *Monarda*, *Cleome*, *Carduus*, and *Helianthus*.

Fletcher and Gibson, 1907, p. 128. McLeod, ALBERTA; VI; (Fletcher).

Cockerell, 1910d, p. 128. New Castle, Meeker, and near Axial, COLORADO; at *Cleome*, *Solidago* and *Rudbeckia*; (Robbins).

Crawford, 1912, p. 359. Medicine Hat, ALBERTA; (Malloch).

Franklin, 1913, p. 319. CALIFORNIA (except probably the Lower Austral portion). NEVADA. Western SOUTH DAKOTA. Vancouver Island and Fort McLeod, BRITISH COLUMBIA. Regina in the old territory of ASSINIBOIA.

Franklin, 1915, p. 414. Sentinel Buttes, NORTH DAKOTA; (Stevens).  
Cockerell, 1915*d*, p. 331. Boulder, COLORADO; pollinating *Cattleya mos-*  
*sia* in a greenhouse.

See *laticinctus* and *ternarius*.

*hyperboreus*. See *arcticus*.

*hyperboreus albertensis*. See *rufocinctus*.

[P.] **impatiens** Cresson, 1863, p. 90. ♂. CANADA. CONNECTICUT.  
PENNSYLVANIA. ILLINOIS. MISSOURI. Description of *B.*  
*impatiens* (nom.nud.) Harris, 1835, p. 70.

(?) *Apis griseo-collis* De Geer, 1773, p. 576.

*Apis virginicus* Olivier, 1789, p. 66, and *griseo-collis*, p. 64.

*B. virginicus* Fabricius, 1804, p. 346. VIRGINIA. Homonym.

*Bremus virginicus* Jurine, 1807, p. 260.

*B. virginicus* Smith, 1854, p. 398. St. John's Bluff, East FLORIDA.

*B. virginicus* Cresson, 1863, p. 87. ♀, ♂, not ♂. NEW YORK. DELAWARE.  
DISTRICT OF COLUMBIA. MISSISSIPPI. TEXAS. Discussion of synonymy.  
See also p. 90 (*impatiens*) and p. 166.

*B. virginicus* Putnam, 1864, p. 101. Bridport, VERMONT. Nest.

*B. virginicus* Cresson, 1876, p. 210. Davenport, IOWA.

*B. virginicus* Riley, 1880, p. 107. Marion, ALABAMA. Robbing honey bees.

*B. virginicus* Bowles, 1880, p. 33. Quebec and Montreal, CANADA.

*B. virginicus* Handlirsch, 1888, p. 228. NEVADA.

(?) *Psithyrus insularis* Provancher, 1888, p. 342. ♂ (not ♀).

*B. virginicus* Robertson, 1891*a*, pp. 569–597. At *Asclepias verticillata* and  
*incarnata*, *Phlox divaricata*, *Hydrophyllum virginicum* and *appendiculatum*,  
*Solanum nigrum*, *Linaria vulgaris*, *Scrophularia nodosa marilandica*, *Sey-*  
*meria macrophylla*, *Gerardia pedicularia*, *purpurea*, *tenuifolia*, and *auriculata*.

*B. virginicus* Howard, 1891, p. 431. Horse-chestnut nectar possibly had a  
toxic effect.

*B. virginicus* Robertson, 1894, pp. 436–475. Macoupin County, ILLINOIS;  
at *Prunus serotina*, *Rosa humilis*, *Pyrus coronaria*, *Crataegus coccinea* and  
*crusgalli*, *Eupatorium purpureum* and *serotinum*, *Lacinaria* ["*Liatris*"]  
*pyncnostachya*, *Solidago canadensis*, *nemoralis*, and *lanceolata*, *Aster novæ-*  
*angliæ*, and *paniculatus*, *Helianthus grosseserratus*, *Coreopsis aristosa*, *Helenium*  
*autumnale*, and *Cnicus altissimus discolor* and *lanceolatus*.

*B. virginicus* Robertson, 1896, pp. 156, 160, 165, 175. Carlinville, ILLINOIS;  
at *Æsculus*, *Gymnocladus canadensis*, and *Aster ericoides villosus*.

*B. virginicus* Robertson, 1898*a*, p. 242. At *Lonicera sullivantii*.

*B. virginicus* Cockerell, 1899*c*, p. 3. Baldwin, Douglas County, KANSAS;  
(Bridwell).

*B. virginicus* Harris and Kucks, 1902, p. 25. St. Joseph, MISSOURI; at  
*Solanum rostratum*.

Viereck, 1903*a*, p. 119. College Park and Chestertown, MARYLAND;  
VIII–X; (Vanatta).

*B. morrisonii* Howard, 1904, Pl. III, fig. 37.

(?) *B. virginicus* Viereck, 1906, p. 240. Magdalena Mountains, NEW  
MEXICO: VII; (Snow).

*B. virginicus* Britton and Viereck, 1906, pp. 216, 217, 219. CONNECTICUT; at *Prunus avium* and *persica*, *Pyrus malus*, and *Cydonia vulgaris*.

*B. virginicus* Swenk, 1907, p. 296. Lincoln, Omaha, South Bend, Cedar Bluffs, Weeping Water, Meadow, Nebraska City, Falls City, and Nemaha City, NEBRASKA; IV; at *Prunus*, *Ribes*, *Rubus*, *Cassia*, and *Petalostemon*.

Fletcher and Gibson, 1907, p. 128. Ottawa, CANADA; X; (Fletcher).

*B. virginicus* Grænicer, 1907, pp. 26, 32, 40, 93. ♀, ♀. WISCONSIN; at *Allium cernuum*, *Clintonia borealis*, *Salmonia biflora*, and *Ribes cynosbati*.

*B. virginicus* Tucker, 1909, p. 278. Lawrence, KANSAS; VII-X.

Smith, 1910, p. 698. Throughout NEW JERSEY.

Grænicer, 1911, p. 249. Hudson in St. Croix County, Prescott and Maiden Rock in Pierce County, and Fountain City in Buffalo County, WISCONSIN; VII, VIII.

Franklin, 1913, p. 309. "Most western records are Logansport, LOUISIANA, and Lincoln, NEBRASKA."

Franklin, 1915, p. 414. Lake Park, MINNESOTA; (Stevens).

Viereck, 1916, p. 758. Branford, New Haven, Putnam, and Salisbury, CONNECTICUT.

Bequaert, 1920, p. 9. Forest Hills, Auburndale, Dedham, Brookline, Cohasset, and Sherborn, MASSACHUSETTS.

*improbus*. See *nevadensis*.

[D.] *incarum* Franklin, 1913a, p. 131. ♀, ♀, ♂. Callanga and Chanchamayo, PERU. Boquete, Chiriqui, PANAMA. Georgetown, BRITISH GUIANA. DUTCH GUIANA. Sapucay, PARAGUAY. Rio Grand do Sul, BRAZIL. This may be *Apis cajennensis* Fabricius, 1898, p. 273.

*insularis*. See *impatiens*.

*interruptus*. See *Psithyrus insularis*.

*iridis*. See *rufocinctus*.

*justus*. See *affinis novæ-angliæ*, *centralis* and *pleuralis*.

*kenoyeri*. See *edwardsii*.

[K.] *kincaidii* Cockerell, 1898, p. 324. ♀, ♀, ♂. St. Paul, PRIBILOF ISLAND, Bering Sea; VIII; at *Lathyrus*; (Kincaid).

(?) *B. gelidus* Ashmead, 1902a, p. 127. See Viereck, 1903a, p. 54.

*Psithyrus kodiakensis* Ashmead, 1902a, p. 130. ♂. Kodiak, ALASKA; VII. This synonymy is according to Franklin, who formerly (in litt.) considered *kodiakensis* to be *putnami* (*B. kirbyellus*). The latter determination would seem more probable, as *kincaidii* is not supposed to occur on the mainland. Ashmead says the pleura of his species is covered with ochreous hair, not dark as it should be in *kincaidii*.

[K.] *kirbyellus* Curtis, 1835, p. lxii. (*kirbiellus*) ♀, ♀, ♂. ARCTIC AMERICA.

(?) *B. balteatus* Dahlbom, 1832, p. 36.

(?) *B. tricolor* Dahlbom, 1832, p. 41.

For references to possible synonyms (*nivalis*, *balteatus*, *montanus*, and *nidulnas*) in the Palearctic region see Franklin, 1913, p. 290, and Dalla Torre, 1896, p. 527.

- B. kirbiellus* Smith, 1854, p. 397. Boothia Felix, Canada.  
 MacLachlan, 1878, p. 106. Hayes Sound, lat. 79°, VIII; Fort Foulke, VII; and lat. 81° 45'; (Feilden).  
*B. putnami* Cresson, 1878a, p. 185. ♀. COLORADO; (Putnam).  
*B. balteatus kirbiellus* Aurivillius, 1890, p. 28. Polaris Bay, Ritenbenk, Godhavn, Auleitsivik, and Ivigtut, GREENLAND; (Kolthoff).  
*B. nidulans* Handlirsch, 1891, p. 453. Lytton, BRITISH COLUMBIA.  
 (?) *B. nivalis* Fox, 1892, p. 134. McCormick Bay, West GREENLAND; VII.  
*B. putnami* Titus, 1902, p. 41. Fort Collins, Lizard Head, Ward, and Home, COLORADO; all, except Fort Collins, 7000 to 10,000 ft.; VIII; (Ball).  
*B. atrifasciatus* Morrill, 1903, p. 224. ♀. Gallatin County, MONTANA; 9400 ft.; VII; (Cooley).  
*B. putnami* Viereck *et al.*, 1904, p. 99. WASHINGTON. Mt. Hood, OREGON.  
 Fletcher and Gibson, 1907, p. 129. Fullerton, Hudson Bay, and Mount Edith, Banff, CANADA; VII; (Halkett and Fletcher).  
 Fletcher and Gibson, 1908, p. 111. Bartlett Bay, ALASKA; at sea-level; (Nelles).  
 Franklin, 1913, p. 290. Truchas Peak, NEW MEXICO. LABRADOR. Sopka, SIBERIA.  
 Cockerell, 1915b, p. 483. Nebraska Hill, COLORADO; above timber line; VII; at *Polemonium confertum* and *Trifolium*; (Kenoyer).  
 Lutz, 1916, p. 520. Kodiak, ALASKA.  
 Sladen, 1919a, p. 27g. ♂, ♀. Nome, Collinson Point, ALASKA, and Young Point, NORTHWEST TERRITORIES, (Johansen); Nottingham Island (McKenzie), Cape Chudleigh, Hudson Strait; Laggan (Fletcher), and Banff (Sanson), ALBERTA.  
 See *kincaidii* and *pleuralis*.

*kirbyellus pyropygus*. Friese's remarks in 1902a and 1908a as to synonymy are somewhat confusing. See also 1912b, p. 182. He probably had no American specimens of *pyropygus*.

*kodiakensis*. See *kincaidii*.

*laboriosus*. See *nigrodorsalis* and *Psithyrus laboriosus*.

*lacustris*. See *edwardsii*, *melanopygus*.

*lapponicus*. See *sylvicola*.

*lapponicus flavicollis*. See *sylvicola flavicollis*.

*lateralis*. See *ephippiatus* and *wilmattæ*.

[P.] **laticinctus** Franklin, 1913a, p. 85. ♀. ♂\*. Meadow Valley (head of Rio Piedras Verdes, six miles south of Colonia Garcia, Sierre Madre of western Chihuahua), MEXICO; 7000 ft.; (Townsend).  
 May be a subspecies of *huntii*.

*laticollis*. See *nigrodorsalis*.

*leucomelas*. See *volucelloides*.

*marylandicus*. See p. (503).

*mckayi*. See *occidentalis*.



[D.] **medius** Cresson, 1863, p. 97. ♀ (?). The locality (Utah) "no doubt an error for MÉXICO" (Cresson, 1916, p. 123).

*Apis cajennensis* Fabricius, 1798, p. 273, may be the same. The various references to this are omitted.

(?) *B. unifasciatus* Smith, 1879, p. 133. GUATEMALA; 5000 ft. Irazu, COSTA RICA; 6000-7000 ft. "San Francisco"; 4500 ft.

Cockerell, 1905*g*, p. 90. San Rafael on the Rio Nautla, Vera Cruz, MEXICO; III, IV.

(?) *B. unifasciatus* Cockerell, 1912, p. 106. Guatemala City, GUATEMALA; XII; (Wheeler).

Franklin, 1913*a*, p. 123. ♀, ♂, ♂. Orizaba, Otoyac, and Coatepec, MEXICO. Olas de Moka, Solola, GUATEMALA. Boquete, Chiriqui, PAMAMA. ECUADOR. Minas Geraës and São Paulo, BRAZIL. Sapucay (?), PARAGUAY.

(?) *B. unifasciatus* Cockerell, 1913*a*, p. 192. Guatemala City, Amatitlan, and Antigua, GUATEMALA; (W. P. Cockerell).

Franklin, 1915, p. 415. Valladolid, Yucatan, (Gauger), and Jalapa and Teapa, Tabasco, (Smith), MEXICO. San Geronimo, GUATEMALA. Bugaba, PANAMA; 800-1500 ft.; (Champion). Pará, BRAZIL; (Austen).

See *mexicanus*.

[P.] **melanopygus** Nylander, 1848, p. 236. (*melanopyge*) ♂. Sitka.

(?) *B. ornatus* Smith, 1854, p. 398. ♀, ♂, ♂. HUDSON BAY.

(?) *B. menestriestii* Radoszkowski, 1859, p. 483.

*B. lacustris* Cresson, 1863, p. 103. ♀\*, ♂, ♂. Lake Athabasca\* and Great Slave Lake, CANADA; (Kennicott).

*B. lacustris* Cresson, 1879, p. 231. Vancouver, BRITISH COLUMBIA, and GREENLAND.

Handlirsch, 1888, p. 231. ALEUTIAN ISLANDS. Misspelled *melampygus*.

*B. lacustris* Provancher, 1888, p. 340. This Quebec record is probably erroneous.

*B. sylvicola* Cockerell, 1893, p. 337. Ula and Willow Creek, Custer County, COLORADO; VII, VIII.

*B. ternarius lacustris* Dalla Torre, 1896, p. 533, (part).

Ashmead, 1902*a*, p. 128. Berg Bay, Juneau, Kodiak, Seldovia, Wrangell, Seward Peninsula, and Sitka, ALASKA. Vancouver Island, BRITISH COLUMBIA; VI, VII. (Wickham, Peters, Fur Seal Commission).

(?) *B. sylvicola* Titus, 1902, p. 43. Lizard Head, Alder, Muldoon, Marshall Pass, and Ward, COLORADO; VIII; (Ball, Gillette, and Cockerell).

Viereck *et al.*, 1904, p. 99. Corvallis (Cordley) and Mt. Hood, OREGON; V.

Fletcher and Gibson, 1907, p. 129. Mount Edith, Banff, ALBERTA; VII; (Fletcher).

Franklin, 1913, p. 334. MACKENZIE. Fullerton, HUDSON BAY country. BAFFIN LAND. BRITISH COLUMBIA. SASKATCHEWAN. WASHINGTON. WYOMING.

Lutz, 1916, p. 515. Colorado Springs, COLORADO; above 6000 ft.; (Wickham).

Sladen, 1919, p. 127. "Probably a variety" of *sylvicola*.

*menestriesii*. See *melanopygus*.

[D.] **mexicanus** Cresson, 1878*a*, p. 187. ♀\*, ♂. MEXICO; (Sumichrast).

(?) *B. unifasciatus* Smith, 1879, p. 133. GUATEMALA; 5000 ft. Irazu, COSTA RICA; 6000–7000 ft. "San Francisco"; 4500 ft. See *medius*.

(?) *B. cayennensis mexicanus* Handlirsch, 1888, p. 241. Yapanema, BRAZIL. GUATEMALA.

(?) *B. unifasciatus* Cockerell, 1912, p. 106. Guatemala City, GUATEMALA; XII; (Wheeler).

Franklin, 1913*a*, p. 128. ♀, ♂, ♂. Olas de Moka, Solola, GUATEMALA. San José, COSTA RICA. Boquete and Bogona, Chiriqui, PANAMA. ECUADOR.

Franklin, 1915, p. 415. Guatemala City, GUATEMALA; (W. P. Cockerell).

*B. cayennensis mexicanus* Friese, 1916, p. 298. San José, COSTA RICA; (Schmidt and Baydorf).

See *medius*.

[F.] **mexicensis** Franklin, 1911, p. 163. (*B. Bombias*) New name for *B. ternarius d* Handlirsch, 1888, p. 230: ♀; Takubaya, MEXICO; (Bilimek).

*mixtuosus*. See *silkensis*.

[P.] **mixtus** Cresson, 1878*a*, p. 186. ♀\*, ♂. COLORADO; (Morrison).

*B. frigidus* Handlirsch, 1891, p. 454 (part).

Cockerell, 1893, p. 338. Near Swift Creek, Custer County, COLORADO.

Titus, 1902, p. 44. Fort Collins, Cameron Pass, Home, and Ward, COLORADO; V, VII.

*B. oregonensis* Ashmead, 1902*a*, p. 126. Fox Point, Kodiak, Juneau, Seldovia, and Popoff Island, ALASKA; VI, VII.

Fletcher and Gibson, 1908, p. 111. Metalakatla (Keen) and Mt. Cheam (Fletcher), BRITISH COLUMBIA. Banff, ALBERTA; (Sanson).

Franklin, 1913, p. 381. Vancouver Island, BRITISH COLUMBIA. LABRADOR. WASHINGTON. IDAHO. Bozeman, MONTANA. OREGON. Humboldt County, CALIFORNIA. WYOMING.

Cockerell, 1919*b*, p. 294. Battle Mountain, COLORADO; above timber line.

Sladen, 1919*a*, p. 31*g*. ♂. Porcupine Mountain district, YUKON TERRITORY; (Cairres).

See *alboanalis*.

*moderatus*. See *terrestris moderatus*.

*modestus*. See *occidentalis*, *terrestris moderatus*, *trinominatus*.

*monardæ*. See *centralis*.

*montanus*. See *kirbyellus*.

*montezumæ*. See *nigrodorsalis*.

[F.] **mormonorum** Franklin, 1911, p. 161 (*B. Bombias*) ♀, ♂, ♂. Beaver Valley, Beaver Canyon, Beaver Creek, South Creek, Beaver County, UTAH.

[F.] **morrisoni** Cresson, 1878*a*, p. 183. ♀\*, ♂, ♂. COLORADO; (Morrison).

Cresson, 1879, p. 230. NEW MEXICO. NEVADA.

Cockerell, 1898*d*, pp. 71, 73. Mesilla Valley, Organ Mountains, Lamy, Watrous, Albuquerque, and Sante Fé, NEW MEXICO; IX; at *Cleome serrulata*. See also 1898*f*, p. 311.

Cockerell and Porter, 1899, p. 388. Las Vegas, Romeroville, Aztec, Ruidoso Creek at 6900-8200 ft., South Fork, Eagle Creek, Las Cruces, Mesilla Park, Dipping Spring in Organ Mountains, and Mescalero Agency, NEW MEXICO; III-VIII; at *Asclepias*, *Monarda stricta*, *Solidago trinervata*, *Sicyos parviflorus*, *Salvia lanceolata*, and (Cockerell, 1899*d*, p. 256) *Ungnadia speciosa*; (Mead, Townsend, Steel, Tinsley, Wooton, Cockerell, and Porter). "The vertical range is from 3800 to 8200 ft., but the insect seems to be most abundant at 6500-7500 ft."

Fowler, 1902, p. 312. Mount Shasta, CALIFORNIA; (Jones). ARIZONA.

Titus, 1902, p. 39. Fort Collins, Trinidad, Antonito (Gillette), Cerro Summit, Horsetooth Gulch, and Cimmaron, COLORADO; V-IX; at *Mentzelia multiflora*, *Helianthus annuus*; *Thermopsis montanus*, *Alnus viridis*, and wild rose.

*B. perplexus* Titus, 1902, p. 39. ♂.

Cockerell, 1906, p. 313. Pecos, NEW MEXICO. "Transition to Middle Sonoran."

Cockerell, 1906*d*, p. 453. Florissant, COLORADO; VI; (Rohwer).

*Bombias morrisoni* Swenk, 1907, p. 295. Warbonnet Canyon, Sioux County, and Gering, NEBRASKA; VII, VIII.

Cockerell, 1907*b*, p. 258. Boulder, COLORADO; V.

Tucker, 1909, p. 277. Colorado Springs, COLORADO; VIII.

Davidson, 1911, p. 66. Los Angeles, trail to Wilson's Peak, CALIFORNIA.

*B. (Bombias) morrisoni* Franklin, 1913, p. 431. UTAH. Chino, CALIFORNIA. Flagstaff, ARIZONA.

See *impatiens*.

*nearcticus*. See *edwardsii*.

*neglectulus*. See *californicus*.

**neoboreus** Sladen, 1919*a*, p. 28*g*. ♂, ♀, ♂. Bernard Harbour, NORTHWEST TERRITORIES; VI-VIII; (Johansen).

[A.] **nevadensis** Cresson, 1874, p. 102. ♀\*, ♂. NEVADA\*, (Yarrow). ARIZONA, (Henshaw).

Cresson, 1875, p. 728. NEW MEXICO; (Yarrow).

*B. improbus* Cresson, 1878*a*, p. 188. ♂. COLORADO; (Morrison).

Cresson, 1879, p. 230. COLORADO. CALIFORNIA.

Cockerell, 1893, p. 338. Near Swift Creek, Custer County, COLORADO.

*B. nevadensis cressoni* Cockerell, 1899*a*, p. 338. ♀. WASHINGTON. COLORADO. White Mountains at 10,300 ft., South Fork, Eagle Creek at 8300 ft., North Fork of Ruidoso Creek at 8200 ft., Mescalero Indian Agency (typical form; 1899, p. 156), and Las Vegas, NEW MEXICO; VIII; at *Delphinium scopulorum*, *Sicyos parviflorus*, *Solidago trinervata*, and *Cleome serrulata*; (Townsend, Otis, Porter, and Cockerell).

*B. improbus* Cockerell and Porter, 1899, p. 389. South Fork of Eagle Creek, White Mountains, NEW MEXICO; 8200 ft.; VIII; at *Senecio rusbyi*.

Ashmead, 1902, p. 124. ALASKA. UTAH.

Titus, 1902, p. 40. Fort Collins, Beaver Creek, Little Beaver Creek, Boulder, Bellvue, Antonito, Virginia Dale, and Livermore, COLORADO; V-VIII.

Viereck, 1902, p. 45. Beulah, NEW MEXICO.

Viereck *et al.*, 1904, p. 98. Condon, OREGON; VII; (Cordley).

Cockerell, 1906, p. 313. "Canadian to Upper Sonoran."

Cockerell, 1906*d*, p. 453. Florissant, COLORADO; VII; at *Polemonium*; (Rohwer).

Fletcher and Gibson, 1907, p. 129. Vernon, BRITISH COLUMBIA (?); McLeod and High River, ALBERTA; VI; (Venables, Fletcher, Willing, Baird).

*Bombias nevadensis* Swenk, 1907, p. 295. Dundy County, Sioux County, and West Point, NEBRASKA; V-IX; at *Astragalus*, *Malvastrum*, and *Monarda*.

Cockerell, 1910*a*, p. 25. Calgary, ALBERTA; VI.

Cockerell, 1910*d*, p. 128. Near Axial, COLORADO; at *Achillea*; (Robbins).

Davidson, 1911, p. 66. Los Angeles, on the trail to Wilson's peak, CALIFORNIA.

*B. (Bombias) nevadensis* Franklin, 1913, p. 416. Fort McLeod, BRITISH COLUMBIA. MONTANA.

Franklin, 1915, p. 414. Dickinson, NORTH DAKOTA; (Stevens).

See *auricomus*.

*nevadensis aztecus*. See *fervidus dorsalis*.

*nidulans*. See *americanorum*, *kirbyellus*, and *polaris*.

[D.] **niger** Franklin, 1913*a*, p. 120. ♀, ♂, ♂. Belize, BRITISH HONDURAS, Carillo and La Estrella de Cartago, COSTA RICA. Bogona and Boquete, Chiriqui, PANAMA. COLOMBIA. San Julian, VENEZUELA. ECUADOR. Callanga, PERU. Bonito in the Province of Pernambuco and St. Catharina, BRAZIL. Sapucay, PARAGUAY. Franklin notes that it may be the same as *velutinus* Illiger 1806, p. 175, or *violaceus* Lepeletier, 1836, p. 473.

Franklin, 1915, p. 415. Bugaba, PANAMA; (Champion). Monte Alegre, Lower Amazon, BRAZIL; (Austen).

*nigrocinctus*. See *crotchii*.

[D.] **nigrodorsalis** Franklin, 1907, p. 90. ♀\*, ♂, and *nigrodorsalis latifollis* ♀. Meadow Valley (head of Rio Pierdras Verdes, six miles south of Colonia Garcia, Sierra Madre of western Chihuahua), MEXICO; 7000 ft.; (Townsend).

*B. laboriosus* Smith, 1861, p. 153 (not Fabricius). ♂, ♂. Oaxaca, MEXICO. (See Meade-Waldo, 1916, p. 469.)

*B. ephippiatus laboriosus* Handlirsch, 1888, p. 233.

(?) *B. weisi* Friese, 1903, p. 253. ♂ (not ♂). San Carlos, COSTA RICA.

*B. ephippiatus montezumæ* Cockerell, 1908*b*, p. 344. New name.

*B. montezumæ* Franklin, 1913*a*, p. 95. Tlalpam, MEXICO.

Franklin, 1915, p. 410. Ciudad, Omilteme and Xucumanatlan (the two latter in Guerrero), MEXICO. Quezaltenago, GUATEMALA. All 7000-8100 ft., (Forrer, Smith, and Champion).

See *weisi*. *B. montezumæ* is probably a distinct variety.

*nigroscutatus*. See *occidentalis nigroscutatus*.

*nivalis*. See *kirbyellus*.

[T.] **occidentalis** Greene, 1858, p. 12. ♀, ♂. Northwest coast of America; Fort Vancouver (Cooper) and Puget Sound (Suckley).

*B. modestus* Smith, 1861, p. 153. ♀. Oaxaca, MEXICO. Franklin, 1913, p. 273 says that this locality is probably wrong.

*B. proximus* Cresson, 1863, p. 98. ♀. UTAH; (Suckley).

*B. howardi* Cresson, 1863, p. 98. ♂. Pikes Peak, COLORADO; (Howard). Cresson, 1879, pp. 230, 231. NEVADA. CALIFORNIA. OREGON. *B. howardii*: UTAH.

*B. terricola howardi*, *t. proximus*, and *t. occidentalis* Handlirsch, 1888, p. 234.

*B. howardi* Cockerell, 1898d, p. 71. Santa Fé Canyon, NEW MEXICO.

*B. perixanthus* Cockerell and Porter, 1896, p. 386, ♂. Harvey's Ranch, near Las Vegas, 9600 ft., and (*howardi*, p. 389) Beulah, and Monument Rock, Santa Fé Canyon, NEW MEXICO; at *Monarda* and *Rudbeckia*.

*B. proximus howardi* Cockerell, 1900a, p. 401. San Ignacio, NEW MEXICO; IX; (Porter).

*B. howardii* Viereck, 1901, p. 325. Eagle City, ALASKA; 65°, 30' N.; (Kirk).

*B. proximus coloradensis* Titus, 1902, pp. 38, 41. ♀. Rist Canyon, COLORADO; 6500 ft.; V. *B. proximus* (p. 41): Horsetooth Gulch, Virginia Dale, Fort Collins, Westlake, Home, Cimmaron, and Marshall Pass, COLORADO; IV-VIII. *B. howardii* (p. 41): Beaver Creek, 10,000-12,000 ft., VIII, and Ridgeway, COLORADO. (?) *B. terricola* (p. 42): Fort Collins, COLORADO; (Stannard).

*B. mckayi* Ashmead, 1902a, p. 125. ♀. Nusha-gak River, ALASKA; (McKay).

*B. howardi* Ashmead 1902a, p. 125. Silver Lake, UTAH; VII.

Viereck *et al.*, 1904, p. 99. Corvallis and Mt. Hood, OREGON; V.

*B. howardi* Viereck, 1906, p. 238. Humphreys Peak, ARIZONA; 9500 ft.; VIII; (Snow).

*B. proximus* Cockerell, 1906, p. 313: top of Las Vegas Range, NEW MEXICO. *B. p. perixanthus*: Harvey's Ranch, NEW MEXICO, 9600 ft. *B. p. howardi*: San Ignacio, NEW MEXICO. "Hudsonian to Canadian" and (*howardi*) "Transition."

*B. proximus coloradensis* Swenk, 1907, p. 295. Warbonnet Canyon, Sioux County, NEBRASKA; VII; (Bruner).

*B. proximus* and *B. p. coloradensis* Cockerell, 1907b, p. 258. Boulder, COLORADO; V.

Fletcher and Gibson, 1907, p. 129. Banff, ALBERTA; VIII; (Sanson).

*B. howardii* and *proximus* Tucker, 1909, p. 277. Buffalo, COLORADO; VIII.

*B. occidentalis howardii* Cockerell, 1910d, p. 128. Ten miles east of Meeker, COLORADO; at *Solidago*; (Robbins).

Franklin, 1913, p. 265. "This species ranges through at least the greater portion of ALASKA (mouth of Dall River, Seldovia, Eagle and Nushagak River) and YUKON TERRITORY, through the greater part of BRITISH COLUMBIA (including Vancouver Island). . . It should be noted that I have no Canadian records for it distinctly east of the eastern limits of the Rocky Mountains, though it seems not improbable that it may range considerably further east."

Cockerell, 1913, p. 347. Feeding through puncture at base of "Chinese Cabbage" flower.

*B. occidentalis perixanthus* Cockerell, 1919d, p. 358. Miunehaha, Pikes Peak, COLORADO; (Frances Long).

Probably several of the named varieties, especially *perixanthus*, should be recognized as distinct varieties.

[T.] **occidentalis nigroscutatus** Franklin, 1913, p. 271. ♀, ♂, ♂. CALIFORNIA\*. BRITISH COLUMBIA. MONTANA. COLORADO.

Fletcher and Gibson, 1908, p. 111; (Franklin Ms.). Skagway District of Northern BRITISH COLUMBIA; (White-Fraser).

*oregonensis*. See *frigidus*, *mixtus*, *sitkensis*.

*ornatus*. See *melanopygus*, *sylicola*, *ternarius*, and p. 503.

*pallidus*. See *americanorum*.

*parvulus*. See p. 503.

*pennsylvanicus*. See *americanorum*, *auricomus*, *fervidus*, and *sonorus*.

*perixanthus*. See *occidentalis*.

[P.] **perplexus** Cresson, 1863, p. 91. ♂. CONNECTICUT; (Norton).

*B. elatus* Harris, 1835, p. 70. MASSACHUSETTS.

*B. hudsonicus* Cresson, 1863, p. 92. ♂. HUDSON BAY TERRITORY; (Norton).

Bowles, 1880, p. 33. Montreal, CANADA.

*B. perplexus hudsonicus* Cresson, 1887, p. 308.

Fletcher and Gibson, 1907, p. 129. Meach Lake, CANADA; VII; (Gibson).

Smith, 1910, p. 698. Brown's Mills, NEW JERSEY; VI; (Dæcke).

Franklin, 1913, p. 344. QUEBEC. ONTARIO. MANITOBA. NEW HAMPSHIRE. VERMONT. RHODE ISLAND. NEW YORK. PENNSYLVANIA. VIRGINIA. WEST VIRGINIA. NORTH CAROLINA. TENNESSEE. MICHIGAN. WISCONSIN. MINNESOTA. "The records of this species from Colorado . . . are erroneous." Nest.

Franklin, 1915, p. 414. Fargo, NORTH DAKOTA; (Stevens).

Lutz, 1916, p. 515. Mountains of GEORGIA; (Davis).

Viereck, 1916, p. 758. Branford and Westville, CONNECTICUT; V, VII.

Bequaert, 1920, p. 9. Wollaston, Auburndale, Arlington, and Sherborn, MASSACHUSETTS.

See *morrisoni*.

*phaceliæ*. See *rufocinctus*.

[P.] **pleuralis**, Nylander, 1848, p. 231. ♀, ♂. Sitka, ALASKA.

(?) *B. praticola* Kirby, 1837, p. 274. ♀. Lat. 65°.

Ashmead, 1902a, p. 127. Popoff Island and Kodiak, ALASKA; VII. "Also found in SIBERIA."

*B. juxtus* Ashmead, 1902a, p. 127. Kukak Bay, Matlakatla, Nushagak River (McKay), and Wrangell (Wickham), ALASKA; VII.

*B. kirbyellus pleuralis* Friese, 1904b, p. 519.

(?) Cockerell, 1916c, p. 10. Whitefish Point, Chippewa County, MICHIGAN; VII; (Andrews).

Sladen, 1919a, p. 31g. ♂, ♀. Nome, ALASKA; (Johansen).

[K.] **polaris** Curtis, 1835, Pl. XIII. ♂, ♀. ARCTIC AMERICA. (See MEADE-WALDO, 1916, p. 469.)

Cresson, 1863, p. 101. Methy Portage, Arctic America.

MacLachlan, 1878, p. 106. Hayes Sound, lat. 79°; (Feilden).

Ashmead, 1902a, p. 127. Kodiak and Seldovia, ALASKA; VII.

*B. nidulans* Friese, 1904b, p. 519. Makes *polaris* a synonym.

Franklin, 1913, p. 298. Rama, Nain, Ft. Chimo, and Urgava, LABRADOR. McCormick Bay, GREENLAND. Considers Ashmead's, 1902a, p. 127, records from Kodiak and Seldovia, Alaska, doubtful.

Lutz, 1916, p. 520. Barrow, ALASKA; (Stefansson). Tupkak, in the delta of the MACKENZIE; (Anderson).

*Bremus polaris* Frison, 1919 p. 457. 76° 30' N. to 78° 20' N.; Crocker Land Expedition.

Sladen, 1919a, p. 27g. ♂, ♀, ♀. Nome (Johansen) and west of Collinson Point (Leffingwell), ALASKA; Kamarkok, west of Herschel Island, and Herschel Island (Johansen); Bernard Harbour, NORTHWEST TERRITORIES (Johansen).

*praticolus*. See *centralis*, *flavifrons*, *pleuralis*, *rufocinctus*, and p. 503.

*proximus*. See *occidentalis*.

*prunellæ*. See *cockerelli* and *rufocinctus*.

*pulcher*. See *formosus*.

*putnami*. See *kirbyellus*.

*pyropygus*. See *kirbyellus pyropygus*.

[F.] **ramonensis** Franklin, 1913a, p. 140. (*B. Bombias*) ♂. San Ramon, (?) COSTA RICA.

*ridingsii*. See *bimaculatus*.

[F.] **rubicundus** Smith, 1854, p. 400. ♀. COLOMBIA.

Handlirsch, 1888, p. 236. VENEZUELA.

*B. bicolor* Friese, 1903, p. 254. ♀. Cuenca, ECUADOR; 2200 m. Colom, MEXICO.

*B. (Bombias) rubicundus* Franklin, 1913a, p. 162. ♂. Callanga, PERU.

[F.] **rufocinctus** Cresson, 1863, p. 106. ♂\*, ♀. Pikes Peak, COLORADO; (W. J. Howard).

*B. ternarius* (in part) Putnam, 1863, p. 99 and Packard, 1864, p. 117. Bridport, VERMONT; the nest "under the clapboards of a house."

*B. edwardsii* Cresson, 1878a, p. 184. ♀, not ♀ and ♂. Localities doubtful, as it is not said where each sex came from.

- Guignard, 1886, p. 68. Ottawa, CANADA.
- B. praticola* Provancher, 1888, p. 341. ♂, not the ♂. Ottawa, CANADA; (Guignard).
- Cockerell, 1893, p. 338. West Cliff, Custer County, COLORADO; V, VIII; at *Gymnolomia multiflora*.
- B. iridis* Cockerell and Porter, 1899, p. 386. ♀. Beulah and Monument Rock (Santa Fé Canyon, 8000 ft.), NEW MEXICO; V, VIII; at *Iris missouriensis* and *Rudbeckia laciniata*; (Porter).
- B. prunellæ* Cockerell and Porter, 1899, p. 391 (the part from Beulah, NEW MEXICO).
- (?) *B. ternarius* Cockerell, 1899, p. 156. Seattle, WASHINGTON; IV; (Kincaid).
- B. edwardsii* Titus, 1902, p. 41. Fort Collins, Bellvue, Rist Canyon, Westlake, and Barnes Camp (8000 ft.), COLORADO; VI-VIII.
- Titus, 1902, p. 43. Horsetooth Gulch, COLORADO.
- B. iridis* Cockerell, 1904, p. 8. Pecos, NEW MEXICO; VI; at *Fallugia*.
- B. iridis phaceliæ* Cockerell, 1906b, p. 160. ♀. Ward, COLORADO; 9000 ft.; VII; at *Phacelia circinata*.
- B. prunellæ* Viereck, 1906, p. 238. Oak Creek Canyon, ARIZONA; VIII; (Snow).
- B. iridis* Cockerell, 1906, p. 313. "Canadian to Upper Sonoran."
- B. edwardsii* Cockerell, 1906d, pp. 453, 454. Florissant, COLORADO; VI; at *Edwinia*; (Rohwer). *B. iridis phaceliæ*: VII; at *Polemonium* and *Pedicularis*.
- Bombias rufocinctus* Swenk, 1907, p. 295. West Point, and Glen, Harrison, Pine Ridge and (*edwardsii*) Warbonnet Canyon, Sioux County, NEBRASKA; VII, VIII; at *Verbena*.
- B. rufocinctus astragali* Cockerell, 1907c, p. 97. ♀. Boulder, Ward, and Florissant, COLORADO; VI; at white *Astragalus* and at *Phacelia*; (W. P. and T. D. A. Cockerell, Rohwer).
- Cockerell, 1907b, p. 257. Eldora, COLORADO; at *Gaillardia*. Also varieties *phaceliæ*, *iridis*, and *astragali*.
- Fletcher and Gibson, 1908, p. 111. Radisson, SASKATCHEWAN, and Ottawa, CANADA; IX; (Fletcher).
- Tucker, 1909, p. 277. Colorado Springs, COLORADO; VIII.
- B. hyperboreus albertensis* Cockerell, 1909c, p. 36. ♀. Calgary, ALBERTA; (Dod). See also Cockerell, 1913b, p. 110.
- B. rufocinctus phaceliæ* and *astragali* Cockerell, 1910a, p. 25. Calgary, ALBERTA; VI.
- B. (Bombias) rufocinctus* Franklin, 1913, p. 438. OREGON. CALIFORNIA. NEVADA. UTAH. Mescalera, NEW MEXICO. MONTANA. WYOMING. KANSAS. SOUTH DAKOTA. St. Paul, MINNESOTA. WISCONSIN. MICHIGAN. NEW YORK. TENNESSEE (?). QUEBEC. ONTARIO. MANITOBA. Regina, old territory of ASSINIBOIA.
- Franklin, 1915, p. 414. Fargo, NORTH DAKOTA. Detroit, MINNESOTA; (Stevens).
- B. rufocinctus astragali* Cockerell, 1915b, p. 483. Tolland, COLORADO; at *Frasera stenosepala*.



*B. rufocinctus castoris* Cockerell, 1915, p. 537. ♂. Beaver Creek, MONTANA; 6300 ft.; VIII; (Hunter). Franklin's, 1913, "Variety 6."

*B. rufocinctus phaceliæ* Cockerell, 1919d, p. 358. Minnehaha, Pikes Peak, COLORADO; (Frances Long.)

Doubtless the several varieties should be recognized; some of them may even be distinct species.

*rufosuffusus*. See *huntii*.

*sandersoni*. See *vagens sandersoni*.

*schmiedeknechti*. See *terrestris moderatus*.

*schneideri*. See *ephippiatus*.

*scutellaris*. See *fraternus*.

[F.] **separatus** Cresson, 1863, p. 165. ♀\*, ♀. PENNSYLVANIA. Rock Island, ILLINOIS; (Walsh). CANADA; (Saunders). *B. virginicus*, ♂, p. 87.

Cresson, 1864, p. 41. Northern NEW YORK; (Ashton).

Putnam, 1864, p. 101, and Packard, 1864, p. 114. Bridport, VERMONT. Boston, MASSACHUSETTS. Nest.

Putnam, 1876, p. 195, and Cresson, 1876, p. 210. Davenport, IOWA. Spring Lake, UTAH.

Bowles, 1880, p. 33. Montreal, CANADA.

Handlirsch, 1888, p. 229 (part). GEORGIA (?).

*B. virginicus* Provancher, 1888, p. 339. ♂. Quebec, CANADA.

Robertson, 1891a, pp. 569-596. Carlinville, ILLINOIS; at *Asclepias verticillata*, *incarnata*, *cornuti*, *sullivanti*, and *purpurescens*, *Acerates longifolia*, *Hydrophyllum appendiculatum*, *Mertensia virginica*, *Ipomœa pandurata*, *Collinsia verna*, *Gerardia pedicularis* and *tenuifolia*.

Robertson, 1894, pp. 436-475. Macoupin County, ILLINOIS; at *Prunus serotina*, *Rosa humilis*, *Pyrus coronaris*, *Crataegus crusgalli*, *Veronia fasciculata* (printed *noveboracensis* but changed by author in copies he sent out), *Lacinaria* ["*Liatrix*"] *pycnostachya*, *Solidago canadensis* and *lanceolata*, *Aster novæ-angliæ*, *Silphium laciniatum*, *Echinacea purpurea*, *Rudbeckia triloba*, *Helianthus grosseserratus*, *strumosus*, and *tuberosus*, *Coreopsis aristosa*, *Helentium autumnale* and *Cnicus altissimus discolor* and *lanceolatus*.

Robertson, 1895a, pp. 142, 143. ♀, ♀. At *Frasera carolinensis* and *Phlox pilosa*.

Robertson, 1896, pp. 156, 160, 175, 178. At *Podophyllum peltatum*, *Æsculus*, *Astragalus canadensis*, *Aster ericoides villosus*, and *Rudbeckia laciniata*.

Robertson, 1898a, pp. 233, 236, 244. At *Cornus florida*, *Viburnum pubescens* and *Helianthus divaricatus*.

Cockerell, 1899c, p. 3. Baldwin, Douglas County, KANSAS; (Bridwell).

Harris and Kucks, 1902, p. 36. Lake View, KANSAS; at *Cassia chamaecrista*.

Titus, 1902, p. 39. Fort Collins (Stannard) and Henderson (Gillette), COLORADO; VI-VIII.

Viereck, 1903a, p. 119. Boonsboro and Chestertown, MARYLAND; VIII; (Vanatta).

*Bombias separatus* Robertson, 1903, pp. 176, 177.

*Bombias separatus* Viereck *et al.*, 1904, p. 97. Corvallis, Oregon; III-XI; (Cordley).

Grænicher, 1906, p. 14. Menomonee Valley, WISCONSIN; at *Sanguinaria canadensis*.

Grænicher, 1907, p. 93. ♀. At *Ribes cynosbati*.

*Bombias separatus* Swenk, 1907, p. 294. Lincoln, Omaha, Beatrice, South Bend, Weeping Water, Nebraska City, West Point, Neligh, Niobrara, Springview, Gordon, and Sioux County, NEBRASKA; II-X; at *Prunus*, *Salix*, *Ribes*, *Rubus*, *Malus*, *Astragalus*, *Lonicera*, *Petalostemon*, *Psoralea*, *Verbena*, *Symphoricarpos*, *Monardria*, *Cassia*, *Solidago*, *Carduus*, and *Helianthus*.

Cockerell, 1907b, p. 258. Boulder, COLORADO; VIII; (W. P. Cockerell).

Tucker, 1909, p. 278. Lawrence, KANSAS; V.

*Bombias separatus* Smith, 1910, p. 699. Caldwell and Westville, NEW JERSEY. Staten Island, NEW YORK.

Cockerell, 1911, p. 391. Cuttyhunk Island, MASSACHUSETTS; VII.

*Bombias separatus* Grænicher, 1911, p. 249. Solon Springs in Douglas County, Randall and the mouth of the Yellow River in Burnett County, Hudson in St. Croix County, Prescott and Maiden Rock in Pierce County, and Fountain City in Buffalo County, WISCONSIN; VII, VIII.

*B. (Bombias) separatus* Franklin, 1913, p. 425. CONNECTICUT. RHODE ISLAND. DELAWARE. VIRGINIA. WEST VIRGINIA. OHIO. Detroit and Maple, MICHIGAN. INDIANA. KENTUCKY. Grand Rapids, WISCONSIN. MINNESOTA. MISSOURI. Charlotte and Raleigh, NORTH CAROLINA. SOUTH CAROLINA. GEORGIA. Capron and Miami, FLORIDA. ALABAMA. MISSISSIPPI. LOUISIANA. TENNESSEE. ARKANSAS. NORTH and SOUTH DAKOTA. MONTANA. WYOMING. IDAHO. Pasco, Wawawai, Almota, and Yakima City, WASHINGTON. Echo, OREGON.

*Bombias separatus* Viereck, 1916, p. 759. New Haven, CONNECTICUT.

Bequaert, 1920, p. 9. Sherborn, MASSACHUSETTS.

See *bimaculatus*.

[P.] *sitkensis* Nylander, 1848, p. 235. ♀, ♂, ♂. Sitka, ALASKA.

*B. oregonensis* Cresson, 1878a, p. 185. ♂. OREGON; (Edwards).

*B. mixtuosus* Ashmead, 1902a, p. 128. ♀, ♂. Popoff Island, Yakutat, Virgin Bay, and Fox Point, ALASKA; VI, VII.

(?) *B. mixtuosus* Viereck *et al.*, 1904, p. 99. Vancouver, BRITISH COLUMBIA; V, VI; (Harvey).

(?) *B. oregonensis* Viereck *et al.*, 1904, p. 99. Corvallis, OREGON; III-VIII; (Cordley). Vancouver, BRITISH COLUMBIA; V.

*B. derhamellus sitkensis* Friese, 1904b, p. 518.

Fletcher and Gibson, 1908, p. 111. Mt. Cheam, British Columbia, (Fletcher); and Skagway District of Northern BRITISH COLUMBIA, (White-Fraser).

Franklin, 1913, p. 377. Fort Wrangel, Seldovia, Juneau, and Urcu, ALASKA. Comox and Metlakatla, BRITISH COLUMBIA. Mt. Rainier, Olympic Mountains, Seattle, and Pullman, WASHINGTON. Mt. Hood, OREGON. Lolo Trail and Bitter Root Mountains, IDAHO. Fieldbrook, CALIFORNIA.

See *alboanalis* and *frigidus*.

- [D.] **sonomæ** Howard, 1904, Pl. II, fig. 7. ♀. No text description; no locality. *B. "sonomæ"* was probably intended by Howard to be "*sonorus*" but was misprinted.

Franklin, 1913a, p. 133. ♀, ♂, ♂. Eslava and (Townsend) Meadow Valley (7000 ft.; at head of Rio Piedras Verdes, six miles south of Colonia Garcia, Sierra Madre de western Chihuahua), MEXICO.

*sonorensis*. See *sonorus*.

- [D.] **sonorus** Say, 1837. ♀. MEXICO.

*B. pennsylvanicus* Handlirsch, 1888, p. 238 (part). Puebla, Orizaba, Tacubaya, and Chapultepec, MEXICO.

*B. sonorensis* Fox, 1893, pp. 23, 120. San José del Cabo, Comondu, and El Taste (3400 ft.), Lower California, MEXICO; III; (Eisen, Haines).

*B. pennsylvanicus sonorus* Dalla Torre, 1896, p. 539.

Cockerell and Porter, 1899, p. 388. Rio Ruidoso in White Mountains at 6500 to 6900 ft. and Las Cruces, NEW MEXICO; VII, VIII; at *Monarda stricta*, *Verbascum thapsus*, *Vicia* near *pulchella*, *Prunella vulgaris*, *Mentzelia rusbyi*, *Rhus glabra*, and *Helianthus annuus*.

Cockerell, 1904, p. 8. Pecos, NEW MEXICO; VIII. Also, p. 234, San Pedro, CALIFORNIA, VII; at *Datura meteloides* and *Cæsalpinia gilliesi*.

Cockerell, 1906, p. 313. Mesilla Valley, NEW MEXICO. "Transition to Lower Sonoran."

Davidson, 1911, p. 66. CALIFORNIA: "Fairly common on the coast [near Los Angeles] and has been collected inland through the ranges around the Mohave desert to Inyo County and at Palm Springs in the Colorado desert."

Franklin, 1913, p. 407. Devil's River, Kerrville, Llano, and San Antonio, TEXAS. Silver City and Alamogordo, NEW MEXICO. Reef, Palmerlee and Huachuca Mountains, ARIZONA. San Luis, Cholula, San Luis Potosi, Morelia, and Guadalajara, MEXICO.

Franklin, 1915, p. 414. Northern Sonora, MEXICO; (Morrison). (?) Sonoma County, CALIFORNIA.

- [D.] **steindachneri** Handlirsch, 1888, p. 239. ♂, ♂. Yapanema, BRAZIL. Cuernavacca, MEXICO.

Franklin, 1913a, p. 105. ♀. Tacubaya, MEXICO.

Franklin, 1915, p. 414. MEXICO: Chilpancingo (4600 ft.), Amula (6000 ft.), Acaguizotla (3500 ft.), and Tepetlapa (3000 ft.), all in Guerrero, (Smith); Jallsco, in San Blas, and Tepic, (Schumann); and Ventanas (2000 ft.), (Forrer).

- [K.] **strenuus** Cresson, 1863. ♀\*, ♂. Yukon River, ALASKA, and "Hudson Bay Territory"\*; (Kennicott).

(?) *B. frigidus* Ashmead, 1902a, p. 126.

Franklin, 1913, p. 297. Fort Yukon and Fort Cosmos, ALASKA.

*suckleyi*. See *Psithyrus suckleyi*.

- [P.] **syvicola** Kirby, 1837, p. 272. Lat. 65°, America.

(?) *B. ornatus* Smith, 1854, p. 398. ♀, ♂, ♂, (part). HUDSON BAY.

Cresson, 1863, p. 106. Yukon River and Great Slave Lake, CANADA; (Kennicott).

Cresson, 1879, p. 231. COLORADO.

(?) Bowles, 1880, p. 33. This Montreal record is probably erroneous.

Ashmead, 1902a, p. 127. Kukak Bay, Popoff Island, Seldovia, and Unalaska, ALASKA; VII, VIII.

Fletcher and Gibson, 1907, p. 129. Fullerton, HUDSON BAY Country; VI; (Hackett).

Franklin, 1913, p. 338. Nain and Rama, LABRADOR. Rigolet and Ungava Bay, UNGAVA. Point Barrow (Lat. 71°), ALASKA.

Lutz, 1916, p. 515. Langton Bay, NORTHWEST TERRITORY; (Anderson).

Sladen, 1919, p. 127. Makes it a synonym of the Eurasian *lapponicus* Fab.

Sladen, 1919a, p. 29g. ♀, ♂, ♂. Nome, and Teller, ALASKA. Herschel Island, YUKON TERRITORY. Bernard Harbour, NORTHWEST TERRITORY.

See *melanopygus*.

[P.] *silvicola flavicollis* Friese, 1911, p. 572. (*B. lapponicus flavicollis*) Pikes Peak, COLORADO.

[P.] *silvicola johanseni* Sladen, 1919a, p. 30g. ♀, ♂. Nome and Teller, ALASKA. Herschel Island, YUKON TERRITORY. Bernard Harbour, NORTHWEST TERRITORIES, (Johansen). Batrer Island (Jenness) and Collinson Point (Leffingwell), ALASKA. Fort Epworth, Coronation Gulf (O'Neill).

[P.] *ternarius* Say, 1837, p. 414. ♂. INDIANA; Franklin doubts the locality. A description of *ternarius* Harris, 1835, p. 70, *nom. nud.*, MASSACHUSETTS.

(?) *B. ornatus* Smith, 1854, p. 398. ♀, ♂, ♂, (part). HUDSON BAY.

Cresson, 1863, p. 104. ♀, ♂, ♂, (part). MAINE. CONNECTICUT. PENNSYLVANIA. The records for Kansas, Utah, Puget Sound, and Arctic America are doubtful.

Putnam, 1864, p. 99. Bridport, VERMONT. Nest.

Bowles, 1880, p. 33. Montreal and Quebec, CANADA.

*B. ternarius ornatus* Handlirsch, 1888, p. 230.

(?) Cockerell, 1893, p. 337. Willow Creek, Custer County, COLORADO; VIII.

Evans, 1896, p. 13. Sudbury, ONTARIO.

Harvey and Knight, 1897, p. 79. Jackman, MAINE.

Lovell, 1898a, pp. 383, 387, 389. At *Gaultheria procumbens*, *Cornus stolonifera* and *Aralia racemosa*.

Lovell, 1907, p. 197. Waldoboro, MAINE; IV-IX; at *Salix discolor* and *bebbiana*, *Æsculus hippocastanum*, *Rhodora canadensis*, *Gaylussacia resinosa*, *Rhus typhina*, *Solidago bicolor*, *Aralia hispida*, and *Eupatorium perfoliatum*.

Fletcher and Gibson, 1907, p. 129. Prince Albert, CANADA; VII; (Fletcher).

*B. ternarius* Grænicher, 1907, pp. 26, 36, 91, 93. ♀, ♂. WISCONSIN; at *Allium cernuum*, *Vagnera stellata*, *Ribes oxycanthoides* and *cynosbati*.

*B. huntii* ("=ternarius") Grænicher, 1911, p. 248. Solon Springs in Douglas County, Never's Dam in Polk County, and Fishtrap and the mouths of the Nemakagon and Yellow Rivers in Burnett County, WISCONSIN; VII, VIII.

Franklin, 1913, p. 213. NEW HAMPSHIRE. NEW YORK. Jeannette, PENNSYLVANIA. WEST VIRGINIA. Grand Rapids, WISCONSIN. Minneapolis, St. Paul, and Lake Itasca, MINNESOTA. Bigstone, SOUTH DAKOTA. Tower City, NORTH DAKOTA. Hampton, PRINCE EDWARD ISLAND. Saguenay River, QUEBEC. Ottawa, ONTARIO. Winnipeg, MONTREAL. Oxbow, Regina, and Carnduff, SASKATCHEWAN. St. Albert and MacLeod, ALBERTA. There is no doubt but that the Barbados, W. I., record is either a mistake or due to an accident.

Crawford, 1913, p. 269. Red Head, St. John, Douglas Harbor, Grand Lake, and Nerepis, NEW BRUNSWICK; VII-IX.

Franklin, 1915, p. 414. Fargo and Medora, NORTH DAKOTA. Lake Park, MINNESOTA; (Stevens).

Lutz, 1916, p. 514. Battle Harbor, LABRADOR; (Leng). Lake Marcia, Sussex County, NEW JERSEY.

Cockerell, 1916c, p. 7. Floodwood, Schoolcraft County, and Whitefish Point, Chippewa County, MICHIGAN; VII; (Gauge, Andrews).

Bequaert, 1920, p. 9. Sherborn, MASSACHUSETTS. Colebrook, CONNECTICUT.

See *edwardsii*, *fervidus*, *huntii*, *melanopygus*, *mexicensis*, and *rufocinctus*.

*ternarius bifarius*. See *edwardsii*.

[P.] **ternarius expallidus** Cockerell, 1916c, p. 9. Floodwood, Schoolcraft County, MICHIGAN; VII; (Gauge).

*ternarius lacustris*. See *edwardsii*.

[T.] **terrestris moderatus** Cresson, 1863, p. 109. (*B. moderatus*) New name for *B. modestus* Cresson, 1863, p. 99 (not Smith). ♀. Yukon River, Arctic America; (Kennicott).

*B. terrestris ferrugineus* Schmiedeknecht, 1878, p. 359. ♀, ♂, ♂.

*B. terrestris schmiedeknechti* Meunier, 1888, pp. 173, 197. Franklin's page reference is wrong. See, however, Handlirsch, 1888a, p. 64.

*B. terricola modestus* Handlirsch, 1888, p. 234.

*B. moderatus* Ashmead, 1902a, p. 123. Kodiak, ALASKA; VII.

Fletcher and Gibson, 1908, p. 111. Banff, CANADA; (Sanson).

Franklin, 1913, p. 262. "This form ranges throughout the greater part of EUROPE and SIBERIA. In the New World, it appears to be confined to ALASKA, though it may possibly be found in the adjoining territory of Yukon. My Alaskan records are as follows: Point Barrow, Cosmos, Kukak Bay, Koynkuk and Kodiak. I also have records from Petropaulski, Kamchatka and Bering Island."

Diven, 1916, p. 470. Maligne Lake, near Jasper, ALBERTA; VII.

Sladen, 1919, p. 127. Considers it to be a "form" of the Eurasian *lucorum*.

*B. lucorum moderatus* Sladen, 1919a, p. 31g. ♀. Nome, ALASKA; (Johansen).

*terrestris terricola*. See *terricola*.

[T.] **terricola** Kirby, 1837, p. 273. ♀. Lat. 65°, North America.

Cresson, 1863, p. 99. ♀; HUDSON BAY TERRITORY.

Cresson, 1864, p. 41. Northern New York; (Ashton).

Packard, 1864, p. 112. ♂. MAINE.

Bowles, 1880, p. 33. Quebec and Montreal, CANADA.

Evars, 1896, p. 13. Sudbury, ONTARIO.

Harvey and Knight, 1897, p. 79. Jackman, MAINE.

Fletcher and Gibson, 1907, p. 129. Kebinakagami River, near height of land, HUDSON BAY slope; VIII; (Wilson).

Lovell, 1898a, p. 383, 385, 387-389. At *Gaultheria procumbens*, *Impatiens biflora*, *Cornus stolonifera* and *alternifolia*, and *Aralia racemosa*.

Lovell, 1907, p. 196. Waldoboro, MAINE; IV-VII; at *Salix discolor* and *bebbiana*, *Rhodora canadensis*, *Æsculus hippocastanum*, *Rosa humilis*, *Viburnum alnifolium*, *Gaylussacia resinosa*, *Aralia hispida*, *Solidago bicolor*, *Vicia cracca*, *Epilobium angustifolium*, and *Eupatorium perfoliatum*.

Titus, 1908, p. 317. Rock Harbor and Siskowit Bay, Isle Royale, MICHIGAN. His records from KANSAS and Colorado, and possibly the one from Illinois, are probably in error.

Cockerell, 1910a, p. 25. Calgary, ALBERTA; VI, VII.

*B. terrestris terricola* Friese and Wagner, 1910, p. 28.

Cockerell, 1911, p. 390. Woods Hole, MASSACHUSETTS; (Cattell).

Gränicher, 1911, p. 249. Solon Springs and St. Croix Dam in Douglas County, and Fishtrap, Randall, and mouths of the Nemakagon and Yellow Rivers in Burnett County, WISCONSIN; VII, VIII.

Franklin, 1913, p. 274. All the NEW ENGLAND states except Rhode Island. Oneida, Keere Valley, and Long Island, NEW YORK. NEWFOUNDLAND. PRINCE EDWARD ISLAND. Ottawa, Lake of Bays, and Nepigon, ONTARIO. Arveme and Winnipeg, MANITOBA. Oxbow and Regina, SASKATCHEWAN. St. Albert and Edmonton, ALBERTA. Lake Itasca, MINNESOTA.

Crawford, 1913, p. 269. Red Head, St. John, and Nerepis, NEW BRUNSWICK; VII-X.

Franklin, 1915, p. 413. Fargo, NORTH DAKOTA. Detroit and Lake Park, MINNESOTA; (Stevens).

Lutz, 1916, p. 521. Ramsey, NEW JERSEY. Black Mountains, NORTH CAROLINA; (Beutenmuller). Boisedale, Cape Breton Island, Codroy, and Spruce Brook, NEWFOUNDLAND.

Viereck, 1916, p. 758. Branford and Colebrook, CONNECTICUT; V, VII.

Cockerell, 1916c, p. 10. Floodwood, Schoolcraft County, and Whitefish Point, Chippewa County, MICHIGAN; VII; (Gauge, Andrews).

Bequaert, 1920, pp. '9, 10. Forest Hills, Auburndale, and Sherborn, MASSACHUSETTS. Essex Falls, Essex County, NEW JERSEY. Astoria, Long Island, NEW YORK.

Sladen, 1919, p. 126. Banff, ALBERTA. Compares it with *terrestris*. Says it is distinct from *occidentalis*.

See *occidentalis*.

*titusi*. See *americanorum*.

*tricolor*. See *kirbye*<sup>11</sup>us.

[P.] **trinominatus** Dalla Torre, 1890, p. 139. New name for *modestus* Smith, not Eversmann.

*B. modestus* Smith, 1861, p. 153. ♀, not ♂. Oaxaca, MEXICO. (See Meade-Waldo, 1916, p. 469.)

Franklin, 1915, p. 411. Omilteme, Guerrero, MEXICO; 8000 ft.; (Smith)

*unifasciatus*. See *medius* and *mexicanus*.

[P.] **vagans** Smith, 1854, p. 399. ♀. "North America."

Cresson, 1863, p. 91. ♂, ♂ (not ♀). CANADA. MAINE. CONNECTICUT. PENNSYLVANIA. NEW JERSEY. DELAWARE. DISTRICT OF COLUMBIA. VIRGINIA. ILLINOIS.

*B. consimilis* Cresson, 1864, p. 41. ♀. CANADA. NEW YORK.\* MASSACHUSETTS.

Cresson, 1864, p. 41. Northern NEW YORK; (Ashton).

Packard, 1864, p. 115 (not the ♀). Warwick, MASSACHUSETTS. Chamberlain Lake at the headwaters of Penobscot River, MAINE.

(?) Bowles, 1880, p. 33. Québec and Montreal, CANADA.

*B. consimilis* Provancher, 1883, p. 734.

Provancher, 1888, p. 339. Cap Rouge, CANADA.

Robertson, 1891a, pp. 571-595. At *Asclepias incarnata* and *purpurescens*, *Triosteum perfoliatum*, *Phlox divaricata*, *Polemonium reptans*, *Hydrophyllum virginicum* and *appendiculatum*, *Mertensia virginica*, *Linaria vulgaris*, *Scrophularia nodosa marilandica*, *Pentstemon pubescens*, *Veronica virginica*, *Seymeria macrophylla*, and *Gerardia pedicularia*.

Robertson, 1894, pp. 452, 455, 471. Macoupin County, ILLINOIS; at *Eupatorium serotinum*, *Solidago canadensis*, and *Helianthus tuberosus*.

*B. consimilis* Evars, 1896, p. 13. Sudbury, ONTARIO.

Harvey and Knight, 1897, p. 79. Jackman, MAINE.

Lovell, 1898, pp. 4, 5 (of separate). Waldoboro, MAINE; at *Sagittaria latifolia* and *Pontederia cordata*. 1898a, pp. 383, 385, 389; at *Gaultheria procumbens*, *Chelone glabra*, *Impatiens biflora*, and *Aralia racemosa*; also "*B. consimilis*" at the first two.

(?) *B. consimilis*, Viereck, 1901, p. 325. Eagle City (65° 31' N.), ALASKA; (Kirk).

*B. consimilis* Britton and Viereck, 1906, pp. 213, 217, 219. At *Ribes nigrum*, *Pyrus malus*, and *Cydonia vulgaris*.

*B. consimilis* Gräniche, 1907, pp. 23, 32, 36, 40, 42, 91, 94. ♂, ♀. WISCONSIN; at *Allium tricoccum*, *Asparagus officinalis*, *Clintonia borealis*, *Vagnera stellata*, *Salomonias biflora* and *commutata*, *Ribes oxycanthoides* and *gracile*.

*B. consimilis* Lovell, 1907, p. 198. Waldoboro, MAINE; V-IX; at *Salix bebbiana*, *Lonicera ciliata*, *Rhodora canadensis*, *Clintonia borealis*, *Rhus typhina*, *Epilobium angustifolium*, *Pontederia cordata*, *Falcata comosa*, *Trifolium pratense*, *Pontederia cordata*, *Epilobium angustifolium*.

*B. consimilis*, Swenk, 1907, p. 296. Lincoln, Omaha, South Bend, Weeping Water, Meadows, Cedar Bluffs, Nebraska City, Falls City and Nemaha City, NEBRASKA; at *Rubus*, *Lonicera*, and *Petalostemon*.

*B. consimilis* Titus, 1908, p. 317. Rock Harbor, Isle Royale, MICHIGAN. Fletcher and Gibson, 1908, p. 111. Restrevor, Muskoka, ONTARIO. Regina, SASKATCHEWAN. Banff, ALBERTA. Westbourne, MANITOBA. VIII, IX. (Gibson, Fletcher, Wallis).

*B. consimilis* Cockerell, 1910a, p. 25. Calgary, ALBERTA; VII; (Dod).

Cockerell, 1911, p. 390. Woods Hole, MASSACHUSETTS; (Cattell).

*B. consimilis* Grænicher, 1911, p. 249. Solon Springs, Gordon, St. Croix Dam, and Coppermine Dam in Douglas County, Swiss and mouths of Nemakagon and Yellow Rivers in Burnett County, Farmington in Polk County, Maiden Rock in Pierce County, and Fountain City in Buffalo County, WISCONSIN; VII, VIII.

Franklin, 1913, p. 349. NORTH CAROLINA. KENTUCKY. OHIO. INDIANA. St. Paul and Lake Itasca, MINNESOTA. IOWA. MISSOURI. KANSAS. NORTH and SOUTH DAKOTA. Eastern COLORADO. WYOMING. Missoula, Big Fork, and Ravalli County, MONTANA. Meach Lake, QUEBEC. Ottawa and Nepigon, ONTARIO. Nest.

Crawford, 1913, p. 269. St. John and Nerepis, NEW BRUNSWICK; VIII-X. Viereck, 1916, p. 757. Branford, Colebrook, Prospect, and Stonington, CONNECTICUT. He recognizes *consimilis* as a variety.

*B. consimilis* Cockerell, 1917e, p. 212. Falls Church, VIRGINIA; at *Helianthus annuus zonatus*.

Bequaert, 1920, p. 9. Forest Hills, Auburndale, Dedham, Boston, and Sherborn, MASSACHUSETTS.

See *affinis*.

[P.] **vagans sandersoni** Franklin, 1913, p. 353. ♀. Hanover and Durham, NEW HAMPSHIRE. Amherst, MASSACHUSETTS.

*vancouverensis*. See *edwardsii*.

*veganus*. See *flavifrons*.

*velutinus*. See *niger*.

*violaceus*. See *niger*.

*virginicus*. See *impatiens* and *separatus*.

*vogti*. See *volucelloides*.

[F.] **volucelloides** Gribodo, 1891, p. 119. ♀. Chiriqui, PANAMA. "Antioquia."

*B. leucomelas* Crawford and Swenk, 1903, p. 268. ♀, ♂. Cartago, Volcano Irazu, and Monte Redonda, COSTA RICA; II-VI.

*B. vogti* Friese, 1903, p. 254. ♀. BOLIVIA. Callanga and Marcapata, PERU. Popayan, COLOMBIA.

*B. (Bombias) volucelloides* Franklin, 1913a, p. 155. Boquete, Chiriqui, PANAMA. Zarzero, COSTA RICA. ECUADOR. Chanchamayo, PERU. Tarata, BOLIVIA.

Franklin, 1915, p. 415. Omilteme, Guerrero, MEXICO; 8000 ft.; (Smith). Rio Sucio, COSTA RICA; (Rogers).

Friese, 1916, p. 298. San José, COSTA RICA; (Schmidt).

[P.] **vosnesenskii** Radoszkowsky, 1862. ♀, ♂. CALIFORNIA; (Vosnessensky).



*B. californicus* Smith, 1854, p. 400. ♂ (not ♀).

*B. californicus* Cresson, 1863, p. 97. ♀, ♂ (not ♀).

*B. flavifrons* Smith, 1866, p. 343. Vancouver Island, BRITISH COLUMBIA.

*B. californicus* Handlirsch, 1888, p. 243. Localities uncertain.

*B. columbicus* Dalla Torre, 1890, p. 139. N. n. for *flavifrons* Smith, not Cresson.

*B. columbicus* Cockerell, 1904e, p. 89. Los Angeles and Bear Valley, CALIFORNIA; (Davidson).

Cockerell, 1910, p. 27. San Gabriel Mountains, near Pasadena, CALIFORNIA; 1750 ft.; VII; (Grinnell).

Franklin, 1913, p. 325. OREGON. WASHINGTON. Orsmy County, NEVADA.

[F.] *weisi* Friese, 1903, p. 253. ♀ (?), ♂. San Carlos, COSTA RICA.

Var. *albocaudata*, BOLIVIA.

Friese, 1904a, p. 188. Banos, ECUADOR; (Hænsch).

*B. (Bombias) weisi*. Franklin, 1913a, p. 148. San Antonio, COLOMBIA.

Friese's workers probably belong to *nigrodorsalis montezumæ*.

Franklin, 1915, p. 412. Huascary, PERU; 6500 ft.; (Townsend).

See *nigrodorsalis*.

[D.] *wilmattæ* Cockerell, 1912b, p. 21. (*B. lateralis wilmattæ*) ♀. Antigua\* and Guatemala City, GUATEMALA; (W. P. Cockerell).

*B. ephippiatus d* Handlirsch, 1888, p. 233. GUATEMALA.

*B. guatemalensis* Franklin, 1913, pp. 196, 197. *Nomen nudam*.

Franklin, 1913a, p. 100. ♀, ♀. Quiché, GUATEMALA. ECUADOR.

Franklin, 1915, p. 414. Quezaltenago, GUATEMALA; 7800 ft.; (Champion).

### *Bremus* Panzer

See *Bombus*.

**CALYPTAPIS** Cockerell, 1906e, p. 41

(Type: *Calyptapis florissantensis* Ckll.)

**florissantensis** Cockerell, 1906e, p. 42. Fossil. Florissant, Colorado; (No. 4933, S. H. Scudder). "Not far from certain species of the modern *Melissodes*."

Cockerell, 1908, p. 324. Fossil. Miocene Shales, Station 13 B. Florissant Colorado; (W. P. Cockerell). Shown to belong to the Bombidæ.

**PSITHYRUS** Lepeletier, 1832, p. 372

(Type: *Apis rupestris* Fabricius)

*Apathus* Newman, 1834, p. 404.

Like *Bombus*, this genus has been divided into groups, *Laboriosus*, *Ashtoni*, and *Fernaldæ*, which are indicated here by their initials. It has also been made a distinct family but there seems to be no excuse for higher than subfamily rank, and even this is very questionable.

*alata*. See *laboriosus* and *Bombus fervidus*.

[A.] **ashtoni** Cresson, 1864, p. 42. (*Apathus*) ♀. NEW YORK\*; (Ash-ton). MAINE; (Packard). CANADA; (Saunders).

*Apathus ashtoni* Packard, 1864, p. 118. Brunswick, MAINE. Boston (?), MASSACHUSETTS.

*Apathus ashtoni* Bowles, 1880, p. 33. Quebec and Montreal, CANADA.

*Apathus ashtoni* Provancher, 1882, p. 268. Cap Rouge, CANADA.

*Apathus ashtoni* Provancher, 1883, Faun., Ent. Can. Hym., p. 736. [Have not seen.]

*Apathus ashtoni* Evans, 1896, p. 13. Sudbury, ONTARIO.

Dalla Torre, 1896, p. 565.

*Bombus asptoni* Harvey and Knight, 1897, p. 79. Jackman, MAINE, VIII.

*P. variabilis* Howard, 1904, Pl. II, fig. 35.

Lovell, 1907, p. 199. ♀, ♂. Waldoboro, MAINE; VI-VIII; at *Vaccinium*, *Solidago*, *Epilobium angustifolium*, and *Aralia hispida*.

(?) *P. latitarsus* Titus, 1908, p. 317. Rock Harbor, Isle Royale, MICHIGAN.

*P. consultus* Fletcher and Gibson, 1908, p. 11 (part). Regina, SASKATCHEWAN.

Smith, 1910, p. 698. Caldwell and (*variabilis*) Jamesburg, NEW JERSEY; VII.

Franklin, 1913, p. 466. ONTARIO. Meach Lake and Maisonneuve, QUEBEC. Hampton, PRINCE EDWARD ISLAND. Conway, Durham, and Twin Mountain, NEW HAMPSHIRE. VERMONT. Ithaca, NEW YORK. CONNECTICUT. PENNSYLVANIA. VIRGINIA. MINNESOTA.

Crawford, 1913, p. 269. Red Head and St. John, NEW BRUNSWICK; IX, X.

Franklin, 1915, p. 415. Fargo, NORTH DAKOTA. Lake Park, MINNESOTA. (Stevens).

Viereck, 1916, p. 760. New Haven, CONNECTICUT; VII.

Cockerell, 1916c, p. 8. Floodwood, Schoolcraft County, and Whitefish Point, Chippewa County, MICHIGAN; VII; (Gaige, Andrews).

Sladen, 1919, p. 127. A "form" of the Eurasian *vestalis*.

Bequaert, 1920, p. 10. Auburndale, Brookline, Cambridge, and Sherborn, MASSACHUSETTS.

[L.] **bicolor** Franklin, 1913, p. 460. ♀. Rociada, NEW MEXICO; (Cockerell).

Franklin, 1915, p. 413. Xucumanatlan, Guerrero, MEXICO; 7000 ft.

*californicus*. See *Bombus californicus*.

*cevallæ*. See *Bombus americanorum*.

*citrinus*. See *laboriosus*.

*consultus*. See *ashtoni* and *insularis*.

*contiguus*. See *laboriosus*.

[L.] **crawfordi** Franklin, 1913, p. 464. ♀, ♂. Placer County, CALIFORNIA. OREGON.

*elatus*. See *laboriosus* and *Bombus americanorum*, *fervidus*, and *perplexus*.

[F.] **fernaldæ** Franklin, 1911, p. 164. ♀. Orono, MAINE. Amherst, MASSACHUSETTS. Webster, Durham, Crawfords, Mt. Washington and Conway, NEW HAMPSHIRE. Ithaca, NEW YORK. Mt. Rainier, WASHINGTON. Kaslo and Metlakatla, BRITISH COLUMBIA. Nushagak and Sitka, ALASKA. Is, in part, the *P. insularis* Ashmead, 1902a, p. 130. Probably the ♀ of *tricolor*.

*fraternus*. See *Bombus fraternus*.

[?] **guatemalensis** Cockerell, 1912b, p. 21. ♂. Guatemala City, GUATEMALA; (W. P. Cockerell).

[L.] **insularis** Smith, 1861, p. 155. (*Apathus*) ♀. Vancouver Island, BRITISH COLUMBIA; (Lyall).

*Bombus interruptus* Greene, 1858, p. 11. ♀. N. W. coast of America. Fort Steilacoom\*, WASHINGTON Territory. OREGON; VII. (Suckley).

*Apathus insularis* Cresson, 1863, p. 113, not the ♂. 1876, p. 210: Empire and Clear Creek, COLORADO; (Putnam).

Handlirsch, 1888, p. 248 (part).

Ashmead, 1902a, p. 130 (part).

Viereck, 1902, p. 45. Beulah, NEW MEXICO; VII, VIII; (Cockerell).

Morrill, 1903, p. 225. MONTANA. Durham, NEW HAMPSHIRE.

Viereck, *et al.*, 1904, p. 100. ♂, ♀. Corvallis, OREGON. Mt. Cheam, BRITISH COLUMBIA. IV, VI, VIII. (Cordley, Harvey).

Cockerell, 1906d, p. 453. Florissant, COLORADO; VI; at *Iris missouriensis*.

Viereck, 1906, pp. 238, 240, 242. Oak Creek Canyon, ARIZONA; VIII. Madgalena Mountains, NEW MEXICO; VII. Manitou Park, COLORADO. (Snow).

Swenk, 1907, p. 297. Sioux County, NEBRASKA.

*P. interruptus* Fletcher and Gibson, 1907, p. 129. Mount Edith, Banff, ALBERTA; VII; (Fletcher).

Cockerell, 1910a, p. 25. Calgary, ALBERTA.

Franklin, 1913, p. 455. Cloudcroft, NEW MEXICO. UTAH. Missoula, Gallatin County, Ravalli County, Big Fork, Bozeman, Bridger Canyon, and Sedan, MONTANA. Pullman, WASHINGTON. Ithaca, NEW YORK. Glacier and Kaslo, BRITISH COLUMBIA. Saguenay River, QUEBEC. (?) Berg Bay, ALASKA.

*P. consultus* Franklin, 1913, p. 459. New name for *Apathus insularis* Cresson, 1863, p. 113, ♂ var. *b.*; and *P. suckleyi* Fletcher and Gibson, 1908, p. 111. Mt. Arrowsmith, Kelowna, and Fort MacLeod, BRITISH COLUMBIA. Banff, ALBERTA. Regina, SASKATCHEWAN. Pullman, Blue Mountains, and Ellenburg, WASHINGTON. Missoula and Gallatin County, MONTANA. Logan, UTAH. Pagosa Peak, Ward, and Manitou Peak, COLORADO. Magdalena Mountains, NEW MEXICO.

*P. consultus* Cockerell, 1915b, p. 483. Tolland, COLORADO; at *Frasera stenosepala*.

Crawford, 1913, p. 270. Red Head, St. John, and Nerepis, NEW BRUNSWICK; VII, IX, X.

Sladen, 1915, p. 84. Agassiz, BRITISH COLUMBIA; VII; (Treherne). ♀ and ♂ (*consultus*) in nest of *Bombus flavifrons*.

Franklin, 1915, p. 415. Fargo, NORTH DAKOTA; (Stevens).

Cockerell, 1916c, p. 8. Floodwood, Schoolcraft County, and Whitefish Point, Chippewa County, MICHIGAN; VII; (Gaige and Andrews).

See *ashitoni*, *fernaldæ*, *suckleyi*, *tricolor* and *Bombus impatiens*.

*interruptus*. See *insularis* and *suckleyi*.

[L.] **intrudens** Smith, 1861, p. 154. (*Apathus*) ♀. Oaxaca, MEXICO.

Handlirsch, 1888, p. 248. Puebla, MEXICO; (Bilimck).

Franklin, 1915, p. 413. A female with two labels: "Santa Cruz" and "San Geronimo, Guatemala, (Champion)."

*kodiakensis*. See *Bombus kincaidii*.

[L.] **laboriosus** Fabricius, 1804, p. 352. (*Bombus*) "Carolina."

For *alata* and *elatus* see p. 502.

*Apathus citrinus* Smith, 1854, p. 385. ♂. United States.

*Apathus laboriosus* Cresson, 1863, p. 111. ♀. CANADA. CONNECTICUT.

*Apathus contiguus* Cresson, 1863, p. 112. ♂. CONNECTICUT. PENNSYLVANIA. DELAWARE.\*

*Apathus citrinus* Cresson, 1863, p. 112. MASSACHUSETTS. CONNECTICUT. NEW YORK. ILLINOIS.

*Apathus laboriosus* Cresson, 1872, p. 284. Dallas County, TEXAS; (Boll).

*Apathus laboriosus* Cresson, 1879, p. 230. WEST VIRGINIA.

(?) *Apathus elatus* Bowles, 1880, p. 33. Montreal, CANADA.

*Apathus laboriosus* and *citrinus* Provancher, 1882, pp. 268, 269. Cap Rouge, CANADA. Have not seen Provancher, 1883, Faun. Ent. Can. Hymen., pp. 736, 737.

*Psithyrus citrinus* Handlirsch, 1888, p. 248.

Dalla Torre, 1896, p. 569.

*Apathus laboriosus* Robertson, 1891a, p. 569. At *Asclepias verticillata*.

Robertson, 1896a, p. 156. At *Ptelea trifoliata*.

*Apathus elatus* Birkman, 1899, p. 245. Fedor, Lee County, Texas.

Viereck, 1903a, p. 119. College Park, MARYLAND; X.

Lovell, 1907, p. 199. Waldoboro, MAINE; VII-IX; at *Pontederia cordata*,

*Inula helenium*, *Carduus odoratus*, *Epilobium angustifolium*, and *Solidago*.

Swenk, 1907, p. 297. Lincoln and West Point, NEBRASKA; VIII-IX.

Fletcher and Gibson, 1907, p. 129. Ottawa, CANADA; IV; (Fletcher).

Smith, 1910, p. 698. Caldwell and (*elatus*) Anglesea, Jamesburg, and Monmouth County, NEW JERSEY; X.

Gränicher, 1911, p. 248. Maiden Rock, Pierce County, WISCONSIN; VII-VIII.

Franklin, 1913, p. 451. Montreal, Prince Edward Island, and Grand Manan Island, CANADA. NEW HAMPSHIRE. VERMONT. MARYLAND. VIRGINIA. Blowing Rock, Wilkesboro, and Bushnell, NORTH CAROLINA. TENNESSEE. KENTUCKY. OHIO. MICHIGAN. INDIANA. St. Paul and Lake Itasca, MINNESOTA. He does not include Texas; see Cresson, 1872, p. 284, and Birkman, 1899, p. 245.

Crawford, 1913, p. 270. Nerepis, NEW BRUNSWICK; VIII, IX.

Franklin, 1915, p. 415. Fargo and Ka'hryn, NORTH DAKOTA. Lake Park, MINNESOTA. (Stevens).

Viereck, 1916, p. 760. Branford and Salisbury, CONNECTICUT; VIII.

Cockerell, 1916c, p. 8. Whitefish Point, Chippewa County, MICHIGAN; VI; (Andrews).

Bequaert, 1920, p. 10. Forest Hills, Stony Brook Reservation, Auburndale, Brookline and Sherborn, MASSACHUSETTS; VII, VIII; at *Cephalanthus occidentalis*.

- [A.] **latitarsus** Morrill, 1903, p. 224. ♀. Gallatin County and Bozeman\*, MONTANA; (Cooley).

Franklin, 1913, p. 469. Big Fork, MONTANA. Blue Mountains, WASHINGTON. Vancouver and Kaslo, BRITISH COLUMBIA. (?) Ithaca, NEW YORK. Probably the female of *suckleyi*.

Franklin, 1915, p. 416. Creede, COLORADO; 8844 ft.; (Hunter).

See *ashtoni*.

- [L.] **sololensis** Franklin, 1913a, p. 173. ♂. Olas de Moka, Solola, GUATEMALA.

- [A.] **suckleyi** Greene, 1860, p. 169. (*Bombus*) ♂ (according to Franklin, 1913, p. 471, but the original says ♀). PUGET SOUND; (Suckley).

*Apathus insularis* Cresson, 1863, p. 113, ♂, var. *a*.

*P. interruptus* Dalla Torre, 1896, p. 569 (part).

*P. consultus* Fletcher and Gibson 1908, p. 111 (part). Nelson and Mt. Cheam, BRITISH COLUMBIA.

Franklin, 1913, p. 471. Kalso and Duncan's, BRITISH COLUMBIA. St. Albert, ALBERTA. Missoula and Gallatin County, MONTANA. Moscow and Beaver Canyon, IDAHO. Beaver Range Mountains, UTAH; 8000 to 10,000 ft. Santa Clara County, CALIFORNIA. May be the male of *latitarsus*.

Franklin, 1915, p. 416. Creede, COLORADO; 8844 ft.; (Hunter).

- [F.] **tricolor** Franklin, 1911, p. 167. ♂. Fort Wrangle, Juneau, Sitka, and Fox Point, ALASKA. Banff, ALBERTA. Metlakatla, BRITISH COLUMBIA. Olympic Mountains, WASHINGTON. Ward and Pagosa Peak, COLORADO. Brant Lake and Otto, NEW YORK. Weymouth, NOVA SCOTIA; (Bolster). Durham, Webster, and Mt. Washington, NEW HAMPSHIRE. It is the *Apathus insularis*, ♂, var. *c* Cresson, 1863, p. 113, and (?) part of *P. insularis* Ashmead, 1902, p. 130. Probably the male of *fernaldæ*.

Cockerell, 1912f, p. 84. Eldora, COLORADO. Ward, Colorado, designated as the type locality.

- [L.] **variabilis** Cresson, 1872, p. 284. (*Apathus*) ♀\*, ♂. Bosque County\* TEXAS; (Belfrage).

Dalla Torre, 1896, p. 573.

*Apathus variabilis* Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

Cockerell, 1899, p. 157. Stillwater, OKLAHOMA; at *Prunus americana*; (Regnier). Baldwin, KANSAS; (Bridwell). Tuerto Mountain, near Santa Fé, NEW MEXICO; 8200 ft.; VIII; at *Senico*.

Swenk, 1907, p. 297. Lincoln, Ashland, Seward, and West Point, NEBRASKA; V-X; at *Rubus*, *Verbena*, *Liatris*, *Bidens*, *Solidago*, and *Carduus*.

(?) Grænicher, 1911, p. 248. Solon Springs and Coppermine Dam in Douglas County, and the mouths of the Nemakagon and of the Yellow River in Burrett County, WISCONSIN; VII-VIII.

Franklin, 1913, p. 461. Dallas, Cotulla, Austin, Trinity, Victoria, and Goldthwait, TEXAS. ALABAMA. ILLINOIS.

Franklin, 1915, p. 415. Fargo, NORTH DAKOTA, (Stevens). Orizaba, MEXICO.

See *ashtoni*.

*vestalis*. See *ashtoni*.

### EUGLOSSIDÆ

#### *Eufriesia* Cockerell

See *Euglossa*.

**Euglossa** Latreille, 1802, p. 385

(Type: *Apis cordata* Linné)

Friese, 1899*b*, pp. 117-172, gives a monograph of the genus with redescriptions and keys. Ducke, 1902*a*, and Schrottky, 1903, review Brazilian species and give keys. Schrottky, 1907, pp. 48-57, reviews biology, etc., of Paraguay species.

*Centris* Fabricius, 1804, p. 354, (Type: *Apis dimidiata* Fabricius) is a synonym of *Euglossa*, not of the anthophorid *Hemesia*, according to Schrottky. See the discussion, p. 549.

The following subgenera are recognized.

**Eulæma** Lepeletier, 1841, p. 11. "*Eulema*," often used, is French vernacular; see Cockerell, 1906*b*, p. 166.

*Eumorpha* Friese, 1899*b*, p. 126, was proposed as a subgenus. Cockerell, 1904*d*, p. 357, noted that the name is preoccupied and, 1908*c*, p. 41, substituted **Eufriesia** (Type: *pulchra* Smith).

**Glossura** Cockerell, 1917*e*, p. 144. Type: *Euglossa piliventris* Guérin.

*analis*. See *cordata* and *nigrata*.

*angulata*. See *smaragdina*.

*auripes*. See *smaragdina*.

**bicolor** Ducke, 1902*a*, pp. 566, 570. ♂, ♀. Pará, BRAZIL; at *Anthurium regale*.

Crawford, 1906, p. 158. ♀. Pozo Azul, COSTA RICA; V; (Carriker).

**cærulescens** Lepeletier, 1841, p. 11. ♂. Locality unknown.

Smith, 1874, p. 445. ♀, ♂. MEXICO.

Dalla Torre, 1896, p. 312, considered this species to be a synonym of *violacea* Blanchard. See also Ducke, 1910, p. 367.

*E. (Eumorpha) caeruleascens* Friese, 1899b, p. 145. BRAZIL.  
Schrottky 1903, p. 592. São Paulo, BRAZIL.  
Friese, 1916, p. 296. San José, COSTA RICA; (Schmidt).

*cayennensis*. See *fasciata*.

*convexa* and *connexa*. See *mexicana convexa*.

**cordata** Linné, 1758, p. 575. (*Apis*) Probably West Indies.

Latreille, 1802, p. 436.

*Bremus cordata* Jurine, 1807, p. 262.

*Cnemidium viride* Perty, 1833, p. 149.

*Euglossa analis* Westwood, 1840, p. 262.

*E. (Euglossa) cordata* Friese, 1899b, p. 134. "From MEXICO to Rio Janeiro."

Ducke, 1901, p. 31. Pará, BRAZIL; ♀ at *Solanum toxicarium*, and *Allamanda nerifolia*; ♂ at *Gongora maculata*.

Schultz, 1902, p. 153. Biology.

Ducke, 1902a, p. 569. ANTILLES. ♂ at *Sobralia sessilis* in Brazil. Figures of nest.

Ducke, 1902b p. 401. ♂ at *Gongora*, *Sobralia sessilis*, and *Anthurium regale*.

Schrottky, 1903, p. 589. Tampico, MEXICO. VENEZUELA. Bauru, São Paulo, BRAZIL.

Ducke, 1903, p. 370. Biology.

*E. cordata townsendi* Cockerell, 1904a, p. 24. ♂, ♀. Vicinity of San Rafael, Vera Cruz, MEXICO; (Townsend).

Crawford, 1906, p. 158. Guapiles, COSTA RICA; 1000 ft.; V. A color variety at Pozo Azul, Costa Rica; VI; (Carriker). Nests.

Schrottky, 1907, pp. 50, 67. Asunción, PARAGUAY; II, XII. Biology.

Cockerell, 1910, p. 418. JAMAICA; (Swainson).

Cockerell, 1912, p. 61. Porto Velho, Itacoatiara, Abuná, and Madeira-Mancore R. R. Camp 41, BRAZIL; IX; (Mann and Baker).

Cockerell, W. P., 1912, p. 282. Gualan, GUATEMALA; ♂; at *Arthrostemma fragile*.

Cockerell, 1913a, p. 192. Quirigua, GUATEMALA; (W. P. Cockerell). "Variety *townsendi*, Ckll., is not separable."

Friese, 1916, p. 296. San José, COSTA RICA; (Schmidt).

Cockerell, 1917e, p. 146. Bahia, BRAZIL. ECUADOR.

See *variabilis*.

**cyanura** Cockerell, 1917e, p. 146. ♀. Porto Bello, PANAMA; II; (Busck).

**dimidiata** Fabricius, 1793, p. 316. (*Apis*) DUTCH GUIANA.

*Centris dimidiata* Fabricius, 1804, p. 354.

*Bremus dimidiatus* Jurine, 1807, p. 362.

Latreille, 1809, p. 180.

*Eulema dimidiata* Lepeletier, 1841, p. 12.

For other early references, see Dalla Torre, 1896, p. 310.

*E. (Eulema) dimidiata* Friese, 1899b, p. 164. MEXICO. PANAMA. ECUADOR. BOLIVIA. VENEZUELA. FRENCH GUIANA. Pará, Pernambuco, and Bahia, BRAZIL.

Ducke, 1901, p. 32. ♀ at *Oncoba pauciflora*; ♂ at *Catasetum tridentatum* and *macrocarpum*.

Ducke, 1902a, p. 576. At *Polygala spectabilis*.

Schrottky, 1903, p. 598. Chiriqui, PANAMA.

*Eulema dimidiata* Cockerell, 1912, p. 61. Matto Grosso, BRAZIL; IX; (Mann and Baker).

Friese, 1916, p. 296. San José, COSTA RICA; (Schmidt).

**dimidiata quadrifasciata** Friese, 1903a, p. 575. ♂, ♀. San Carlos, COSTA RICA.

**elegans** Lepelletier, 1841, p. 13. (*Eulæma*) ♀. FRENCH GUIANA.

Smith, 1874, p. 442. ♂. Santarem and Chontales, BRAZIL.

*E. (Eulema) elegans* Friese, 1899b, p. 158. DUTCH GUIANA.

Friese, 1900a, p. 122. Flies with *limbata* in VIII at Pará, BRAZIL.

Ducke, 1901, p. 31. ♀ at *Solanum toxicarium*, *Cassia alata* and *hoffmann-seggii*.

Ducke, 1902a, p. 575. NICARAGUA. Belem, Anajas, and Macapá, Pará, BRAZIL; VI.

**fasciata** Lepelletier, 1841, p. 12. (*Eulæma*) ♀, ♂. FRENCH GUIANA.

*Eulæma cayennensis* Lepelletier, 1841, p. 14. ♂. French Guiana.

See Smith, 1874, p. 442.

*Eulema fasciata* Fox, 1895, p. 272. Tepic, MEXICO.

*E. (Eulema) fasciata* Friese, 1899b, p. 163. MEXICO. HONDURAS. COLOMBIA. VENEZUELA. PERU. Pará and Pernambuco, BRAZIL.

Ducke, 1901, p. 31. ♀ at *Solanum toxicarium*, *Oncoba pauciflora*, *Bixa orellana*; ♂, *Cassia alata*, *Catasetum tridentatum* and *macrocarpum*; and, ♂, ♀, *Polygala spectabilis* and *Ischnosiphon*.

*Eulema fasciata* Crawford, 1906, p. 158. Pozo Azul (VI; Carriker), Guapiles (1000 ft.; III), and San José, COSTA RICA.

Cockerell, 1913a, p. 191. Antigua and Quirigua, GUATEMALA; (W. P. Cockerell).

**ignita** Smith, 1874, p. 444. ♂. JAMAICA.

*E. (Euglossa) ignita* Friese, 1899b, p. 137. Chiriqui, PANAMA. VENEZUELA. PERU. BRAZIL. Suggests that it may be a variety of *piliventris*.

Ducke, 1902b, p. 402. ♂ at *Catasetum* and *Stanhopea eburnea*.

Cockerell, 1910, p. 418. ECUADOR; (Rosenberg).

*E. (Glossura) ignita* Cockerell, 1917e, p. 144.

**leucopyga** Friese, 1898, p. 203. (*Eulema*) ♀. COLOMBIA. May be *terminata* Smith, according to Friese, 1899b, p. 159.

*E. (Eulema) leucopyga* Friese, 1903a, p. 574. ♂. COSTA RICA; (Schild).

**mexicana** Mocsáry, 1897, p. 444. (*E. Eulema*) ♀, ♂. Præsidio, MEXICO.

Friese, 1899b, p. 151. Minas Geraës, BRAZIL. Suggests that it may be a variety of *smaragdina* Perty.



**mexicana concava** Friese, 1899*b*, p. 151. ♂. NICARAGUA.

Ducke, 1902*a*, p. 574. Pará, BRAZIL; ♀ at *Cassia alata*.

**mexicana convexa** Friese, 1899*b*, p. 151. ♀. BRAZIL.

*Eulema m. convexa* [misspelled "*connexa*"] Crawford, 1906, p. 158. Guapiles, COSTA RICA; 1000 ft.; III.

*mixta*. See *variabilis mixta*.

**mussitans** Fabricius, 1787, p. 301. (*Apis*)

*Centris surinamensis* Fabricius, 1804, p. 355.

*Bremus surinamensis* Jurine, 1807, p. 262.

*Euglossa surinamensis* Klug, 1807, p. 226.

*Eulema surinamensis* Lepeletier, 1841, p. 13.

*Euglossa surinamensis* Friese, 1899*b*, p. 160. Mexico to Brazil.

*E. (Eulema) surinamensis* Schrottky, 1902, p. 327. Northern Brazil.

*Euglossa surinamensis*, Schrottky, 1903, p. 597. Rio de Janeiro and Pará, BRAZIL. BRITISH GUIANA. FRENCH GUIANA. VENEZUELA. COLOMBIA. HONDURAS.

*Eulema surinamensis* Cockerell, 1904*a*, p. 23. Vicinity of San Rafael, Vera Cruz, MEXICO; III; (Townsend).

Cockerell, 1907*c*, p. 49. "This has been referred by all recent writers to *E. surinamensis*, based on *Apis surinamensis*, L., Syst. Nat., p. 579, No. 36. It is not, however, *A. surinamensis*, L., Syst. Nat., p. 575, No. 6, . . . This latter is a wasp, doubtfully identical with *Zethus mexicanus* (L., 1767). Friese has described a variety from Venezuela, which will stand as *Eulema mussitans nigrifacies* (Friese)." See *nigrifacies*.

*Eulema mussitans* Cockerell, 1912, p. 106. Guatemala City, GUATEMALA; XII; (Wheeler).

*Eulema mussitans* Cockerell, 1913*a*, p. 191. Quirigua, GUATEMALA; at a "big pea"; (W. P. Cockerell).

**nigrifacies** Friese, 1900*a*, p. 121. Includes the following.

*Euglossa surinamensis* Meunier, 1890, p. 63, ♀. Quito, ECUADOR.

*Eulema surinamensis nigrifacies* Friese, 1898, p. 205, and 1899*b*, p. 160. ♂. St. Parime, VENEZUELA.

*E. (Eulema) panamensis* Mocsáry, in Friese, 1899*b*, p. 169. ♀. Chiriqui, PANAMA.

**nigrita** Lepeletier, 1841, p. 14. (*Eulema*) ♀. FRENCH GUIANA.

*Eulema analis* Lepeletier, 1841, p. 14. ♂. BRAZIL.

Smith, 1874, p. 446.

*E. (Eulema) nigrita* Friese, 1899*b*, p. 157. Piahy and Minas Geraës, BRAZIL. Tarapoto, PERU. PANAMA.

Ducke, 1901, p. 50. Pará, BRAZIL; ♀, ♂; at *Centrosema plumieri* and *brasilianum*.

Ducke, 1902*a*, p. 576. Rio de Janeiro and Saõ Paulo, BRAZIL. See also 1903, p. 371, and other papers.

Schrottky, 1903, p. 596. Flower and Brazilian records.

*Centris nigrita* Schrottky, 1907, p. 60. PARAGUAY. Biology.

*Eulema nigrita* Cockerell, 1919, p. 211. "Bogova, Chirique" (Panama?); (Rosenberg).

*panamensis*. See *nigrifacies*.

**piliventris** Guérin, 1845, p. 458. ♀, ♂. Pará, BRAZIL.

Fox, 1891, p. 348. Bog Walk, Parish of St. Catherines, JAMAICA.

*E. (Euglossa) piliventris* Friese, 1899b, p. 136. Bogota, COLOMBIA. DUTCH GUIANA. FRENCH GUIANA. PERU.

Ducke, 1901, p. 31. ♀ at *Solanum toxicarium*, *Oncoba paniciflora*; ♀, ♂, *Polygala spectabilis* and *Ischnosipon* sp.; and ♂ at *Catasetum tridentatum* and *macrocarpum*.

*E. (Glossura) piliventris* Cockerell, 1917e, p. 144. Bartica, BRITISH GUIANA; V. Maroni, FRENCH GUIANA.

See *ignita*.

*purpurea*. See *variabilis purpurea*.

*quadrifasciata*. See *dimidiata quadrifasciata*.

**rugosa** Friese, 1899b, p. 152. (*E. Eulema*) ♀. Cordoba, MEXICO.

*semirufa*. See *speciosa*.

**smaragdina** Perty, 1833, p. 150. (*Centris*) ♂. Prov. Minarum, BRAZIL.

*E. smaragdina* Smith, 1854, p. 382.

See Smith, 1874, p. 445.

Cockerell, 1899b, p. 17. Gives BAY OF CAMPECHE as type locality.

*E. Eulema smaragdina* Friese, 1899b, p. 148. Suggests that *auripes* Gribodo, *mexicana* Mocsáry, and *angulata* Mocsáry are merely varieties.

Friese, 1900a, p. 122. MEXICO. Pará and Pernambuco, BRAZIL.

Ducke, 1901, p. 32. At *Ipomœa*, *Allamanda neriifolia*, *Bixa orellana*, *Cassia alata*, *Centrosema plumieri* and *brasilianum*.

Ducke, 1902a, p. 573. MEXICO to Minas Geraês, on the supposition that *mexicana* is a synonym. Figures of nest and larva.

Ducke, 1903, p. 370. Biology.

See *mexicana*.

**speciosa** Mocsáry, 1897, p. 445. (*E. Eulema*) ♀. Chiriqui, PANAMA ("America centralis").

*Eulema semirufa* Friese, 1898, p. 204. ♂; Chiriqui, PANAMA.

*surinamensis*. See *mussitans* and *nigrifacies*.

*terminata*. See *leucopyga*.

*townsendi*. See *cordata*.

**variabilis** Friese, 1899b, p. 135. ♂, (?) ♀. CENTRAL and SOUTH AMERICA.

Schrottky, 1903, p. 590. Bahia, BRAZIL.

Cockerell, 1917e, p. 145, discusses synonymy, including Ducke's suggestion to sink *variabilis* in favor of *cordata*.

**variabilis mixta** Friese, 1899b, p. 135. ♂, ♀. BOLIVIA. Bahia, BRAZIL. Chiriqui, PANAMA.

Cockerell, 1917*e*, p. 145. Tabernilla, VII, and Cabima, V, (Busck) and Las Cascada (Jennings), near the Canal, PANAMA.

**variabilis purpurea** Friese, 1899*b*, p. 135. ♂. Chiriqui, PANAMA.

Cockerell, 1917*e*, p. 145. Sixola River (Schaus) and Pozo Azul (Carriker), COSTA RICA; VI.

*viride*. See *cordata*.

**viridissima** Friese, 1899*b*, p. 136. ♀, ♂. Cordoba and Orizaba, MEXICO; at *Stanhopea tigrina*.

Friese, 1916, p. 296. San José, COSTA RICA; (Schmidt).

#### *Eulæma*

See *Euglossa*.

#### *Eumorpha*

See *Euglossa*.

#### *Glossura*

See *Euglossa*.

### ANTHOPHORIDÆ

Three subfamilies, which may for the present be called Centrinæ, Anthoporinæ, and Eucerinæ, are recognized. See Cockerell, T. D. A. and W. P., 1901, p. 46.

### CENTRINÆ

#### *Anthophorula* Cockerell

See *Exomalopsis*.

#### **CENTRIS** Fabricius, 1804, p. 354.

One view is that Schrottky (1905, p. 13; 1909*a*, p. 160; and 1914, p. 220) is right in saying that, according to strict rules, "*Centris*" should not be applied to these anthophorid bees.<sup>1</sup> (See *Euglossa*.) Schrottky insists on using "*Hemisía*" for the present genus but "*Trachina*" does not seem to have been ruled out. Friese, 1900, used the name *Centris* and divided the genus into a number of subgenera, but left no typical subgenus. Here, as in certain other genera of bees, would seem to be a fitting place for name "conservation."

The following genera or subgenera have been proposed.

*Trachina* Klug, 1807, pp. 210-213, 266. (Type: *longimana* Fab.)

<sup>1</sup>This is not clear to me. Schrottky says that no Anthophorid *Centris* has "clypeus gibbosus; tibiis posticis incrassatis, compressis, ciliatis"; but these words apply excellently to such a species as *Centris americana* Klug. As Fabricius mixed several genera in his *Centris*, later authors were at liberty to select a non-euglossid type, such as *C. versicolor* Fabricius.—T. D. A. C.

*Hemisia* Klug, 1807, pp. 213, 215, 227. (Type: *hæmorrhoidalis* Fab. See Cockerell, 1906, p. 105.)

*Ptilotopus* Klug, 1810, p. 31.

*Heterocentris* Cockerell, 1899, p. 14. (Type: *cornuta* Cress.) N. n. for *Gundlachia* Cresson, 1865, p. 194.

*Melanocentris* Friese, 1900, p. 241, 244.

*Rhodocentris* Friese, 1900, pp. 242, 244. (See Cockerell, 1904*d*, p. 357.)

*Cyanocentris* Friese, 1900, pp. 243, 244.

*Pæcilocentris* Friese, 1900, p. 244.

Fox, 1899, pp. 63-71, describes a number of new species and gives notes on already described ones. Friese, 1900, pp. 237-350, brings together the original descriptions of all of the species and gives keys, etc.

See also *Epicharis*.

*abdominalis*. See *agilis abdominalis*.

**æthiops** Cresson, 1865, p. 193. ♀. CUBA.

*Centris (Melanocentris) æthiops* Friese, 1900, pp. 242, 268.

*Centris (Ptilotopus) æthiops* Cockerell, 1906, pp. 73, 97.

See *armillata*.

**agilis** Smith, 1874, p. 361. ♂. Vera Cruz, MEXICO.

*Centris (Rhodocentris) agilis* Friese, 1900, pp. 243, 307. *C. ignita* may be the ♀. Orizaba, MEXICO. Piauhy, VENEZUELA (Brazil?).

*Centris (Trachina) agilis* Cockerell, 1906, p. 97.

**agilis abdominalis** Friese, 1899, p. 45. ♀. Piauhy, VENEZUELA (Brazil?).

Vera Cruz, MEXICO.

*albiceps*. See *mexicana albiceps*.

*apicalis*. See *smithii* and *versicolor apicalis*.

**armillata** Cresson, 1869, p. 298. ♂. CUBA.

*Centris (Melanocentris) armillata* Friese, 1900, pp. 242, 268. Probably the ♂ of *æthiops*.

*Centris (Ptilotopus) armillata* Cockerell, 1900, p. 97.

**aterrima** Smith, 1854, p. 378. ♂. MEXICO.

*Centris (Melanocentris) aterrima* Friese, 1900, pp. 241, 267. ♂, ♀.

*Centris (Ptilotopus) aterrima* Cockerell, 1906, p. 97.

*atra*. See *xylocopoides*.

**atripes** Mocsáry, 1899, p. 254. ♂. Præsidio, MEXICO.

*Centris atriventris* Fox, 1899, p. 68 (not of Mocsáry). ♀, ♂; TEXAS and (?) Lower California, MEXICO.

*Centris (Melanocentris) atripes* Friese, 1900, pp. 242, 296. Near *birkmanni*.

*Centris foxi* Friese, 1900, pp. 350. N. n. for *atriventris* Fox.

*Centris atripes* Cockerell, 1904, p. 235. Beeville, TEXAS; VIII; (Townsend).

*Centris (Ptilotopus) atripes* and *foxi* Cockerell, 1906, pp. 97, 314. Douglas, ARIZONA. "Lower Sonoran."

*Centris atripes* Cockerell, 1906a, p. 72. San Bernardino Ranch, ARIZONA; VIII; (Snow).

*atriventris*. See *atripes*.

**atriventris rubripes** Friese, 1899, p. 43. ♂; VENEZUELA. ♀; PANAMA and BRAZIL.

*Centris (Melanocentris) atriventris rubripes* Friese, 1900, pp. 242, 287.

*Centris (Ptilotopus) atriventris rubripes* Cockerell, 1906, p. 97.

See *atripes*.

**bakerella** Friese, 1912a, p. 89. N. n. for *Centris (Hemisia) bakeri* Friese, 1912, p. 199. ♂; Morelos and Guadalajara, MEXICO; (Baker).

*bakeri*. See *bakerella*.

**bicolor** Lepeletier, 1841, p. 163. ♀. "Capt. de Goyan," BRAZIL.

Friese, 1900, p. 288. ♀, ♂. Minos Geraës, Espirito Santo, Rio Grande do Sul, Jundiahay and Ypanema, BRAZIL. FRENCH GUIANA.

Friese, 1916, p. 296. San José, COSTA RICA; (Schmidt).

See *Epicharis*.

*bicolorella*. See *smithii*.

**bimaculata** Lepeletier, 1841, p. 168. ♀. São Paulo, BRAZIL.

(?) *C. fuscata* Lepeletier, 1841, p. 167. ♂. São Paulo, BRAZIL. If this is really the same, it has page-priority.

Burmeister, 1876, p. 163. Congonhas and Lagoa Santa (Minas Geraës), BRAZIL.

*C. (Rhodocentris) bimaculata* Friese, 1900, pp. 243, 306. CENTRAL and SOUTH AMERICA, "überall."

Schrottky, 1902, p. 323. Nueva Palmira, URUGUAY.

Cockerell, 1919, p. 188. El Rancho, GUATEMALA; I; (Deam).

**birkmanni** Friese, 1899, p. 44. ♂, ♀. Fedor, TEXAS; IV-VI; (Birkman). See Birkman, 1899, p. 245.

*Centris (Melanocentris) birkmanni* Friese, 1900, pp. 242, 296.

*Centris (Ptilotopus) birkmanni* Cockerell, 1906, p. 97.

See *atripes*.

**breviceps** Friese, 1899, p. 44. ♂, ♀. Minas Geraës, Amazon, BRAZIL.

*Centris (Rhodocentris) breviceps* Friese, 1900, pp. 243, 301. URUGUAY. COLOMBIA. PERU. BOLIVIA. Chiriqui, PANAMA. May be *vittata* Lepeletier, 1841, p. 168.

Cockerell, 1919, p. 190. Rio Mato, Caura district, VENEZUELA; X; (Carriker).

**cæsalpinia** Cockerell, 1897, p. 394. ♀, ♂. Mesilla Valley, NEW MEXICO; V; at *Hoffmanseggia [Cæsalpinia] falcaria*.

Cockerell, 1898f, p. 314. Las Cruces, NEW MEXICO; at *Cevallia sinuata*.  
*Centris (Melanocentris) caesalpiniae* Friese, 1900, pp. 242, 294, 341.

*Centris (Ptilotopus) caesalpiniae* Cockerell, 1906, p. 97.

See *rhodopus*.

*chilensis*. See *smithii*.

*citrotæniata*. See *flavifrons*.

**clypeata** Friese, 1899, p. 41. ♀, ♂. Orizaba, MEXICO. GUATEMALA.

## II.

*Centris (Melanocentris) clypeata* Friese, 1900, pp. 241, 268. Orizaba and Cornuavacca (Cuernavacca?), MEXICO; II.

*Centris (Ptilotopus) clypeata* Cockerell, 1906, p. 97.

*Centris clypeata* Cockerell, 1913a, p. 192. Antigua, GUATEMALA; (W. P. Cockerell).

**cockerelli** Fox, 1899, p. 68. N. n. for ♀ (not ♂) *Centris hoffmannseggiae* Cockerell, 1897, pp. 395, 397. College Farm, Mesilla Valley, NEW MEXICO; V; at *Hoffmanseggia*.

*Centris cockerelli* Cockerell, 1900, p. 363. Suggests that it is probably *lanosa* ♀.

*Centris cockerelli* Cockerell, 1904e (1905), p. 160. Palm Spring, CALIFORNIA; (Davidson).

Cockerell, 1919, p. 187. San José de Guaymas, MEXICO; IV; (Howard).

**confinis** Pérez, 1905, p. 40. ♀. MEXICO (?).

*cornuta*. See *difformis*.

**costaricensis** Crawford, 1907, p. 21. N. n. for *C. friesei* Crawford, 1906, p. 158. ♀. Guacimo, COSTA RICA; nests between the boards of a porch-roof.

**crassipes** Smith, 1874, p. 372. ♂. JAMAICA.

See Fox, 1891, p. 348.

*Centris (Cyanocentris) crassipes* Friese, 1900, pp. 244, 322.

*Centris (Hemisia) crassipes* Cockerell, 1906, p. 98.

*davidsoni*. See *hoffmanseggiae davidsoni*.

**decolorata** Lepeletier, 1841, p. 160. ♂. Habitat unknown.

*Centris decolorata* Smith, 1874, p. 364. BRAZIL. MEXICO. SANTO DOMINGO.

*Centris (Cyanocentris) decolorata* Friese, 1900, pp. 243, 325. Adds PARAGUAY and describes a ♀, proposing to call it *obscuriventris* [q. v.] in case he has mistaken *decolorata*.

*Centris (Hemisia) decolorata* Cockerell, 1906, p. 98.

See *versicolor*.

*dentipes*. See *lanipes*.

**difformis** Smith, 1854, p. 374. ♀. Rio Tapajos, BRAZIL.

*Centris ? cornuta* Cresson, 1865, p. 194. ♀. CUBA. Suggests new genus, *Gundlachia*.

Cresson, 1879, p. 229. MEXICO.

*Centris (Rhodocentris) difformis* Friese, 1900, pp. 243, 300. FRENCH GUIANA.

*Centris difformis* Crawford, 1906, p. 158. Pozo Azul, COSTA RICA; (Carriker).

*Centris (Heterocentris) difformis* Cockerell, 1906, p. 97.

**domingensis** Dalla Torre, 1896, p. 304. N. n. for *C. thoracica* Smith (not Lepeletier), 1874, p. 370. ♀. SANTO DOMINGO.

*Centris (Melanocentris) domingensis* Friese, 1900, pp. 242, 288.

*Centris (Ptilotopus) domingensis* Cockerell, 1906, p. 97.

**eiseni** Fox, 1893, p. 22. ♀. Guaymas, MEXICO; V; (Eisen).

*Centris (Pæcilocentris) eiseni* Friese, 1900, pp. 244, 333.

**elegans** Smith, 1874, p. 372. ♀. ST. VINCENT.

Ashmead, 1900, p. 300. Grenada, W. I. Probably var. *grenadensis*.

*Centris (Cyanocentris) elegans* Friese, 1900, pp. 244, 332. On p. 350 he proposes n. n. *gracilis* because he included *Epicharis* in *Centris*, thereby introducing *E. elegans* Smith, 1861.

*Centris (Hemisia) elegans* Cockerell, 1906, p. 98.

Cockerell, 1919, p. 186. ♂; windward side of ST. VINCENT, W. I.; (H. H. Smith).

**elegans grenadensis** Cockerell, 1919, p. 186. ♂. GRENADA; (H. H. Smith).

*errans*. See *versicolor*.

*fascialis*. See *nitida fascialis*.

**fasciata** Smith, 1854, p. 377. ♀, ♂. JAMAICA.

Fox, 1891, p. 348. Kingston, JAMAICA.

*Centris (Pæcilocentris) fasciatella* Friese, 1900, pp. 244, 332. N. n. given because he joined *Epicharis* with *Centris*, thereby introducing *fasciata* Lepeletier, 1825. MEXICO.

*Centris (Pæcilocentris) fasciata* Schrottky, 1902, p. 325. Lagoa Santa, Minas Geraës, BRAZIL.

*Hemisia fasciata* Schrottky, 1905, p. 13.

See *versicolor*.

*fasciatella*. See *fasciata*.

**flavifrons** Fabricius, 1775, p. 383. (*Apis*) ♀. BRAZIL.

*Anthophora flavifrons* Fabricius, 1804, p. 375.

Lepeletier, 1841, p. 152.

Smith, 1854, p. 369. ♂.

*Centris citrotentata* Gribodo, 1893, p. 268. ♀; Chiriqui, PANAMA.

Fox, 1895, p. 272. Tepic, MEXICO.

*Centris (Cyanocentris) flavifrons* Friese, 1900, pp. 243, 317. States (p. 319) that he has specimens from Chiriqui, labeled *citrotentata* by Gribodo, which are *flavifrons*, but he did not sink Gribodo's name.

*Centris (Hemisia) citrotæniata* Cockerell, 1906, p. 98.

*Centris (Hemisia) flavifrons* Cockerell, 1906, p. 98. MEXICO.

*C. citrotæniata* Cockerell, 1919, p. 192. Rio Mato, Caura district, VENEZUELA. BRITISH GUIANA; IV.

**flavifrons flavofasciata** Friese, 1899, p. 46. ♂. MEXICO.

**flavifrons rufescens** Friese, 1899, p. 46. ♂. Chiriqui, PANAMA.

*flavofasciata*. See *flavifrons flavofasciata*.

*foxi*. See *atripes*.

*friesei*. See *costaricensis*.

*fuscata*. See *bimaculata*.

*fulviventris*. See *lanipes*.

**fusciventris scutellata** Friese, 1900, p. 273. (*Centris Melanocentris*)

♂, ♀. Chiriqui, PANAMA.

*gracilis*. See *elegans*.

*grenadensis*. See *elegans grenadensis*.

*gualanensis*. See *inermis gualanensis*.

**hæmorrhoidalis** Fabricius, 1775, p. 386. (*Apis*) ♀. America.

*Centris tabaniformis* Fabricius, 1804, p. 358. ♂; SOUTH AMERICA.

Fabricius, 1804, p. 359. ♀. American islands.

*Megilla hæmorrhoidalis* Illiger, 1806, p. 142.

*Hemisia tabaniformis* Klug, 1807, p. 227.

*Hemisia hæmorrhoidalis* Klug, 1807, p. 227.

*Anthophora hæmorrhoidalis* Lamark, 1817, p. 61.

Fox, 1891, p. 348. Kingston and Port Antonio, JAMAICA.

Ashmead, 1900, pp. 209, 300. GRENADA. CUBA. PORTO RICO. CENTRAL AMERICA. SOUTH AMERICA. Some of these are probably mistakes in identification.

*Centris (Cyanocentris) hæmorrhoidalis* Friese, 1900, pp. 243, 328. ST. THOMAS. GUATEMALA.

*Centris (Hemisia) hæmorrhoidalis* Cockerell, 1906, pp. 73, 98. JAMAICA. Cockerell, 1912a, p. 140, made the specimens from Santo Domingo *lepeletieri*.

Cockerell, 1919, p. 186. St. Andrew, JAMAICA; IV; (Taylor).

See *versicolor*.

**hoffmanseggiae** Cockerell, 1897, pp. 395, 397. ♂ (not ♀). College Farm Mesilla Valley, NEW MEXICO; V; at *Hoffmanseggia falcaria*. See *cockerelli*.

Cockerell, 1897a, p. 29. Juarez, MEXICO.

*Centris lanosa* Cockerell, 1897, p. 397, ♀ only, and not of Cresson.

Fox, 1899, p. 68. Gives the above synonymy.

Cockerell, 1900b, p. 243. At *Prosopis glandulosa*; V. See 1900, p. 363.

*Centris (Melanocentris) hoffmanseggiae* Friese, 1900, pp. 242, 295, 341.

Fowler, 1902, p. 317. Redlands, CALIFORNIA; VI; (Woodworth).

*Centris (Ptilotopus) hoffmanseggiae* Cockerell, 1906, p. 97.



Cockerell, 1919, p. 187. Claremont, CALIFORNIA; (Baker).

See *cockerelli*.

**hoffmanseggiae davidsoni** Cockerell, 1904e (1905), p. 160. ♂. Banning, CALIFORNIA; (Davidson).

**ignita** Smith, 1874, p. 362. Orizaba, MEXICO.

*Centris (Rhodocentris) ignita* Friese, 1900, p. 243, 307.

*Centris (Trachina) ignita* Cockerell, 1906, p. 97.

See *agilis*.

**inermis** Friese, 1899, p. 46. ♀, ♂. Orizaba, MEXICO. BRAZIL.

*Centris (Rhodocentris) inermis* Friese, 1900, pp. 243, 314. PANAMA. PERU. Bogota, COLOMBIA.

*Centris (Trachina) inermis* Cockerell, 1906, p. 97.

See *versicolor*.

**inermis gualanensis**, Cockerell, 1912a, p. 568. ♀, ♂. Gualan\* and Quirigua, GUATEMALA; II; (W. P. Cockerell).

**insularis** Smith, 1874, p. 367. ♀. SANTO DOMINGO.

*Centris (Cyanocentris) insularis* Friese, 1900, pp. 243, 326. São Paulo, BRAZIL; III and X; suggests that it is merely a variety of *versicolor*.

*Centris (Hemisia) insularis* Cockerell, 1906, p. 98.

*Centris versicolor insularis* Friese, 1916, p. 296. San José, COSTA RICA; (Schmidt).

See *versicolor*.

**labiata** Friese, 1904, p. 91. ♂. San Carlos, COSTA RICA; (Burgdorf).

**labrosa** Friese, 1899, p. 44. ♀, ♂. Central and South America.

*Centris (Rhodocentris) labrosa* Friese, 1900, pp. 243, 302. HONDURAS. GUATEMALA. COLOMBIA. VENEZUELA. MEXICO. DUTCH GUIANA. FRENCH GUIANA. BRAZIL. At *Petraea volubilis*.

*Centris (Rhodocentris) labrosa* Schrottky, 1902, p. 323. Matto Grosso, BRAZIL.

*Centris (Heterocentris) labrosa* Cockerell, 1906, p. 97.

*Centris labrosa* Crawford, 1906, p. 159. Pozo Azul, COSTA RICA; VI.

See *lanipes* and *minuta*.

**labrosa simplex** Friese, 1899, p. 44. ♀. Central and South America.

*Centris labrosa simplex* Crawford, 1906, p. 159. Guacimo, COSTA RICA; 450 ft.; VI.

See *minuta*.

**lanipes** Fabricius, 1775, p. 386. (*Apis*) America.

*Podalirius lanipes* Latreille, 1802, p. 431.

Fabricius, 1804, p. 360. American islands.

*Megilla lanipes* Illiger, 1806, p. 141. ♀.

*Lasius lanipes* Jurine, 1807, p. 237. ♀, ♂.

*Hemisia lanipes* Klug, 1807, p. 227.

Lepeletier, 1841, p. 165. BRAZIL. May be *labrosa* Friese, according to Friese, 1900, p. 310; but Lepeletier's *picea*, p. 166, may be *lanipes*, and *trigonoides*, p. 167, not more than a variety of *lanipes*.

*Centris fulviventris* Cresson, 1865, p. 193. ♀. CUBA. *C. fulviventris* Mocsáry, 1896, p. 7, was named *rufohirta* by Friese, 1900, p. 299.

*Centris dentipes* Smith, 1874, p. 366. ♂. Ega, Santarem, Tapajos, and Pará, BRAZIL. WEST INDIES. MEXICO.

*Centris vulpecula* Burmeister, 1876, p. 164. ARGENTINA. His *lanipes*, p. 163, (not Fabricius) probably = *tricolor* Friese, 1899, p. 45.

Gribodo, 1891, p. 113. PATAGONIA. MONTEVIDEO. BRAZIL. ARGENTINA. VENEZUELA. MEXICO. GUADELUPE. ST. THOMAS.

Ashmead, 1900, p. 300. PORTO RICO.

*Centris (Rhodocentris) lanipes* Friese, 1900, pp. 243, 310, 313. Suggests that *tarsata* Smith may be a variety and that *fulviventris* is a synonym.

Schrottky, 1902, p. 324. Lagoa Santa, Minas Geraës, BRAZIL.

Schrottky, 1903, p. 578. At *Stachytarpha dichotoma* in BRAZIL.

*Centris (Trachina) lanipes* Cockerell, 1906, pp. 73, 97.

Crawford, 1906, p. 159. San José, COSTA RICA; 3550 ft.; VI.

Friese, 1906, p. 95. Mendoza, ARGENTINA; XII; (Jensen-Haarup). Also, p. 100, *C. tricolor*.

*Centris vulpecula* Cockerell, 1919, p. 190. Mendoza, ARGENTINA; (Reed). "I have this from Villa Encarnacion, PARAGUAY, sent by Schrottky as *C. lanipes* variety *tarsata* (Smith). This agrees with Friese's interpretation, but I do not think it is the true *tarsata*. Whether it should be considered a variety of *C. lanipes* I do not know; it is certainly closely allied."

See *tarsata*.

**lanosa** Cresson, 1872, p. 284. ♂. Bosque County; TEXAS, (Belfrage).

Fox, 1893, p. 22. MEXICO: San José del Cabo, (Eisen), Calmalli Mines, IV, and Calamujet, V, (Haines), all in Lower California; and Hemrosillo, Sonora, IV, (Eisen). "Very likely identical with *C. mexicana* Sm."

Cockerell, 1897, p. 397. ♂ (not ♀). College Farm, Mesilla Valley, NEW MEXICO; V; at *Hoffmanseggia*. See *hoffmanseggia*.

Cockerell, 1900b, p. 243. At *Prosopis glandulosa*, V, and, 1901c, p. 42, *Parosela formosa*.

*Centris (Melanocentris) lanosa* Friese, 1900, pp. 242, 293, 342.

*Centris (Ptilotopus) lanosa* Cockerell, 1906, p. 97.

See *cockerelli*, *hoffmanseggia*, and *subhyalina*.

**lepeletieri** Cockerell, 1912a, p. 140. N. n. for *hæmorrhoidalis* Lepeletier, 1841, p. 155. SANTO DOMINGO.

See *hæmorrhoidalis*.

**limbata** Friese, 1899, p. 44. ♀. Fedor, TEXAS; IV; (Birkman).

*Centris (Melanocentris) limbata* Friese, 1900, pp. 242, 297.

*Centris (Ptilotopus) limbata* Cockerell, 1906, p. 97.

*lunulata*. See *Epicharis*.

**lutea** Friese, 1899, p. 43. ♂, ♀. VENEZUELA. BRAZIL. MEXICO.

*Centris (Melanocentris) lutea* Friese, 1900, pp. 242, 289.

*Centris (Ptilotopus) lutea* Cockerell, 1906, p. 97.

*maculata* (Smith) Friese, not Lepeletier. See *Epicharis (Epicharoides)*.

**maculifrons** Smith, 1854, p. 372. ♀. BRAZIL.

*Centris (Cyanocentris) maculifrons* Friese, 1900, pp. 244, 330.

*Centris (Hemisia) maculifrons* Cockerell, 1906, p. 98. MEXICO.

*marginata*. See *morsei marginata*.

**melanchlæna** Smith, 1874, p. 360. ♂. Vera Cruz, MEXICO.

*Centris (Melanocentris) melanochlæna* Friese, 1900, pp. 242, 270. VENEZUELA. BOLIVIA. Gives *nobilis* Friese, *i. l.*, as synonym.

*Centris (Ptilotopus) melanochlæna* Cockerell, 1906, p. 97.

*metatarsalis*. See *Epicharis*.

**mexicana** Smith, 1854, p. 378. ♀. MEXICO.

*Centris (Melanocentris) mexicana* Friese, 1900, pp. 242, 289. ♀, ♂. Orizaba, MEXICO.

*Centris (Ptilotopus) mexicana* Cockerell, 1906, pp. 73, 97. Cuernavaca, MEXICO.

See *lanosa*.

**mexicana albiceps** Friese, 1899, p. 43. ♂. MEXICO.

**minuta** Mocsáry, 1899, p. 254. ♂. MEXICO. Saõ Paulo, BRAZIL.

*Centris (Melanocentris) minuta* Friese, 1900, pp. 242, 293, 303. VENEZUELA. Yucatan, MEXICO. At *Petraea volubilis* and *Ipomæa*. Says that, according to Ducke, it is the ♂ of *labrosa*.

Friese, 1908, p. 40. TRINIDAD.

**mocsáryi** Friese, 1899, p. 42. ♀, ♂. Minas Geraës, Saõ Paulo and Pará, BRAZIL. VENEZUELA. PERU. MEXICO.

*Centris (Melanocentris) mocsáryi* Friese, 1900, pp. 242, 274.

*Centris (Ptilotopus) mocsáryi* Cockerell, 1906, p. 97.

*monozona*. See *Epicharis*.

**montezuma** Cresson, 1879, p. 213. ♀, ♂. MEXICO; (Sumichrast).

*Centris (Rhodocentris) montezuma* Friese, 1900, pp. 243, 308.

*Centris (Trachina) montezuma* Cockerell, 1906, pp. 73, 97.

**morsei** Cockerell, 1897a, p. 355. ♂. Mesilla, NEW MEXICO; VI; (A. P. Morse). Cockerell, 1897c, p. 29; no description.

*Centris (Pæcilocentris) morsei* Friese, 1900, pp. 244, 335. TEXAS.

*Centris (Ptilotopus) morsei* Cockerell, 1906, p. 97.

*Hemisia morsei* Bequaert, 1918, p. 126. Sierra Blanco, TEXAS; at *Centaurea*.

**morsei marginata** Fox, 1899, p. 67. (*C. marginata*) ♂. Las Cruces, NEW MEXICO; VIII; at *Cevallia sinuata*.

*Centris (Ptilotopus) marginata* Cockerell, 1906, p. 97.

Cockerell, 1906a, p. 72. San Bernadino Ranch, Douglas, ARIZONA; 3750 ft.; VIII; (Snow).

*mustelina*. See *Xenoglossa*.

*nigrescens*. See *nitens*.

*nigriventris*. See *nitida*.

**nigrocærulea** Smith, 1874, p. 369. ♀, ♂. MEXICO.

*Centris (Cyanocentris) nigrocærulea* Friese, 1900, pp. 243, 329.

*Centris (Hemisia) nigrocærulea* Cockerell, 1906, p. 98.

**nitens** Lepeletier, 1841, p. 163. ♀. BRAZIL.

*Centris nigrescens* Burmeister, 1876, p. 163. ♂, ♀; Lagoa Santa, BRAZIL.

*Centris (Cyanocentris) nitens* Friese, 1900, pp. 244, 330. Jundiahy and São Paulo, X, (Schrottky), and Minas Geraës and Yponema, BRAZIL. MEXICO. (Briart).

**nitida** Smith, 1874, p. 368. ♀. HONDURAS.

(?) *Centris nigriventris* Burmeister, 1876, p. 165. ♀, ♂. Mendoza and Buenos Ayres, ARGENTINA.

*Centris (Melanocentris) nitida* Friese, 1900, pp. 242, 290. ♀, ♂. VENEZUELA. COLOMBIA. Orizaba, MEXICO. V. These records probably include *otomita*, as well as *nigriventris*.

*Centris (Ptilotopus) nitida* Cockerell, 1906, p. 97.

Crawford, 1906, p. 158. San José, COSTA RICA; V, VI.

See *transversa*.

**nitida fascialis** Mocsáry, 1899, p. 253. (*C. fascialis*) ♀. Songo and S. Antonio, BOLIVA.

*Centris fascialis* Friese, 1900, p. 292. COLOMBIA. Bahia, BRAZIL.

Friese, 1916, p. 296. San José, COSTA RICA; (Schmidt).

*nobilis*. See *melanchlæna*.

**obsoleta** Lepeletier, 1841, p. 153. ♀. FRENCH GUIANA.

Smith, 1854, p. 377. ♂; Rio Tapajos, Amazonas, BRAZIL.

*Centris (Melanocentris) obsoleta* Friese, 1900, p. 272. Pará, BRAZIL. Caracas, FRENCH GUIANA. VENEZUELA. HONDURAS.

**obscuriventris** Friese, 1900, p. 326. (*C. Cyanocentris*) ♂ (?), ♀; not definite as to locality. See *decolorata*.

Cockerell, 1919, p. 187. ♀. Bocas del Toro, PANAMA; VII; (Robinson). Frontera, Tabasco, MEXICO.

Cockerell, 1920, p. 113. Maroni, FRENCH GUIANA.

**otomita** Cresson, 1879, p. 214. ♂. MEXICO; (Sumichrast).

*Centris (Melanocentris) otomita* Friese, 1900, pp. 242, 291. Suggests that it may be *nitida*.

*Centris (Ptilotopus) otomita* Cockerell, 1906, p. 97.

See *nitida*.

**pallida** Fox, 1899, pp. 63, 66. ♀. Phoenix, ARIZONA; V; at *Parkinsonia torreyana*; (Griffith).

*Centris (Ptilotopus) pallida* Cockerell, 1906, pp. 97, 314. "Lower Sonoran."

*pandora*. See *zonata*.

**personata** Smith, 1874, p. 362. ♂. Tapajos and Ega, BRAZIL.

*Centris (Rhodocentris) personata* Friese, 1900, p. 304. BOLIVIA. BRAZIL. DUTCH GUIANA. FRENCH GUIANA. COLOMBIA. MEXICO.

Cockerell, 1919, p. 191. Pará, BRAZIL. Aroa, VENEZUELA. Trinidad River, PANAMA; V.

*picea*. See *lanipes*.

**pæcila** Lepeletier, 1841, p. 154. ♀. CUBA.

Gribodo, 1893, p. 267. ♂. GUATEMALA. Chiriqui, PANAMA.

*Centris (Cyanocentris) pæcila* Friese, 1900, pp. 243, 328. Cordilleran region (Orizaba), MEXICO.

*Centris (Hemisia) pæcila* Cockerell, 1906, p. 98.

Cockerell, 1919, p. 190. Livingston, GUATEMALA; (Barber and Schwarz). Tamos, MEXICO; (Bishopp).

See *versicolor*.

**pæcila segregata** Crawford, 1906, p. 159. ♀. San José, COSTA RICA; 3550 ft., V, VI.

**proxima** Friese, 1899, p. 45. ♀, ♂. Saõ Leopoldina, Jundiáhy, and Pará, BRAZIL.

*Centris (Rhodocentris) proxima* Friese, 1900, pp. 243, 307.

*Centris (Trachina) proxima* Cockerell, 1906, p. 98.

Crawford, 1906, p. 159. Guapiles, COSTA RICA; 1000 ft.; III.

Cockerell, 1919, p. 190. Escuintla, GUATEMALA; (Deam). Alhajuélo, PANAMA; (Busck).

*pulchrior*. See *rhodopus pulchrior*.

**rhodopus** Cockerell, 1897, p. 395. (*C. cæsalpinix* var. *rhodopus*) ♀, ♂. Mesilla Valley, NEW MEXICO; V; at *Hoffmanseggia falcaria*.

Cockerell, 1897c, p. 29. 1900b, p. 243; at *Prosopis glandulosa*; V.

*Centris (Melanocentris) rhodopus* Friese, 1900, pp. 242, 297.

*Centris (Ptilotopus) rhodopus* Cockerell, 1906, p. 97.

Viereck, 1906, p. 238. Bill Williams Fork, ARIZONA; VIII; (Snow).

*Hemisia rhodopus* Bequaert, 1918, p. 126. Sierra Blanco, TEXAS; at *Centaurea*.

**rhodopus pulchrior** Cockerell, 1900, p. 363. ♂. Mesilla Park, NEW MEXICO; VI. Described, without a name, by Fox, 1899, p. 68.

*rubripes*. See *atriventris rubripes*.

*rufescens*. See *flavifrons rufescens*.

**schwarzi** Cockerell, 1919, p. 192. ♀. Cacao, Alta Vera Paz, GUATEMALA; III; (Barber and Schwarz).

*scutellata*. See *fusciventris scutellata*.

*segregata*. See *pæcila segregata*.

**sericea** Friese, 1899, p. 41. ♀. MEXICO; (Ehrenberg).

*Centris (Melanocentris) sericea* Friese, 1900, pp. 242, 271.

*Centris (Ptilotopus) sericea* Cockerell, 1906, p. 97.

**simillima** Smith, 1874, p. 370. ♀. SANTO DOMINGO.

*Centris (Rhodocentris) simillima* Friese, 1900, pp. 243, 316.

*Centris (Trachina) simillima* Cockerell, 1906, p. 98.

*simplex*. See *labrosa simplex*.

**smithii** Cresson, 1879, p. 229. N. n. for *Centris apicalis* Smith (not Guérin), 1874, p. 367. ♀. ST. BARTHOLOMEW. *C. smithii* Friese, 1899, p. 43, is a homonym = *bicolorella*. Cockerell, 1904, p. 235, = (?) *chilensis* Spinola.

*Centris apicalis* Ashmead, 1900, pp. 209, 300. ST. VINCENT.

*Centris (Cyanocentris) apicalis* Friese, 1900, pp. 243, 327. VENEZUELA. Chiriqui, PANAMA. ST. THOMAS. HAYTI.

*Centris (Hemisia) smithii* Cockerell, 1906, p. 98.

**subhyalina** Fox, 1899, p. 96. ♀. TEXAS. "May subsequently prove to be the female of *C. lanosa* Cress."

*Centris (Ptilotopus) subhyalina* Cockerell, 1906, p. 97.

*tabaniformis*. See *hæmorrhoidalis*.

**tarsata** Smith, 1874, p. 371. ♂. Santarem, BRAZIL.

*Centris (Rhodocentris) tarsata* Friese, 1900, pp. 243, 313. Suggests that it is a variety of *lanipes*.

*Centris (Rhodocentris) tarsata* Schrottky, 1902, p. 324. Mendoza, ARGENTINA. Banda Oriental, URUGUAY.

W. P. Cockerell, 1912, p. 279. Gualan, GUATEMALA; at *Iresine paniculata*. Cockerell, 1913a, p. 192. Quirigua, GUATEMALA; (W. P. Cockerell).

See *lanipes*.

**testacea** Lepeletier, 1841, p. 165. ♀. Habitat unknown.

Smith, 1874, p. 365. SANTO DOMINGO.

*Centris (Rhodocentris) testacea* Friese, 1900, pp. 243, 310. Port au Prince, HAYTI.

*Centris (Trachina) testacea* Cockerell, 1906, p. 98.

*thoracica*. See *domingensis*.

**tononaca** Cresson, 1899, p. 213. ♀. MEXICO; (Sumichrast).

*Centris (Rhodocentris) tononaca* Friese, 1900, pp. 243, 313.

*Centris (Trachina) tononaca* Cockerell, 1906, pp. 73, 98.

W. P. Cockerell, 1912, p. 281. Gualan, GUATEMALA.

**transversa** Pérez, 1905, p. 39. ♀, ♂. Tehuacan, MEXICO; (Diguët).

Du Buysson (*in litt.*) considers this to be *nitida* Smith.

*tricolor*. See *lanipes*.

*trigonoides*. See *lanipes*.

**varia** Erichson, 1848, p. 591. (*Hemisia*) ♀. BRITISH GUIANA.

Dalla Torre, 1896, p. 09.

*Centris (Cyanocentris) varia* Friese, 1900, p. 327. BRAZIL. PERU. Chiriqui, PANAMA.

See *versicolor*.

**versicolor** Fabricius, 1775, p. 386. (*Apis*) America.

*Podalirius versicolor* Latreille, 1802, p. 431.

Fabricius, 1804, p. 359. Islands of America.

*Megilla versicolor* Illiger, 1806, p. 142. West Indies.

*Lasius versicolor* Jurine, 1807, p. 237.

*Hemisia versicolor* Klug, 1807, pp. 213, 215, 227.

*Anthophora versicolor* Lamarck, 1817, p. 62.

*Centris versicolor* (♀) and *decolorata* (♂) Lepeletier, 1841, pp. 154, 106.

GUADELOUPE.

*Anthophora versicolor* Lucas, 1856, p. 780. Havana, CUBA.

*Centris versicolor* and *decolorata* Smith, 1874, p. 364. Vera Cruz and Oaxaca, MEXICO. BRAZIL. SANTO DOMINGO.

*Centris errans* Fox, 1899, p. 65. ♀. Biscayne Bay, FLORIDA.

Ashmead, 1900, pp. 209, 300. GRENADA. ST. VINCENT. PORTO RICO. Some of these may be mistaken identifications.

*Centris (Cyanocentris) versicolor*, Friese, 1900, pp. 243, 325. Suggests that *insularis*, *varia*, *inermis*, *fasciata*, *pæcila*, and *hæmorrhoidalis* are merely color-forms of *versicolor*.

Holmberg, 1903, p. 431. ARGENTINA.

Schrottky, 1903, p. 577. At *Crotalaria paulina* in BRAZIL.

*Centris (Hemisia) versicolor* Cockerell, 1906, p. 98. JAMAICA; at *Crotalaria*.

Crawford, 1914, p. 131. DOMINICA; (Foote).

**versicolor apicalis** Guérin, 1845, p. 455. (*Anthophora*) ♀. CUBA.

*Centris (Hemisia) versicolor apicalis* Cockerell, 1906, p. 98.

*versicolor insularis*. See *insularis*.

**vidua** Mocsáry, 1899, p. 252. ♂. San Pedro Sula, HONDURAS.

*Centris (Melanocentris) vidua* Friese, 1900, pp. 242, 271. Orizaba, MEXICO. Thamm, PERU.

*vittata*. See *breviceps*.

*vu pecula*. See *lanipes*.

**xylocopoides** Fox, 1899, p. 70. ♀. TRINIDAD; XI.

*Centris atra* Friese, 1899, pp. 41, 118. ♀, ♂. Blumenau, BRAZIL. COLOMBIA. VENEZUELA. Possibly a prior name.

*Centris (Melanocentris) atra* Friese, 1900, pp. 241, 267, 344.

Ashmead, 1900, pp. 209, 300. GRENADA.

*Centris (Ptilotopus) xylocopoides* Cockerell, 1906, p. 97.

*C. atra* Cockerell, 1919, p. 192. Rio Mato, Caura district, VENEZUELA; (Carriker).

**zonata** Mocsáry, 1899, p. 251. ♀. Chiriqui, PANAMA.

*Centris (Melanocentris) zonata* Friese, 1900, pp. 241, 269. *C. pandora*, new name, was proposed (p. 350) because he included *Epicharis* with *Centris*, introducing *zonata* Smith.

**CHALEPOGENUS** Holmberg, 1903, p. 416(Type: *Chalepogenus incertus* Holmberg)

*Desmotetrapedia* Schrottky, 1909, p. 223, has the same type, *muelleri* Friese = *incertus* Holmberg. See Cockerell, 1914c, p. 320.

**calcaratus** Cresson, 1878, p. 136. (*Tetrapedia*) ♀, ♂. MEXICO; (Sumichrast).

*Tetrapedia calcarata* Friese, 1899a, p. 296. COLOMBIA. VENEZUELA.

*Tetrapedia calcarata* Cockerell, 1912b, p. 31. Quirigua, GUATEMALA; II; at *Pontederia cordata*; (W. P. Cockerell).

Cockerell, 1914c, p. 320.

Cockerell, 1917b, p. 302. Sonsonate, SALVADOR; VIII; (Knab). Paraiso, Canal Zone, PANAMA; I; (Busck).

*Tetrapedia calcarata* Cockerell, 1919, p. 211. St. Lucrecia, Vera Cruz, MEXICO; (Knab).

**globulosus** Friese, 1899a, p. 298. (*Tetrapedia*) ♂. Locality unknown.

Cockerell, 1917b, p. 302. Tobago Island, PANAMA; VII; (Busck). ♀.

Paraiso, Canal Zone, PANAMA; V; (Jennings).

**mayarum** Cockerell, 1912b, p. 30. (*Tetrapedia*) ♀, ♂. Quirigua, GUATEMALA; II; (W. P. Cockerell).

Cockerell, 1914c, p. 320.

**mcestus** Cresson, 1878, p. 135. (*Tetrapedia*) ♀\*, ♂. MEXICO; (Sumichrast).

*Tetrapedia maesta* Friese, 1899a, p. 288. GUATEMALA. See *Tetrapedia atripes*.

*Tetrapedia maesta* Cockerell, 1912b, p. 31. Quirigua, GUATEMALA; II; at *Pontederia cordata*; (W. P. Cockerell).

Cockerell, 1914c, p. 320.

*Cyanocentris* Friese

See *Centris*.

*Desmotetrapedia* Schrottky

See *Chalepogenus*.

*Diadasiella* Ashmead

See *Exomalopsis*.

*Epeicharis* Radoszkowsky

See *Tetrapedia*.

**EPICCHARIS** Klug, 1807, pp. 211-214, 226.(Type: *Centris umbraculata* Fabricius)

Friese, 1900, brings together the original descriptions of all the species, gives keys, etc., making it a subgenus of his *Centris*.



**Epicharoides** Radoszkowsky, 1884, p. 20, (Type: *bipunctatus* Rad.) is here considered as a subgenus, our only species being *maculata*.

*Eucharis* Lepeletier, 1825, p. 794.

*albofasciata*. See *maculata*.

**bicolor** Smith, 1854. ♂. BRAZIL.

*Centris* (*Epicharis*) *bicolor* Friese, 1900, p. 260. ♀, ♂. Pernambuco and São Paulo, BRAZIL. Montevideo, URUGUAY. FRENCH GUIANA. MEXICO. *C. flaviventris*, new name, was proposed (p. 350) because he included this species in the same genus as *Centris bicolor* Lepeletier.

*bipunctatus*. See *maculata*.

**conura** Cockerell, 1917, p. 200. ♀. San Carlos, COSTA RICA; (Schild and Burgdorf).

**elegans** Smith, 1861, p. 152. ♀, ♂. MEXICO; (Sallé).

*Centris* (*Epicharis*) *elegans* Friese, 1900, p. 260. Oaxaca, MEXICO.

*flaviventris*. See *bicolor*.

**lunulata** Mocsáry, 1898, p. 499. ♀, ♂. Chiriqui, PANAMA. Praesidio, MEXICO.

*Centris* (*Epicharis*) *lunulata* Friese, 1900, p. 261. Orizaba, MEXICO.

**maculata** Smith, 1874, p. 320. ♀. Oaxaca, MEXICO.

*Epicharis albofasciata* Smith, 1874, p. 321. ♂. São Paulo, Pará, BRAZIL.

*Epicharoides bipunctatus* Radoszkowski, 1884, p. 20. MEXICO.

Friese, 1899, p. 39. Montevideo, URUGUAY. BRAZIL. VENEZUELA.

*Centris* (*Epicharis*) *maculata* Friese, 1900, p. 262. *C. variabilis*, new name, was proposed (p. 350) because he included this species in the same genus as *Centris maculata* Lepeletier.

Ducke, 1910, p. 365, says that Friese's *maculata* is *albofasciata* Smith, not *maculata* Smith, and that the latter is a Mexican species allied to *cockerelli*.

Cockerell, 1919, p. 194. FRENCH GUIANA; (Schaus). Rio Mato, Caura district, VENEZUELA; (Carriker).

**metatarsalis** Friese, 1899, p. 40. ♂. St. Parime, VENEZUELA. COLOMBIA.

*Centris* (*Epicharis*) *metatarsalis* Friese, 1900, p. 264.

*Centris* (*Epicharis*) *metatarsalis* Friese, 1904, p. 90. ♀, ♂. San Carlos, COSTA RICA; (Burgdorf).

**monozona** Mocsáry, 1898, p. 498. ♀. PANAMA.

*Centris* (*Epicharis*) *monozona* Friese, 1900, p. 259. Bogota, COLOMBIA.

Cockerell, 1906, p. 98. MEXICO.

**phenacura** Cockerell, 1917, p. 200. ♂. San Carlos, COSTA RICA; (Schild and Burgdorf).

*variabilis*. See *maculata*.

*Epichoroides* Radoszkowsky

See *Epicharis*.

*Eucharis* Lepeletier

See *Epicharis*.

**EXOMALOPSIS** Spinola, 1851, p. 89

(Type: *Exomalopsis aureopilosa* Spinola)

Taschenberg, 1883, p. 82, designated *fulvopilosa* Spinola as the type but it is now considered to be a synonym of *aureopilosa*.

Friese, 1899a, pp. 250-270, gives a summary of previous work. Cockerell, 1905a, p. 10, gives a key to U. S. species and, 1918a, p. 476, to certain other species.

**Anthophorula** Cockerell, 1897c, p. 44 (Type: *compactula* Ckll.) is here considered as a subgenus. See also Cockerell, 1898, p. 452, and 1898a, p. 70; also Friese, 1899a, p. 247.

*Diadasiella* Ashmead, 1899, p. 64 (Type: *coquilletti* Ashmead). See Cockerell and Porter, 1899, p. 406.

**albovittata** Cockerell, 1918a, p. 477. ♀. Oaxaca, MEXICO; (Crawford).

**bruneri** Crawford, 1902, p. 238. ♀, ♂. Lincoln, NEBRASKA; at *Helianthus annuus*.

*Anthophorula bruneri* Cockerell, 1906, p. 98.

*Anthophorula bruneri* Cockerell, 1911, p. 390. Sterling, COLORADO; VIII; at *Helianthus lenticularis*.

*Anthophorula bruneri* Cockerell, 1914, p. 114. Dallas, TEXAS; IX; at *Helianthus*; (Bishopp).

See *Melissodes pygmaea*.

**callura** Cockerell, 1912b, p. 319. ♂. Gualan, GUATEMALA; at *Vernonia aschenborniana*; (W. P. Cockerell).

**chlorina** Cockerell, 1918a, p. 477. ♀. Las Cruces, NEW MEXICO; VIII; at *Sphaeralcea*.

**compactula** Cockerell, 1897c, p. 44. (*Anthophorula*) ♀. Las Cruces, NEW MEXICO; VIII; at *Dithyrea wislizenii*; (Townsend).

Cockerell, 1898a, p. 70. Mesilla Valley, NEW MEXICO. See footnote; also, 1898, p. 451: ♀, ♂; La Cueva, Organ Mountains, NEW MEXICO; IX; at *Phacelia congesta*; (Townsend).

*Anthophorula compactula* Cockerell, 1906, pp. 98, 312. "Lower Sonoran."

*Anthophorula compactula* Cockerell, 1906a, p. 73. Brownsville, TEXAS; VI; (Snow).

**coquilletti** Ashmead, 1899, p. 64. (*Diadasiella*) ♂. This species was described by Ashmead, in his generic description of *Diadasiella*, but it is further described by Cockerell and Porter, 1899, p. 406, from the type specimen. San Diego County, CALIFORNIA.

*Anthophorula coquilletti* Cockerell, 1903b, p. 78, and 1905, pp. 14, 15. Los Angeles, CALIFORNIA.

*Anthophorula coquilletti* Cockerell, 1915c, p. 232. Claremont, CALIFORNIA; (Baker).

**crucis** Cockerell, 1918a, p. 478. Medellin, Vera Cruz, MEXICO; (Hyde). Also San Juan Allende, MEXICO; XI; (Townsend).

*cubensis* Spinola, 1851, p. 92. ♀. Cuba; (Poey). Insufficiently described.

*ericarpi*. See *Xenoglossodes*.

**frederici** Cockerell, 1914, p. 115. ♂. MEXICO; (F. Smith).

**fulvescens** Smith, 1879, p. 127. ♀. Oaxaca, MEXICO.

Friese, 1899a, p. 255. ♂. Orizaba, MEXICO; (Krieger).

Cockerell, 1905e, p. 326. Note on type.

**globosa** Fabricius, 1793, p. 333. (*Apis*) ♀, ♂. West Indies; (Sehestedt).

*Anthophora globosa* Fabricius, 1804, p. 375.

*Megilla* (?) *globosa* Illiger, 1806, p. 142.

Friese, 1899a, p. 258. ST. THOMAS. PORTO RICO. COLOMBIA. Gives *obliqua* Friese, *i. l.*, as a synonym and suggests that *pulchella*, *pubescens*, *penelope* and perhaps *similis* are merely color-varieties. The *pubescens* of Ashmead, 1900, from Grenada and St. Vincent probably belongs here.

Holland, 1917, p. 296. Nueva Gerona, Isle of Pines, CUBA; VIII, IX; (Link).

Cockerell, 1917b, p. 302. Mayaguez, PORTO RICO; I; (Hooker).

**limata** Cresson, 1878, p. 133. ♀. MEXICO; (Sumichrast).

Friese, 1899a, p. 256. Orizaba, MEXICO.

**melanurus** Cockerell, 1916d, p. 59. ♀. Claremont, CALIFORNIA; (Baker). "Not typical *Exomalopsis*."

**mellipes** Cresson, 1878, p. 134. (*Exomalopsis* ?) ♀. MEXICO; (Sumichrast).

Cockerell, 1904a, p. 24. San Rafael, Vera Cruz, MEXICO; at *Cordia*; (Townsend).

Cockerell, 1918a, p. 476. ♂. Medellin, Vera Cruz, MEXICO; (Hyde).

**mexicana** Cresson, 1878, p. 133. ♀. MEXICO; (Sumichrast).

**morgani** Cockerell, 1914, p. 114. (*Anthophorula*) ♀. Falfurrias, TEXAS; V; at *Helianthus*; (A. C. Morgan).

**nitens** Cockerell, 1915c, p. 231. ♀. Laguna, CALIFORNIA; (La Follette). *obliqua*. See *globosa*.

**otomita** Cresson, 1878, p. 133. ♀. MEXICO; (Sumichrast).

Friese, 1899a, p. 268. Orizaba, XI, and Cordoba, MEXICO.

Friese, 1916, p. 296. San Mateo, COSTA RICA; (Burgdorf).

**penelope** Cockerell, 1897*b*, p. 161. ♀, ♂. San Rafael, Vera Cruz, MEXICO; VII; at *Cardia*; (Townsend).

Cockerell, 1899*b*, p. 16. Lower part of Rio Nautla, MEXICO.

Friese, 1899*a*, p. 260. Orizaba, V, Tampico and Huastec, MEXICO. BRAZIL.

Schrottky, 1903, p. 531. Bogotá, COLOMBIA.

See *globosa* Fabr.

**planiceps** Smith, 1879, p. 125. ♀, ♂. "Amazons, Tunantins."

Friese, 1899*a*, p. 262. Santos, X, and Bahia, BRAZIL.

Friese, 1916, p. 296. San José, COSTA RICA; (Schmidt).

**pubescens** Cresson, 1865, p. 192. ♂. CUBA; (Gundlach).

(?) Fox, 1891, p. 347. Kingston, JAMAICA.

Cockerell, 1906, p. 98. "Var. in Jamaica."

Holland, 1917, p. 296. Nueva Gerona, Isle of Pines, CUBA; VIII, IX; (Link).

See *globosa*.

**puchella** Cresson, 1865, p. 191. ♀, ♂. CUBA.

Fox, 1891, p. 347. Kingston and Port Antonio, JAMAICA.

Fox, 1893, pp. 25, 120. San José del Cabo, Lower California, MEXICO; X; (Eisen).

Friese, 1899*a*, p. 259. Port au Prince, HAITI. PORTO RICO. Portland, JAMAICA; (Riley).

Cockerell, 1912*b*, p. 29. Quirigua, GUATEMALA; at *Zexmenia virgulta*, (W. P. Cockerell).

Friese, 1916, p. 296. San José, COSTA RICA; (Schmidt).

Holland, 1917, p. 296. Nueva Gerona, Isle of Pines, CUBA; VII-IX; (Link).

See *zexmenia* and *globosa*.

**pygmæa** Cresson, 1872, p. 279. (*Melissodes*) ♀. TEXAS; (Belfrage).

*Melissodes pygmæa* Schwarz, 1896, pp. 24-26. San Diego, Duval County, Texas. Sleeping habits.

Cockerell, 1916*d*, p. 60, says that it is an *Exomalopsis*, possibly *bruneri*.

**rufitarsis** Smith, 1879, p. 126. ♀. JAMAICA.

Fox, 1891, p. 347. Port Antonio, JAMAICA.

Ashmead, 1900, p. 301. CUBA. GRENADA. ST. VINCENT.

Cockerell, 1905*e*, p. 326. Note on type.

**serrata** Friese, 1899*a*, p. 270. ♂. Orizaba, MEXICO.

*Anthophorula serrata* Cockerell, 1906, p. 99.

**sidæ** Cockerell, 1897*b*, p. 160. ♀, ♂. Mesilla, NEW MEXICO; VII; at at *Sida hederacea*.

*Anthophorula sidæ* Cockerell, 1906, p. 99.

**similis** Cresson, 1865, p. 191. ♀. CUBA.

Ashmead, 1900, p. 301. PORTO RICO.

Crawford, 1906, p. 161. Guacimo (450 ft.; VI) and Guapiles (1090 ft.; III), COSTA RICA.

W. P. Cockerell, 1912, p. 281. Gualan, GUATEMALA; at *Cordia alba*.

Cockerell, 1913a, p. 192. Quirigua, GUATEMALA; II; (W. P. Cockerell).

Crawford, 1914, p. 131. DOMINICA; (Foote).

See *globosa*.

**snowi** Cockerell, 1906a, p. 73. ♂. Brownsville, TEXAS; VI; (Snow).

**solani** Cockerell, 1896, p. 25. ♀. Albuquerque, VIII, at *Solanum elaeagnifolium*, and Las Cruces, X, at *Flaveria*, *Verbesina encelioides* and *Bigelovia wrightii*, NEW MEXICO.

Cockerell, 1897c, p. 23. Mesilla Valley and Organ Mountains (Dripping Spring and Soledad Canyon), NEW MEXICO.

Friese, 1899a, p. 256. Mesilla, NEW MEXICO; VII; at *Sphaeralcea augustifolia* [probably *S. lobata*]; (Cockerell). San Antonio, TEXAS; VI.

Cockerell, 1903, p. 444. Mescalero, NEW MEXICO; X; at *Bigelovia graveolens glabrata*.

**solidaginis** Cockerell, 1898, p. 452. ♂. Las Cruces, NEW MEXICO; VIII; at *Solidago canadensis arizonica*; (Townsend).

Cockerell, 1905a, p. 10. La Cueva, Organ Mountains, NEW MEXICO; about 5300 ft.; IX; at *Lippia wrightii*; (Townsend).

Cockerell, 1907d, p. 539. Mesilla and Albuquerque (with only two submarginal cells in each wing), NEW MEXICO; VI.

**stearnsi** Cockerell, 1905, p. 101. (*Melissodes*) ♀. Los Angeles and Redondo, CALIFORNIA; (Davidson).

Cockerell, 1916d, p. 59.

**tepaneca** Cresson, 1878, p. 134. ♀. MEXICO; (Sumichrast).

**texana** Friese, 1899a, p. 264. ♀, ♂. Fedor, TEXAS; IX to XI; (Birkman).

*Anthophorula texana* Cockerell, 1906, p. 99.

**thermalis** Cockerell, 1918a, p. 478. ♀. Aguascalientes, MEXICO; XII; (Bishopp).

**verbesinæ** Cockerell, 1904a, p. 21. ♀. Mesilla Park, NEW MEXICO; VI; at *Verbesina exauriculata*; (Rhodes).

Cockerell, 1905a, p. 10. Tempe, ARIZONA; X; at *Heterotheca*; (Cockerell).

**velutinus** Cockerell, 1916d, p. 58. ♀. Claremont, CALIFORNIA; (Baker). "Not a typical *Exomalopsis*."

**vincentana** Cockerell, 1917b, p. 302. ♀. ST. VINCENT; (H. H. Smith).

Cockerell, 1918a, p. 476. ♂. Windward side of ST. VINCENT; (H. H. Smith).

**zexmeniae** Cockerell, 1912c, p. 447. ♀. Quirigua, GUATEMALA; at *Zexmania virgulata*; (W. P. Cockerell). Gives this name to *Exomalopsis pulchella* Cockerell, 1912b, p. 29.

Cockerell, 1917a, p. 191. Point Isabel, TEXAS; IV; (W. P. Cockerell).

*Fiorentinia*

See *Tetrapedia*.

*Hemisia*

See *Centris*.

*Heterocentris*

See *Centris*.

*Melanocentris*

See *Centris*.

*Pæcilocentris*

See *Centris*.

*Ptilotopus*

See *Centris*.

*Rhodocentris*

See *Centris*

**TETRAPEDIA** Klug, 1810, p. 33

(Type: *Tetrapedia diversipes* Klug).

Friese, 1899a, pp. 247-304, gives a summary of previous work.

*Epeicharis* Radoszkowski, 1884, p. 18 (*mexicanus*).

*Fiorentinia* Dalla Torre, 1896, p. 334. New name for *Epeicharis* Radoszkowsky.

**abdominalis** Cresson, 1878a, p. 182. ♀, ♂. MEXICO; (Sumichrast).

**albilabris** Friese, 1916, p. 335. ♂. San José, COSTA RICA; (Schmidt).

**albipes** Friese, 1916, p. 334. ♂, ♀. San Mateo, COSTA RICA; (Burgdorf). Popayan and Cali Cauca, COLOMBIA.

*amplipennis*. See *lugubris*.

**antennata** Friese, 1899a, p. 297. ♀, ♂. Orizaba and Cordoba, MEXICO; (Saussure).

**apicalis** Cresson, 1878, p. 136. ♀. MEXICO; (Sumichrast).

Friese, 1899a, p. 289. Orizaba, MEXICO.

**atripes** Smith, 1854, p. 366. ♀. MEXICO; (F. Smith).

Friese, 1899a, p. 302. Suggests it may be Cresson's *mæsta*. (See *Chalepogenus*.)

*calcarata*. See *Chalepogenus*.

**fraterna** Cresson, 1878a, p. 136. ♂. MEXICO; (Sumichrast).

*fusciventris*. See *mexicana fusciventris*.

*globulosa*. See *Chalepogenus*.

*griseescens*. See *mexicana griseescens*.

**lugubris** Cresson, 1878, p. 135. ♂. MEXICO; (Sumichrast).

Friese, 1899a, p. 292. ♀; MEXICO. ♂; St. Parime, VENEZUELA.

Ducke, 1910, p. 364, is of the opinion that this species is a synonym of *amplipennis*.

*mæsta*. See *Chalepogenus mæstus*.

**maura** Cresson, 1878, p. 134. ♀\*, ♂. MEXICO; (Sumichrast).

Friese, 1899a, p. 284. GUATEMALA. Orizaba, MEXICO.

*mayarum*. See *Chalepogenus*.

**mexicana** Radoszkowsky, 1884, p. 19. (*Epeicharis*) ♂. Orizaba, MEXICO

*Tetrapedia saussurei* Friese, 1899a, p. 301. GUATEMALA. See Cockerell, 1906, p. 98.

**mexicana fusciventris** Friese, 1899a, p. 301. (*E. saussurei fusciventris*) ♂. MEXICO; (Saussure).

*Tetrapedia mexicana fusciventris* Cockerell, 1906, p. 98.

**mexicana griseescens** Friese, 1899a, p. 301. (*E. saussurei griseescens*) ♂. MEXICO; (Saussure).

*Tetrapedia mexicana griseescens* Cockerell, 1906, p. 98.

*mæsta*. See *Chalepogenus*.

*saussurei*. See *mexicana*.

**swainsonæ** Cockerell, 1909, p. 398. ♀: Bath\*, ST. THOMAS; and JAMAICA; (Swainson). ♂: P. Cr. River, ST. THOMAS; and JAMAICA; VI.

**terminalis** Cresson, 1878, p. 136. ♀. MEXICO; (Sumichrast).

### *Trachina*

See *Centris*.

### **Anthophorinæ**

#### *Amegilla*

See *Anthophora*.

#### *Ancyloscelis*

See *Diadasia* and *Leptergatis*.

#### *Anthemoëssa*

See *Anthophora*.

**Anthophora** Latreille, 1803, p. 167(Type: *Apis retusa* Linnæus)

Dalla Torre, 1896, uses the name *Podalirius* except where we have indicated. Cockerell, 1906, p. 64 *et seq.*, gives keys and notes.

The following subgenera may be recognized.

**Amegilla** Friese, 1897*a*, pp. 5, 18, 26.

**Anthemoessa** Robertson, 1905, p. 372. Type: *Anthophora abrupta* Say.

**Micranthophora** Cockerell, 1906, p. 66. Type: *Anthophora curta* Provancher.

**abrupta** Say, 1837, p. 409. ♂. INDIANA.

*Anthophora sponsa* Smith, 1854, p. 339. ♀; U. S.

*Anthophora sponsa* Walsh, 1868, p. 9, fig. 5. Alton, ILLINOIS; describes nest.

Cresson 1869, p. 291. MASSACHUSETTS. WEST VIRGINIA.

Cresson, 1872, p. 283. Bosque County (?), TEXAS; (Belfrage).

Riley, 1877, p. 563, describes *Hornia* [Coleoptera] in cells of this species.

Cresson, 1879, p. 227. CANADA.

Robertson, 1891*a*, pp. 576, 580, 591. At *Asclepias purpureascens*, *Hydrophyllum virginicum*, *Mertensia virginica*, *Convolvulus sepium*, and *Pentstemon pubescens* and *laevigatus digitalis*.

Robertson, 1894, p. 442. Macoupin County, ILLINOIS; at *Rosa humilis* and *setigera*.

Robertson, 1896, p. 169. Carlinville, ILLINOIS; VI; at *Gillenla stipulacea*.

Cockerell, 1899*c*, p. 3. Baldwin, Douglas County, KANSAS; (Bridwell).

Cockerell, 1905*c*, p. 267. Fedor, Lee County, TEXAS; IV; (Birkman).

See Birkman, 1899, p. 245.

*Anthemoëssa abrupta* Robertson, 1905, p. 372.

Tucker, 1909, p. 278. Lawrence, KANSAS; V, VI.

Smith, 1910, p. 694. Caldwell and Palisades, NEW JERSEY; VII.

Banks, 1912, p. 107. At *Ceanothus*.

A. (*Anthemoëssa*) *abrupta* Viereck, 1916, p. 737.

**abruptella** Cockerell, 1906, pp. 69, 72. ♀. Los Angeles, CALIFORNIA; (Davidson).

**affabilis** Cresson, 1878*a*, p. 189. ♀, ♂. Bosque County, TEXAS; (Belfrage).

*Podalirius affabilis* Cockerell, 1897*e*, p. 105. Mesilla Park, NEW MEXICO; at plum blossoms.

*Podalirius* (*Anthophora*) *affabilis* Cockerell, 1898*a*, p. 69. Mesilla Valley, NEW MEXICO.

Cockerell, 1906, pp. 99, 311. Engle, NEW MEXICO. "Middle Sonoran." At *Astragalus* and *Lycium*.

*alamosana* Cockerell. See *urbana*.



**albata** Cresson, 1876, pp. 211, Pl. XXXV. ♀. DENVER, COLORADO; VI; (Putnam).

*A. (Micranthophora) albata* Cockerell, 1906, p. 100.

*albiceps*. See *Emphoropsis*.

**anstrutheri** Cockerell, 1906, pp. 66, 71, 100. ♀. LOS ANGELES, CALIFORNIA; (Davidson). "Possibly *flavocincta* ♀."

*A. (Micranthophora) anstrutheri* Cockerell, 1906, p. 100.

*A. anstrutheri* variety *a* Cockerell, 1916, p. 283. ♀. Mountains near Claremont, CALIFORNIA; (Baker).

Bray, 1917, p. 93. Claremont, CALIFORNIA; IV; at *Lo us glaber*.

*apicalis*. See *Centris versicolor apicalis*.

**arthuri** Cockerell, 1906, pp. 67, 72, 100. ♀. MAYBELL, COLORADO; VIII; (S. A. Johnson).

*A. (Micranthophora) arthuri* Cockerell, 1906, p. 100.

**atrata** Cresson, 1865, p. 189. ♂. CUBA.

*aurulentocaudata*. See *Emphoropsis*.

**badia** Dours, 1869, p. 107. ♂. MEXICO.

**bidentata** Provancher, 1882, p. 234. (*Ceratina*) ♂. CANADA.

Provancher, 1883, p. 718. (Have not seen.)

*Anthophora nudata* Provancher, 1889 (?), p. 336.

**bomboides** Kirby, 1837, p. 271. ♂. "Lat. 65°," CANADA.

Cresson, 1869, p. 291. ♀, ♂. MASSACHUSETTS. CONNECTICUT. PENNSYLVANIA. WEST VIRGINIA.

Cresson, 1872, p. 283. Bosque County (?), TEXAS; (Belfrage).

Provancher, 1884, p. 691. (Have not seen.)

(?) Cockerell, 1893, p. 338. Custer County, COLORADO. See *bomboides neomexicana* Cockerell, 1906*d*, p. 419.

Evans, 1896, p. 13. Sudbury, ONTARIO.

Cockerell, 1897*c*, p. 20. Santa Fé, NEW MEXICO; 7000 ft.

Grænicher, 1911, p. 248. Solon Springs, Douglas County, WISCONSIN; VII; at *Apocynum* and *rosæmifolium*.

See *scutellaris*.

**bomboides canadensis** Cresson, 1869, p. 292. (*A. canadensis*) ♂. ONTARIO, CANADA; (J. Pettit).

Cresson, 1879, p. 227.

(?) Cockerell, 1900*a*, p. 409. Olympia, WASHINGTON; VI; (Kincaid).

**bomboides neomexicana** Cockerell, 1900*a*, p. 408. ♂, ♀. LAS VEGAS\* and Beulah, NEW MEXICO; V, VI; at alfalfa and *Lycium vulgare*. (?) P. 409: Sioux County, NEBRASKA.

Cockerell, 1905*d*, p. 60. Fort Collins, Denver, and Parker, COLORADO; V; Johnson bred the meloid *Leonidia neomexicana* (Ckll.) from cells collected near Parker. Cockerell, 1906, p. 99, records it at *Lycium*; and, p. 311, adds Trout Spring, Santa Fé and Pecos, NEW MEXICO; "Canadian to Upper Sonoran."

*A. neomexicana* Cockerell, 1906*d*, pp. 419, 443. Florissant, Teller County, and (?) Wet Mountain Valley, Custer County, COLORADO; VI, VIII; at *Polemonium* and *Iris missouriensis*.

*A. neomexicana* Stevens, 1919, p. 210. Marmarth, NORTH DAKOTA.

See *scutellaris* Swenk.

**bomboides willingi** Cockerell, 1911, p. 34. ♂. Prince Albert, Saskatchewan, CANADA; VI; (Willing).

**californica** Cresson, 1869, p. 290. ♂. CALIFORNIA; (Osten Sacken).

*Podalirius californicus* Cockerell, 1898*f*, p. 314. Las Cruces, NEW MEXICO; at *Cevallia sinuata*.

(?) *A. (Amegilla) californica* Viereck, 1906, p. 237. Oak Creek Canyon, ARIZONA; VII, VIII; (F. H. Snow). See *texana* and Cockerell, 1906, pp. 65, 66, and 99.

Cockerell, 1916*b*, p. 55. Coronado Islands, MEXICO; VIII; at *Hazardia berberidis*.

See *texana*.

*canadensis*. See *bomboides canadensis*.

**capistrata** Cresson, 1878*a*, p. 187. ♂. Bosque County (?), TEXAS; (Belfrage).

Fox, 1893, p. 118. El Taste, Lower California, MEXICO; 3400 ft.; (Eisen).

*carbonaria*. See *infernalis*.

*cardui*. See *smithii*.

**catalinae** Cockerell, 1910, p. 297. ♀. Catalina Island, CALIFORNIA; VIII; (W. P. Cockerell).

**centriformis** Cresson, 1879, p. 212. ♂. NEVADA; (Morrison).

**centriformis vierecki** Cockerell, 1906, pp. 69, 311. ♂. Alamogordo, NEW MEXICO; V; (Viereck). "Middle Sonoran."

*cineraria*. See *Emphoropsis*.

**citreostrigata** Dours, 1869, p. 95. ♀. North America.

*cleomis*. See *marginata*.

*corvicolor*. See *infernalis*.

**costaricensis** Friese, 1916, p. 332. ♂, ♀. San Carlos, COSTA RICA; (Burgdorf).

**crotchii**, Cresson, 1878*a*, p. 192. ♂. CALIFORNIA; (Crotch).

*Podalirius crotchii* Cockerell, 1898*b*, p. 54. Pasco, WASHINGTON; V; (Kincaid).

Fowler, 1902, p. 320. Berkeley, CALIFORNIA; V.

Cockerell, 1904*e* (1915), p. 161. Banning, CALIFORNIA; (Davidson).

Cockerell, 1906*b*, p. 277. Yakima and N. Yakima, WASHINGTON; V; (Jenne).

Cockerell, 1916, p. 283. Claremont, CALIFORNIA; (Baker).

**curta** Provancher, 1895, p. 173. ♀. Los Angeles, CALIFORNIA; (Coquillett).

Fowler, 1902, p. 319. Fresno, Tulare, and Anaheim, CALIFORNIA; V.

Cockerell, 1905a, p. 272. Alamosa, COLORADO; VIII; at *Cleome*; (Johnson).

A. (*Micranthophora curta* Cockerell, 1906, pp. 66, 70, 100, 311. Antonito, COLORADO; VIII; (Ball). Santa Fé, Las Vegas, Embudo, and Mesilla Valley, NEW MEXICO. "Transition to Middle Sonoran."

Cockerell, 1907, p. 396. NEW MEXICO: Alamogordo, V, and Highrolls, VI, (Viereck); Las Cruces, V and VIII, at *Dithyrea wislizeni* and *Wedelia incarnata*; and Mesilla Park, VIII and IX, at plum flowers and *Pectis papposa*. San Pedro, CALIFORNIA; VII. Juarez, MEXICO; V.

Cockerell, 1914a, p. 424. El Paso, TEXAS; XI; at yellow Composite; (Timberlake).

Bray, 1917, p. 93. Claremont, CALIFORNIA; IV; at *Lotus glaber*.

See *peritomæ* and *petrophila*.

*domingensis* Lepeletier "is given by Smith as from S. Domingo, but according to Dours it is really from Senegal" (Cockerell, 1906, p. 105).

*doursii*. See *tarsata*.

**edwardsii** Cresson, 1878a, p. 190. ♀, ♂. CALIFORNIA\* and NEVADA; (H. Edwards).

Fowler, 1902, p. 320. Berkeley and Ocean View, CALIFORNIA; V-X.

Cockerell, 1906b, p. 277. Yakima and N. Yakima, WASHINGTON; IV, V; (Jenne).

Bray, 1917, p. 94. Claremont, CALIFORNIA; IV; at *Phacelia tanacetifolia*.

*elefas*. See *Emphoropsis*.

*euops*. See *simillima*.

**exigua** Cresson, 1879, p. 211. ♀. NEVADA; (Morrison).

*Podalirius exigua* Cockerell, 1897c, p. 29. Mesilla Valley, NEW MEXICO; 3800 ft.

Fowler, 1902, p. 319. Alhambra, VI, Fresno, X, CALIFORNIA.

A. (*Micranthophora exigua* Cockerell, 1906, p. 100.

**fedorica** Cockerell, 1906, pp. 69, 70. ♂. Fedor, TEXAS; IV; (Birkman).

*flavifrons*. See *Centris*.

**flavocincta** Huard, 1897, p. 25. N. n. for *nigrocincta* Provancher, 1895, p. 172. ♂. Los Angeles, CALIFORNIA; (Coquillett).

A. *maculifrons* Cockerell, 1905, p. 15. See 1906, p. 71.

A. *nigrocincta* Fowler, 1902, p. 319. Los Angeles, CALIFORNIA.

A. (*Micranthophora flavocincta* Cockerell, 1906, p. 100.

See *anstrutheri*.

**flexipes** Cresson, 1879, p. 211. ♀\*, ♂. NEVADA; (Morrison).

Cockerell, 1905, p. 13. Strawberry Valley, southern CALIFORNIA; (Davidson).

A. (*Micranthophora flexipes* Cockerell, 1906, pp. 66, 71, 100. Bear Valley, southern CALIFORNIA. 1906d, p. 443: Florissant, COLORADO; VII.

*floridana*. See *Emphoropsis*.

**footei** Crawford, 1914, p. 131. ♂, ♀. DOMINICA; (Foote).

**forbesi** Cockerell, 1907*a*, p. 354. ♀. Maricopa, ARIZONA; (Forbes).  
1907*d*, p. 539; Prof. R. H. Forbes found a ♂ *Bombomelecta arizonica*  
Cockerell in a cell of this species at Tuscon, ARIZONA; IV.

**frontata** Say, 1837, p. 409. ♂. LOUISIANA; (Barabino).

*fulvifrons*. See *Entechnia*.

**fumipennis** Swenk, 1909, p. 391. ♀. Cass County, NEBRASKA.

*furcata*. See *Clisodon terminalis*.

**fuscipennis** Smith, 1854, p. 338. ♀. North America; (Smith).

*globosa*. See *Exomalopsis*.

**godofredi** Sichel MS., Dours, 1869, p. 119. ♀, ♂. ST. VINCENT.

**gohrmanæ** Cockerell, 1903, p. 454. ♂. Las Vegas, NEW MEXICO; V;  
at *Ribes longiflorum* but tongue too short to suck; (Anna Gohr-  
man).

Cockerell, 1905, p. 30, and 1905*a*, p. 81. Los Angeles, CALIFORNIA;  
(Davidson).

Cockerell, 1905*d*, p. 60. Denver, Montrose, and Grand Junction,  
COLORADO; V.

*hæmorrhoidalis*. See *Centris*.

**hilaris** Smith, 1879, p. 123. ♀. SANTO DOMINGO.

**histrion** Dours, 1869, p. 190. ♂. MEXICO.

*holopyrrha*. See *Xenoglossa fulva*.

**ignava** Cresson, 1879, p. 210. ♀, ♂. NEVADA; (Morrison).

See *pacifica* Cresson. Fowler, 1902, p. 320.

Viereck, *et al.*, 1906, p. 314. Corvallis, OREGON; V, VI; (Cordley).  
CALIFORNIA.

Cockerell, 1906, p. 99. ? ♀ of *pacifica*.

Cockerell, 1906*b*, p. 277. N. Yakima, WASHINGTON; V; (Jenne).

Cockerell, 1914*d*, p. 365. Portola, CALIFORNIA; III; (Newcomer).

**infernalis** Dalla Torre, 1896, p. 273. (*Podalirius*) N. n. for *A. carbonaria*  
Cresson, 1879, p. 210. ♀. NEVADA; (Morrison).

*A. corvicolour* Cockerell, 1905*a*, p. 81. ♀. Laurel Canyon, CALIFORNIA;  
V; (Davidson). Cockerell, 1906, p. 65, gives the synonymy.

Cockerell, 1916, p. 283. Claremont, CALIFORNIA; (Baker).

See *Emphoropsis tristissima*.

*insularis*. See *solitaria*.

*interspersa*. See *peritomæ interspersa*.

**krugii** Cresson, 1878*a*, p. 188. ♀, ♂. PORTO RICO; (Krug).

**lesquerellæ** Cockerell, 1897, p. 399. (*Podalirius*) ♂. Little Mountain  
and College Farm, Mesilla Valley, NEW MEXICO; IV; at *Lesquerella*  
*fendleri* and *Lycium*; (Jessie Casad).

*Anthophora lesquerella* Cockerell, 1896, p. 197. ♂, ♀. Messilla Valley, New Mexico; IV; at *Lycium* and cherry.

Cockerell, 1899*d*, p. 256. Dripping Springs, Organ Mountains, New Mexico; IV; at *Ungnadia speciosa*.

Cockerell, 1906, p. 311. "Middle Sonoran."

Cockerell, 1911*a*, p. 238. Albuquerque, NEW MEXICO; at *Astragalus*; (J. R. Watson).

**luteodimidiata** Dours, 1869, p. 192. ♀. MEXICO.

**maculifrons** Cresson, 1879, p. 210. ♀\*, ♂. NEVADA; (Morrison).

Fox, 1893, pp. 21, 118. San José de Cabo, Lower California, MEXICO; VII, X; (Eisen).

Townsend, 1896, p. 111. Las Cruces, NEW MEXICO.

Cockerell, 1898*a*, p. 69. Mesilla Valley, Santa Fé, and Embudo, NEW MEXICO. 1898*f*, pp. 313 and 314; at *Biglovia* [*Chrysothamnus*] and *Heli-anthus annuus*.

Fowler, 1902, p. 319. Alhambra and Redlands, CALIFORNIA; VI.

Cockerell, 1901*a*, p. 131. Las Vegas, NEW MEXICO; VII, VIII; at *Sphaeralcea lobata*, *Lycium vulgare*, *Grindelia squarrosa*, and *Verbena macdougali*; (Porter, Mize).

Cockerell, 1901*c*, p. 42. Mesilla Park, NEW MEXICO; IV; at *Prunus*.

*A. (Micranthophora) maculifrons* Cockerell, 1906, p. 100.

See *flavocincta* and *petrophila*.

**marginata** Smith, 1854, p. 339. ♀. MEXICO.

Dours, 1869, p. 150. ♂ (?); see Cockerell, 1906, p. 65.

Cresson, 1869, p. 290. Orizaba, MEXICO; (Sumichrast).

*Podalirius cleomis* Cockerell, 1896, p. 193. ♂. Santa Fé, NEW MEXICO; VIII; at *Cleome serrulata*. At 7000 ft.

*A. cleomis* Cockerell, 1898*a*, p. 68.

*A. (Amegilla) cleomis* Cockerell, 1901*a*, p. 131. Las Vegas, NEW MEXICO; VII, VIII; at *Sphaeralcea lobata*, *Sidalcea neomexicana*, *Lycium vulgare*, *Verbena macdougali*, *Salvia lanceolata*, and *Cleome serrulata*. Rociada, New Mexico.

Cockerell, 1901*c*, p. 39. Las Cruces, NEW MEXICO; VIII; at *Wedelia incarnata*; (Townsend).

*A. cleomis* Cockerell, 1904, p. 8. Pecos, NEW MEXICO; VIII.

Cockerell, 1905*e*, p. 331. Notes on type.

*A. (Amegilla) cleomis* Viereck, 1906, p. 237. Oak Creek Canyon, ARIZONA; VII, VIII; (Snow).

Cockerell, 1906, pp. 65, 99, 311. At *Peritoma*. "Transition to Upper Sonoran."

Cockerell, 1912, p. 106. Guatemala City, GUATEMALA; XII; (Wheeler).

Cockerell, 1914*a*, p. 281. Rito de los Frijoles, MEXICO; VIII.

*melanopyrrha*. See *Emphoropsis*.

**melfordi** Cockerell, 1908, p. 323. Fossil in Miocene Shales, Station 13 B, Florissant, Colorado; (Smith). 1908*d*, p. 575. Figure.

**mexicana** Dours, 1869, p. 133. ♀, ♂. MEXICO.

*miserabilis*. See *Emphoropsis*.

*modesta* Smith is from St. Vincent, Cape Verde Is., not W. I. as in Ashmead, 1900.

**montana** Cresson, 1869, p. 290. ♀. COLORADO; (J. Ridings).

Townsend, 1896, p. 111. La Vega de San José, NEW MEXICO; VIII.

*Podalirius montanus* Cockerell, 1897c, p. 22. Mesilla Valley, NEW MEXICO.

Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

A. (*Amegilla*) *montana* Cockerell, 1901a, p. 131. Las Vegas, NEW MEXICO; VII; at *Lycium vulgare* and *Cleome serrulata*; (Porter, Winters, Garlick).

Cockerell, 1904, p. 8. Pecos, NEW MEXICO; at *Salvia lanceolata*.

Cockerell, 1905d, p. 60. ♂. Denver (VII), Fort Collins, Livermore, and near Horsetooth Mountain, COLORADO; at larkspur.

Cockerell, 1906, p. 311. Organ Mountains, NEW MEXICO. "Upper Sonoran."

*morrisoni*. See *Emphoropsis*.

*mucida*. See *Emphoropsis*.

**nebracensis** Swenk, 1909, p. 390. ♀. Warbonnet Canyon, Sioux County, NEBRASKA; VII; at *Monarda fistulosa*; (Carriker).

*neomexicana*. See *bomboides neomexicana*.

*nigrocincta*. See *flavocincta*.

*nubiterræ*. See *Clisodon terminalis*.

*nudata*. See *bidentata*.

**occidentalis** Cresson, 1869, p. 292. ♀\*, ♂. COLORADO; (Ridings).

Putnam, 1876, p. 195. Spring Lake Villa, Utah County, UTAH.

Cresson, 1876, p. 210. Boulder, COLORADO; (Putnam).

Cresson, 1879, p. 227. TEXAS (? misprint for Utah).

Townsend, 1896, p. 111. La Vega de San José, NEW MEXICO; VIII.

*Podalirius occidentalis* Cockerell, 1897c, p. 20. Santa Fé, NEW MEXICO; 7000 ft.; (1898f, p. 79) sleeping in closed flowers of *Argemone platyceras*.

*Podalirius occidentalis* Cockerell, 1899, p. 156. Mescalero Indian Agency, Tularosa Creek, NEW MEXICO; VII; (C. M. Barber). *Melecta miranda* Fox, probably in quiline.

Tucker, 1909, p. 278. Colorado Springs, COLORADO; VIII.

Cockerell, 1900a, p. 408. Las Vegas, NEW MEXICO; VII; at *Cnicus ochrocentrus*, *Cleome serrulata*, and *Convolvulus sepium*; (W. Porter).

Johnson, 1903, p. 290. Nests; *Agenia architecta* builds in them.

Cockerell, 1906, pp. 68, 70, 99, 311. Maybell (VIII) and Parker, COLORADO; (S. A. Johnson). Pecos, NEW MEXICO. "Transition to Upper Sonoran." At *Carduus* and *Peritoma*.

Wellman, 1911, p. 17. Gove County, KANSAS; 2813 ft.; V; nest contained *Hornia gigantea*. See also Entomological News, XXII, p. 132; XXIII, p. 259; and XXV, p. 1.

Stevens, 1919, p. 210. Williston, NORTH DAKOTA.

**pacifica** Cresson, 1878a, p. 190. ♂. CALIFORNIA; (H. Edwards).

Fowler, 1902, p. 320. Berkeley, CALIFORNIA; I-V. Says *ignava* Cresson is a synonym.

Cockerell, 1906, pp. 68, 99. NEVADA.

Bray, 1917, p. 93. Mountains near Claremont, CALIFORNIA; IV; at *Lotus glaber*.

**peritomæ** Cockerell, 1905a, p. 272. (*A. curta peritomæ*) ♂. Alamosa, COLORADO; VIII; at *Cleome* (= *Peritoma*); (S. A. Johnson). Santa Fe, VIII, at *Peritoma serrulataum*, Mesilla, IX, at *Isocoma wrightii*, and Las Cruces, VIII, at *Solidago canadensis*, NEW MEXICO.

*A. (Micranthophora) curta peritomæ* Cockerell, 1906, pp. 100, 311. "Transition to Middle Sonoran."

Cockerell, 1907, p. 397. ♀. Las Cruces, IX, at *Helianthus annuus*, Pecos, VII, San Ignacio, IX, Embudo, IX, at *Chrysothamnus*, Rociada, VIII, and Santa Fé, VIII, at *Chrysopsis*, NEW MEXICO.

**peritomæ interspersa** Cockerell, 1907, p. 397. ♂. Alamosa\*, COLORADO; VIII; at *Cleome* (= *Peritoma*); (S. A. Johnson); see Cockerell, 1905a, p. 272, *A. curta*. Rociada, VIII, at *Grindelia nuda*, Santa Fé, VII, and Las Cruces, VIII, at *Solidago canadensis*, NEW MEXICO.

**peritomæ tinctula** Cockerell, 1907, p. 397. ♀\*: Rociada, NEW MEXICO; VIII; at *Grindelia nuda*. ♂: Santa Fé, NEW MEXICO; VIII; at *Pertitoma serrulatum*. Las Vegas, NEW MEXICO; VII and VIII; at *Verbesina exauriculata* and *Grindelia nuda*.

**pernigra** Cresson, 1879, p. 210. ♀. NEVADA; (Morrison).

**petrophila** Cockerell, 1905, pp. 13, 15. (*A. curta petrophila*) ♀. Rock Creek, CALIFORNIA; (Davidson).

*A. (Micranthophora) petrophila* Cockerell, 1906, p. 100.

Cockerell, 1907, p. 395. ♀. Los Angeles, CALIFORNIA; (Davidson). ♂. Alamogordo, NEW MEXICO; V.

**phenax** Cockerell, 1898e, p. 146. (*Podalirius*) College Farm, Mesilla Park, NEW MEXICO; IV; at plum.

*Podalirius phenax* Cockerell, 1898a, p. 69. ♂, ♀. Mesilla Valley, NEW MEXICO; IV; (C. M. Barber).

*A. (Micranthophora) phenax* Cockerell, 1906, pp. 100, 311. "Middle Sonoran."

**pluto** Dours, 1869, p. 95. ♀. MEXICO.

*Habropoda pluto* Patton, 1879, p. 479.

**porterae** Cockerell, 1900a, p. 407. ♂, ♀. Romeroville, NEW MEXICO; IV; at wild gooseberry; (W. Porter). Mojave Desert, CALIFORNIA; (Ehrhorn).

Cockerell, 1905*d*, p. 60. Golden and Montrose, COLORADO; V; (S. A. Johnson).

Cockerell, 1906, pp. 68, 70, 99, 311. Fort Collins, COLORADO; VI; at "yellow sweet clover"; (S. A. Johnson). Las Vegas and Engle, NEW MEXICO; at *Ribes*. "Upper Sonoran."

Cockerell, 1911*a*, p. 238. Albuquerque, NEW MEXICO; IV; at cherry blossoms; (J. R. Watson).

**porterae semiflava** Cockerell, 1905*f*, p. 183. ♂. Fort Collins, COLORADO; V; (Johnson).

**porterae watsoni** Cockerell, 1911*a*, p. 238. ♂. Albuquerque, NEW MEXICO; at *Phacelia corrugata*; (J. R. Watson).

**pulsella** Dours, 1869, p. 190. ♀. MEXICO.

**pygmaea** Dours, 1869, p. 151. ♂. MEXICO.

**pyralitarsis** Dours, 1869, p. 160. ♂. NEW YORK.

**quinquefasciata** Provancher, 1895, p. 172. ♂. Los Angeles, CALIFORNIA; (Coquillett).

Fowler, 1902, p. 319.

**rufozonata** Dours, 1869, pp. 49 and 112. ♂. MEXICO.

**scutellaris** Swenk, 1909, p. 391. ♀. Sioux County,\* NEBRASKA; (L. Brunner). Warbonnet Canyon, Sioux County, NEBRASKA; VI; (J. C. Crawford). The type is the specimen referred to by Cockerell, 1900*a*, p. 409, as *bombooides* var.

*semiflava*. See *porterae semiflava*.

**simillima** Cresson, 1878*a*, p. 189. ♂. COLORADO; (Morrison).

*A. euops* Cockerell, 1903, p. 451. ♂. Placita, NEW MEXICO; V; at *Ribes longiflorum* and wild plum.

*A. euops* Cockerell, 1904, p. 234. Colorado Springs, at *Ribes longiflorum*, Manitou, IV, at *Ribes leptanthum*, and Colorado City, V, at *Thermopsis arenosa* and *Ribes longiflorum*, COLORADO.

Cockerell, 1904*a*, p. 24. Prospect Lake, Colorado Springs, COLORADO; V; at *Aragallus lamberti*.

Cockerell, 1905*d*, p. 60. Palisade, Fort Collins, and Denver, COLORADO; V.

Cockerell, 1906, pp. 68, 69, 99. Boulder, COLORADO; IV; at *Ribes cereum*, *Aragallus*, and *Viola nuttallii*. Nevada.

Cockerell, 1906*d*, p. 443. Florissant, Teller County, COLORADO; VI, VII; at *Pentstemon*.

Cockerell, 1906*b*, p. 277. N. Yakima, WASHINGTON; V; (Jenne).

Bray, 1917, p. 94. Claremont, CALIFORNIA; IV; at *Lotus glaber*.

Cockerell, 1919*d*, p. 358. Minnehaha, Pikes Peak, COLORADO; (Frances Long).

**smithii** Cresson, 1869, p. 289. ♂\*, ♀. COLORADO\*, (J. Ridings), and "Dacota Territory," (H. Ulke).



Cresson, 1872, p. 282. Bosque County (?), TEXAS; (Belfrage).

Cresson, 1879, p. 227. NEW MEXICO.

*Anthophora walshii*. Townsend, 1896, p. 111. La Vega San José, NEW MEXICO; VIII.

*Podalirius cardui* Cockerell, 1897a, p. 155. ♂. About 6000 ft., Lone Mountain, near Silver City, NEW MEXICO; VII; at *Cnicus*.

*Podalirius walshii* Cockerell, 1897c, p. 22.

*Anthophora cardui* Cockerell, 1898a, p. 98.

*Podalirius cardui* Cockerell, 1899, p. 156. Mescalero Indian Agency, Tularosa Creek, NEW MEXICO; VII; (C. M. Barber).

*Podalirius smithii* Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

*Anthophora (Amegilla) cardui* Cockerell, 1901a, p. 131. Las Vegas, NEW MEXICO; VII, VIII; at *Cleome serrulata*, *Petalostemon oligophyllus*, and *Verbena macdougalii*; (Porter).

*A. smithii* and *A. s. cardui* Cockerell, 1906, pp. 70, 99, 311. Top of Las Vegas Range, Beulah, and Las Vegas Hot Springs, NEW MEXICO. Denver, COLORADO; VII; (S. A. Johnson). "Hudsonian to Upper Sonoran." At *Carduus*.

Tucker, 1909, p. 278. Colorado Springs, COLORADO; VIII.

Cockerell, 1915, p. 268. Ward, COLORADO; 9200 ft.; VIII; at *Grindelia subalpina*.

Cockerell, 1919b, p. 293. Longs Peak Inn, COLORADO. Differences between *smithii* and the form *cardui*.

Cockerell, 1919c, p. 27, 272. Boulder, COLORADO; X; at *Salvia pitcheri*. Gold Hill, COLORADO; 8600 ft.; VII.

Cockerell, 1919d, p. 358. Minnehaha, Pikes Peak, COLORADO; (Frances Long).

**sodalis** Cresson, 1879, p. 212. ♂. NEVADA; (Morrison).

Cockerell, 1906b, p. 277. N. Yakima, WASHINGTON; V; (Jenne).

**solitaria** Ritsema, 1880, p. xcvi. New name for *insularis* Smith. ♀. Vancouver Island, BRITISH COLUMBIA.

Fowler, 1902, p. 320. Santa Catalina Island and San Bernardino, CALIFORNIA; VI.

(Not *solitaria* "Cockerell" as in Viereck *et al.*, 1905, p. 314. See Cockerell, 1906, p. 67.)

*sponsa*. See *abrupta*.

**squamulosa** Sichel MS., Dours, 1869, p. 78. ♀, ♂. MEXICO.

**stanfordiana** Cockerell, 1904c, p. 32. ♀, ♂. Stanford University, CALIFORNIA; V; (W. G. Johnson). Nests.

Viereck *et al.*, 1905, p. 314. Corvallis, OREGON; III, V, VI; (Cordley).

Kellogg, 1908, p. 516. Description of nest.

Bray, 1917, p. 93. Claremont, CALIFORNIA; V; at *Amsinckia intermedia*.

**subglobulosa** Provancher, 1888, p. 297. ♂. Cap Rouge, CANADA.

*subtarsata*. See *tarsata subtarsata*.

**tarsata** Sichel MS., Dours, 1869, p. 147. ♀, ♂. MEXICO.

*Podalirius doursii* Dalla Torre, 1896, p. 265.

**tarsata subtarsata** Cockerell, 1904e, p. 88. ♀, ♂. Los Angeles, CALIFORNIA; (Davidson).

Cockerell, 1905, p. 335.

*taurea*. See *Entechnia*.

*terminalis*. See *Clisodon*.

**texana** Cresson, 1872, p. 282. ♀. Bosque County (?); TEXAS; (Bel-frage).

*Podalirius californicus* Cockerell, 1897b, p. 154. ♂. DEMING, NEW MEXICO; VII; at *Cæsalpinia falcaria*. 1897c, p. 29: Mesilla Valley, NEW MEXICO; 3800 ft.; VIII; at *Cevallia*.

Cockerell, 1905c, p. 335. ♂. Fedor, TEXAS; VI; (Birkman. See Birkman, 1899, p. 245). ARIZONA; (SNOW).

Cockerell, 1906, pp. 65, 66, 100, 311. At *Hoffmannseggia*. "Middle Sonoran."

Cockerell, 1919, p. 183. Federal District, MEXICO; (Inda).

*trinctula*. See *peritomæ tinctula*.

**tricolor** Fabricius, 1775, p. 377. (*Andrena*) America.

*Megilla tricolor* Fabricius, 1804, p. 329.

Lepelletier, 1825, p. 797.

Smith, 1854, p. 343. South America—doubtful.

Cresson, 1869, p. 292. "Guadaloupe." HAITI; (Uhler).

Gribodo, 1893, p. 391. ST. THOMAS.

Ashmead, 1900, p. 300. PORTO RICO. CENTRAL AMERICA.

**unistrigata** Dours, 1869, p. 192. ♀. MEXICO.

**urbana** Cresson, 1878a, p. 188. ♀\*, ♂. UTAH\*. COLORADO. CALIFORNIA.

*Podalirius alamosanus* Cockerell, 1896, p. 195. ♀. Canyada Alamosa, NEW MEXICO; VI; (Townsend).

Cockerell, 1897, p. 400. Las Cruces, NEW MEXICO; VII; at *Solanum*.

*P. u. alamosana* Cockerell, 1898a, pp. 69, 73. Albuquerque and western base of Organ Mountains, NEW MEXICO; IX; at *Cleome serrulata*. See also 1898f, p. 311.

*A. (Amegilla) u. alamosana* Cockerell, 1901a, p. 131. Las Vegas, NEW MEXICO; VI, VII; at alfalfa and *Lycium vulgare*; (Porter).

Cockerell, 1901, p. 297. San Pedro, CALIFORNIA; VII.

Fowler, 1902, p. 320. Fresno, Tulare, Santa Ana, and Berkeley, CALIFORNIA; V-X.

*A. u. alamosana* Cockerell, 1904, p. 234. Blue River, ARIZONA; (Davidson).

Cockerell, 1905, p. 31. Bear Valley, Tehachapi, Redondo (Davidson) and Los Angeles, CALIFORNIA. The second *A. urbana* on p. 31 should be *Synhalonia* [*Tetralonia*] *acerba* (Cresson).

Viereck, 1906, p. 237. Oak Creek Canyon, ARIZONA; VII, VIII; (Snow).  
*A. u. alamosana* Cockerell, 1906, p. 100. At *Lycium*.  
 Cockerell, 1906, pp. 68, 70, 100, 311. Fort Collins, COLORADO; VI; on  
 yellow sweet clover; (S. A. Johnson). NEVADA. "Upper Sonoran."  
 Cockerell, 1906b, p. 277. N. Yakima, WASHINGTON; VI; (Jenne).  
 Cockerell, 1916, p. 283. Claremont, CALIFORNIA; (Baker).  
 Cockerell, 1916b, p. 55. Coronado Islands, MEXICO; VIII.  
 Bray, 1917, p. 93. Claremont, CALIFORNIA; IV; at cactus and poppy.  
 Cockerell, 1920, p. 113. Santa Fé, NEW MEXICO.  
 See *Tetralonia acerba*.

**ursina** Cresson, 1869, p. 291. ♂. WEST VIRGINIA; (Ridings).

Cresson, 1879, p. 227. NORTH CAROLINA.  
 Robertson, 1891a, pp. 580, 589. At *Mertensia virginica* and *Collinsia verna*.  
 Robertson, 1896, pp. 160, 162. Carlinville, ILLINOIS; at *Æsculus glabra*  
 and *Astragalus mexicanus*.  
*Podalirius ursinus* Cockerell, 1897c, p. 22. Organ Mountains, and Vega.  
 San José, NEW MEXICO.  
 Robertson, 1898a, p. 242. At *Lonicera sullivanii*.  
 Cockerell, 1914a, p. 281. Garrison, NEW YORK; (Cattell).

**usticauda** Cockerell, 1912b, p. 22. ♀. Antigua and Amatitlan, GUATE-  
 MALA; II; (W. P. Cockerell). Subgenus *Micranthophora*.

*vallorum*. See *Anthophoroides*.

*versicolor*. See *Centris*.

*vierecki*. See *centrifformis vierecki*.

**volucellæformis** Dours, 1869, p. 189. ♀. MEXICO.

**walshii** Cresson, 1869, p. 290. ♂\*, ♀. ILLINOIS; (Walsh).

Robertson, 1898a, p. 230. (?) Carlinville, ILLINOIS; at *Lespedeza reticulata*  
 and, 1899, p. 36, at *Cassia chamaecrista*.

*Amegilla walshii* Robertson, 1905, p. 372.

Cockerell, 1906, pp. 65, 66, 70, 100. Fedor, TEXAS; (Birkman). At  
*Cassia*.

Gränicher, 1907, p. 26. ♀. WISCONSIN; at *Allium cernuum*.

Cockerell, 1909, p. 26. Malcolm, NEBRASKA; IX; at *Salvia*.

Gränicher, 1911, p. 248. Mouth of Yellow River, Burnett County, WIS-  
 CONSIN; VII or VIII; at *Rudbeckia hirta*.

See *smithii*.

**washingtoni** Cockerell, Viereck *et al.*, 1905, p. 313. ♀. Pasco, WASH-  
 INGTON; V; (Kincaid).

Cockerell, 1906b, p. 277. N. Yakima, WASHINGTON; V; (Jenne).

Cockerell, 1916, p. 283. Claremont, CALIFORNIA; (Baker).

*watsonia*. See *porterae watsoni*.

*willingi*. See *bomboides willingi*.

**ANTHOPHORIDES** Cockerell, T. D. A. and W. P., 1901, p. 48

(Type: *Podalirius vallorum* Cockerell)

**vallorum** Cockerell, 1896, p. 195. (*Podalirius*) ♂, ♀. Mesilla and Las Cruces, NEW MEXICO; VI, VIII; at *Solanum elaeagnifolium* and *Ipomæa*.

*Podalirius vallorum* Cockerell, 1898f, p. 314. Mesilla Park, NEW MEXICO; at *Martynia* and *Chilopsis*.

*Anthophora vallorum* Cockerell, 1900b, p. 218. Juarez, MEXICO; X; at *Ipomæa mexicana*.

Cockerell, T. D. A. and W. P., 1901, p. 48.

Cockerell, 1906, p. 100. At *Solanum* and *Ipomæa*.

*Anthophorula* Cockerell

See *Exomalopsis*.

**CLISODON** Patton, 1879, p. 479

(Type: *Anthophora terminalis* Cresson)

*Podalirius (Clisodon)* Dalla Torre, 1896, p. 252.  
*neofurcata*. See *terminalis neofurcata*.

**syringæ** Cockerell, 1898b, p. 54. (*Podalirius*). ♂. Olympia, WASHINGTON; VII; at *Syringa*; (Kincaid).

Cockerell, 1906, p. 100.

**terminalis** Cresson, 1869, p. 292. (*Anthophora*) ♀\*, ♂. COLORADO.\* DELAWARE. CONNECTICUT. MASSACHUSETTS. CANADA.

*Anthophora terminalis* Cresson, 1876, p. 210. Empire, COLORADO. Spring Lake, UTAH. (Putnam).

Patton, 1879, p. 479.

Evans, 1896, p. 13. Sudbury, ONTARIO.

Cockerell, 1897c, p. 19. Monument Rock, Santa Fé Canyon, NEW MEXICO; 8000 ft.

Cockerell, 1899, p. 156. Mescalero Indian Agency, Tularosa Creek, NEW MEXICO; VII; (C. M. Barber).

Cockerell, 1901a, p. 131. Beulah, Harvey's Ranch, and Sapello Canyon, NEW MEXICO; VIII; at *Polemonium*; (Porter).

Viereck, 1902, p. 46. Crew's Mesa above Beulah, NEW MEXICO; VI.

*Anthophora nubiterræ* Viereck, 1902, p. 46. ♂. Beulah, NEW MEXICO; (W. P. Cockerell).

Cockerell, 1903a, p. 891. Truchas Peaks, NEW MEXICO; above timber line; at thistle.

Lovell and Cockerell, 1906, p. 112. Waldoboro, MAINE; at *Pontederia cordata*.

Cockerell, 1906, pp. 72, 100, 311. Steamboat Springs, COLORADO; VIII; (S. A. Johnson). "Arctic-Alpine to Upper Sonoran." Pecos, and Clouderoft, NEW MEXICO.

Cockerell, 1906d, p. 443. Florissant, Teller County, COLORADO; VII; at *Pentstemon*, *Mertensia*, and *Linum lewisii*.

Viereck, 1906, p. 238. Oak Creek Canyon, ARIZONA; VII; (F. H. Snow).

Grænicher, 1907, pp. 24 and 26. ♀. WISCONSIN; at *Allium canadense* and *cernuum*.

Tucker, 1909, p. 278. Tabernash, COLORADO; VIII.

*Anthophora terminalis* Smith, 1910, p. 694. Riverton, NEW JERSEY; IX.

Grænicher, 1911, p. 248. Solon Springs and Gordon in Douglas County, the mouth of the Nemakagon River, Swiss, the mouth of the Yellow River, Kettle River Rapids, and Randall in Burnett County, Maiden Rock in Pierce County, and Fountain City in Buffalo County, WISCONSIN; VII, VIII.

Crawford, 1913, p. 270. Nerepis, NEW BRUNSWICK; VIII.

Cockerell, 1915, p. 269. Bikerdike Ranch, near Allen's Park, COLORADO; VIII; at *Gentiana affinis*.

*Anthophora (Clisodon) terminalis* Viereck, 1916, p. 737. Mt. Carmel, CONNECTICUT; VIII.

Sladen, 1918, p. 302. Ottawa, CANADA; at alfalfa; suggests that it is *Anthophora furcata* of Europe.

Cockerell, 1916c, p. 6. Floodwood, Schoolcraft County, and Whitefish Point, Chippewa County, MICHIGAN; VII; (Gaige, Andrews).

*Anthophora (Clisodon) terminalis* Washburn, 1919, p. 231. Itasca Park, MINNESOTA; VIII; at *Aster*.

Sladen, 1919, p. 125. Hull, QUEBEC. Cochrane, ONTARIO. Edmonton, ALBERTA. Agassiz, Shawnigan Lake and Victoria, Vancouver Island, BRITISH COLUMBIA. At *Stachys palustris*. Nests in wood. Same as European *Anthophora furcata*.

Cockerell, 1919b, p. 293. Longs Peak Inn and Twin Sisters, COLORADO.

**terminalis neofurcata** Sladen, 1919, p. 125. ♀. Agassiz, Shawnigan Lake and Victoria, Vancouver Island, BRITISH COLUMBIA.

**DASIAPIS** Cockerell, 1903, p. 450

(Type *Dasiapis ochracea* Cockerell)

**ochracea** Cockerell, 1903, p. 450. ♂. Las Cruces\* and Santa Fé, NEW MEXICO; VIII; at *Sphaeralcea fendleri lobata*. Has been confused with *Diadasia enavata*.

Cockerell, 1906, pp. 74, 100, 310. Soledad Canyon, Organ Mountains, NEW MEXICO. Oak Creek Canyon, ARIZONA; (Snow).

Cockerell, 1906b, p. 281. N. Yakima, WASHINGTON; VI; (Jenne).

**olivacea** Cresson, 1878a, p. 216. (*Melissodes*) ♀\*, ♂. MEXICO; (Sumichrast).

*Eucera olivacea* Dalla Torre, 1896, p. 242.

Cockerell, 1905, p. 15. CALIFORNIA.

Cockerell, 1906a, p. 74. Brownsville, TEXAS; VI; (Snow).

*Melissodes olivacea* Smith, 1910, p. 693. Camden County, New Jersey; (Fox). This record is probably wrong.

**tropicalis** Cockerell, 1918*b*, p. 27. ♀. Pueblo Viejo, Vera Cruz, MEXICO; XII; (Bishopp).

**DIADASIA** Patton, 1879, p. 475

(Type: *Melissodes enavata* Cresson)

Dalla Torre, 1896, p. 222, made it a subgenus of *Euclera*. Ashmead, 1899, p. 64, made it a synonym of *Ancyloscelis* Latreille, 1825, p. 363; in this connection, see Cockerell, 1917*b*, p. 304. Cockerell, 1905*b*, pp. 741–745, reviewed the genus.

**afflicta** Cresson, 1878*a*, p. 217. (*Melissodes*) ♀\*, ♂. TEXAS. (Belfrage, Heiligbrodt).

*Diadasia tricincta* Provancher, 1896, p. 28. ♀. Los Angeles, CALIFORNIA, (Coquillett).

*Melissodes afflicta* Birkman, 1899, p. 245. Fedor, Lee County, TEXAS. Cockerell, 1904*a*, p. 22.

Cockerell, 1914*b*, p. 410. Falfurrias, TEXAS; V; at *Helianthus*; (Morgan).

**afflicta perafflicta** Cockerell, 1905*b*, p. 744. ♂ (♀ like *afflicta*). Clark (Alt. 1962 ft.), Hamilton (3350 ft.), and Wallace (3000 ft.) counties, KANSAS.

**affictula** Cockerell, 1910, p. 366. Mesilla, NEW MEXICO; V.

*alboresta* Fowler, 1902, p. 321. Misprint for *albovestita*.

**albovestita** Provancher, 1896, p. 27. ♀. Los Angeles, CALIFORNIA; (Coquillett).

*apacha*. See *diminuta*.

*arctos*. See *enavata*.

**australis** Cresson, 1878*a*, p. 214. (*Melissodes*) ♀\*, ♂. COLORADO\*; (Ridings, Morrison). TEXAS; (Belfrage).

Patton, 1879, p. 476.

Cockerell, 1893, p. 338. Near Swift Creek, Custer County, COLORADO.

Cockerell, 1898*c*, p. 193. Santa Fé Canyon, NEW MEXICO; 7700 ft.; VI; at *Opuntia arborescens*. Whitewater, Grant County, NEW MEXICO; VII.

Viereck, 1903*b*, p. 728. San Bernardino, CALIFORNIA; VII; at *Helianthus*; (Cockerell).

Cockerell, 1905*b*, p. 745. Wallace and Morton Counties, KANSAS; (Snow).

Cockerell, 1906, pp. 73, 100, 310. Fedor, TEXAS; (Birkman).

Cockerell, 1914*b*, p. 410. Falfurrias, TEXAS; V; at *Helianthus*; (Morgan).

**australis knabiana** Cockerell, 1917*b*, p. 304. ♀. Tehuantepec, Oaxaca, MEXICO; VI; (Knab).

**australis opuntiae** Cockerell, 1901, p. 286. (*Diadasia rinconis opuntiae*) ♀. San Pedro, CALIFORNIA; VII; at *Opuntia*; (W. P. Cockerell).

*D. rinconis opuntiae* Viereck, 1903*b*, p. 728.

*D. rinconis* Cockerell, 1905, p. 14. Los Angeles and Palm Spring, CALIFORNIA.

Cockerell, 1906, p. 101.

(?) *D. australis* Cockerell, 1914*b*, p. 410. San Bernardino, CALIFORNIA; at *Helianthus*.

Bray, 1917, p. 94. Claremont, CALIFORNIA; V; at cactus.

**australis rinconis** Cockerell, 1897*b*, p. 154. (*Diadasia rinconis*) ♀. Rincon, NEW MEXICO; VII; at *Chilopsis saligna* and an asclepiad.

*Diadasia rinconis* Cockerell, 1904*a*, p. 24. Pecos, NEW MEXICO; VIII; at *Opuntia arborescens*.

Cockerell, 1905*b*, p. 745. CALIFORNIA. Bill Williams's Fork and Oak Creek Canyon, ARIZONA; (SNOW). Texas (a ♀ cotype of *australis*).

Cockerell, 1906, pp. 101, 311. Las Vegas and Mesilla Valley, NEW MEXICO.

Cockerell, 1917*a*, p. 191. Point Isabel and San Benito, TEXAS; IV; at cactus and *Argemone*; (W. P. Cockerell).

Bray, 1917, p. 94. Claremont, CALIFORNIA; V; at cactus.

See *australis opuntiae*.

**bituberculata** Cresson, 1878*a*, p. 218. (*Melissodes*) ♂. CALIFORNIA; (Crotch).

*D. cinerea* Fowler, 1899, p. 285. ♂. Berkeley, CALIFORNIA; V, VI.

Cockerell, 1903*b*, p. 77.

*D. cinerea* Cockerell, 1905, p. 14. Los Angeles and Rock Creek, CALIFORNIA.

Cockerell, 1905*b*, p. 745. NEVADA.

Bray, 1917, p. 94. Claremont, CALIFORNIA; V; at cactus.

*cinerea*. See *bituberculata*.

**crassicauda** Cockerell, 1915*c*, p. 231. ♂. Laguna, CALIFORNIA; (La Follette).

*densa*. See *enavata densa*.

**diminuta** Cresson, 1878*a*, p. 215. (*Melissodes*) ♂. COLORADO; (Morrison).

*Melissodes apache* Cresson, 1878*a*, p. 217. ♀. TEXAS\*. NEW MEXICO. ARIZONA.

*D. diminuta* Patton, 1879, p. 476.

*A. apache* Fox, 1893, pp. 21, 118. San Julio, San Esteban, San José de Gracias, and El Paraiso, Lower California, MEXICO; IV, V, X; (Haines).

Cockerell, 1897*c*, p. 20. Santa Fé (7000 ft.) and Mesilla Valley (3800 ft.), NEW MEXICO. Juarez, MEXICO.

Cockerell, 1898, p. 193. Mesilla Valley, NEW MEXICO; at *Sphaeralcea angustifolia* and roses.

Cockerell, 1900, p. 363. Las Vegas, NEW MEXICO; at *Sphaeralcea fendleri lobata*, *S. cuspidata*, *Malvastrum coccineum*, *M. dissectum* and *Sidalcea neomexicana*.

Cockerell, 1903, p. 444. Mescalero, NEW MEXICO; X; at *Sphaeralcea fendleri*.

Cockerell, 1905, p. 15. Palm Spring, CALIFORNIA.

Cockerell, 1905*b*, p. 745. Hamilton County, KANSAS; (Snow).

Cockerell, 1906, pp. 101, 311. Gives synonymy.

Crawford, 1912, p. 359. Medicine Hat, ALBERTA; (Malloch).

**enavata** Cresson, 1872, p. 280. (*Melissodes*) ♀. Bosque County (?), TEXAS\*; (Belfrage).

*Melissodes ? ursina* Cresson, 1872, p. 281. ♂. TEXAS; (Belfrage, Boll).  
Patton, 1879, p. 476.

Cockerell, 1893, p. 338. West Cliff, Custer County, COLORADO; VII.

Fox, 1893, p. 21. Comondu, Lower California, MEXICO; III; (Haines).

Townsend, 1896, p. 138. Las Cruces, NEW MEXICO; VIII.

*Eucera arctos* Dalla Torre, 1896, p. 225. N. n. for *Melissodes ursina* Cresson, not Haliday.

Cockerell, 1897*c*, p. 20. Santa Fé (7000 ft.), Mesilla Valley (3800 ft.) and Soledad Canyon, Organ Mountains, NEW MEXICO; (1898*f*, p. 79) sleeping in closed flowers of *Argemone platyceras*.

Cockerell, 1898*c*, p. 193. Mesilla Valley, IX, at *Bigelovia wrightii* and *Verbesina encelioides*; Santa Fé, VIII; Rincon, VII, at *Chilopsis*; Lone Mountain, near Silver City, VII, at *Sidalcea malyeiflora*; Deming, VII, at *Verbesina encelioides*; and Clora'o, VII, at *Spheralcea angustifolia*;—all, NEW MEXICO.

Fowler, 1899, p. 286. Santa Catalina Island, Santa Barbara, and Redlands, CALIFORNIA; VI.

Cockerell, 1905*b*, p. 745. ARIZONA. Wallace County, KANSAS; (Snow). Lamar, Palisade, Julesburg, and Trinidad, COLORADO.

Cockerell, 1905*h*, p. 218. Mesilla, NEW MEXICO; VII; at *Helianthus annuus*.

Cockerell, 1906, pp. 73, 101, 311. Fedor, TEXAS; (Birkman). At *Helianthus*. Gives synonymy.

Cockerell, 1916*b*, p. 77. Orange, CALIFORNIA; VIII; at *Helianthus lenticularis*.

**enavata densa** Cresson, 1872, p. 282. (*Melissodes ? densa*) ♂. Bosque County (?), TEXAS\*, (Belfrage).

*Melissoides densa* Cresson, 1876, p. 210. Spring Lake, UTAH. Boulder, COLORADO. (Putnam).

*Diadasia*, Syn. of *enavata*, Patton, 1879, p. 476.

Cockerell, 1905*b*, p. 745. Rocky Ford, COLORADO.

**friesei** Cockerell, 1898*c*, p. 192. ♀. Southern CALIFORNIA.

*knabiana*. See *australis knabiana*.

**laticauda** Cockerell, 1905, p. 103. ♀. Los Angeles, CALIFORNIA; (Davidson).

**megamorpha** Cockerell, 1898*c*, p. 192. ♂, ♀. Mesilla Valley\*, IX, and Whitewater by the White Sands, X, NEW MEXICO; at *Spheralcea fendleri lobata*, not *angustifolia* (See Cockerell, 1905*b*, p. 745).

*nerea*. See *nigrifrons*.



**nigrifrons** Cresson, 1878a, p. 195. (*Melissodes*) ♀. CALIFORNIA; (Crotch).

*Diadasia nerea* Fowler, 1899, p. 285. ♀, ♂. Tulare, CALIFORNIA; V; (H. O. Woodworth).

*D. nerea* Cockerell, 1905, pp. 14, 105. Los Angeles and Banning, CALIFORNIA.

Cockerell, 1906, p. 101. Gives synonymy.

**nitidifrons** Cockerell, 1905, p. 104. ♂. Banning, CALIFORNIA. (Davidson).

Cockerell, 1909b, p. 206. N. Yakima, WASHINGTON; VI; (Jenne).

See *skinneri*.

*opuntia*. See *australis opuntia*.

*perafflicta*. See *afflicta perafflicta*.

**piercei** Cockerell, 1911, p. 132. ♂\*, ♀. Corpus Christi\*, TEXAS; III; at *Opuntia*; (W. D. Pierce). Beeville, TEXAS; IV; at *Opuntia*; (Marlatt). "A species of the Lower Austral Zone."

*rinconis*. See *australis rinconis*.

**skinneri** Cockerell, 1909b, p. 206. ♂. N. n. for *nitidifrons* Cockerell, 1906, p. 73. Silver Lake, Wasatch Mountains, UTAH; 8600 ft.; VII; (Skinner).

**sphæralcearum** Cockerell, 1905b, p. 744. ♂. Between Las Cruces and Mesilla Park, NEW MEXICO; VIII; at *Sphæralcea fendleri lobata*.

**sumichrasti** Cresson, 1878a, p. 218. (*Melissodes*). ♀\*, ♂. MEXICO; (Sumichrast).

Cockerell, 1904a, p. 22.

See *Ptilothrix* and Cockerell, 1917b, p. 304.

*toluca*. See *Leptergatis*.

*tricincta*. See *afflicta*.

*ursina*. See *enavata*.

### *Diadasia* Ashmead

See *Exomalopsis*.

### *Dipedia*

See *Leptergatis*.

### **EMPHOR** Patton, 1879, p. 476

(Type: *Melissodes bombiformis* Cresson)

Dalla Torre, 1896, p. 221, made *Emphor* a subgenus of *Eucera*.

**bombiformis** Cresson, 1878a, p. 219. (*Melissodes*) ♀\*, ♂. KANSAS.\* GEORGIA. VIRGINIA.

See *Melissodes nigripes* Smith, 1854, p. 311. ♀ (not ♂), according to Robertson, 1900, p. 53.

*Emphor bombiformis* Patton, 1879, p. 476.

Robertson, 1891a, p. 581. At *Ipomæa pandurata*.

Robertson, 1899, p. 36. Presumably Carlinville, ILLINOIS; at *Hibiscus lasiocarpus*.

Viereck, 1903a, p. 119. Chestertown, Maryland; (Vanatta). Gloucester County, New Jersey; (Fox). VIII. [This New Jersey record is doubtless for *fuscojubatus* (see Smith, 1910) and the Maryland one may be.]

Cockerell, 1906, p. 100. At *Hibiscus* and *Ipomæa*.

Knab, 1911, p. 170. "Drinking" habits. See Robertson, 1918, p. 320.

Robertson, 1914, p. 71. "Nests in the neighborhood of the *Hibiscus* on which it depends."

Bequaert, 1918, p. 126. Sabine River, LOUISIANA.

See *fuscojubatus*.

**fuscojubatus** Cockerell, 1913, p. 107. ♀. Cape May Point, NEW JERSEY; VIII; (Miss L. Nichols).

*E. bombiformis* Smith, 1910, p. 694. Arlington and Gloucester County, NEW JERSEY; VIII; at *Ipomæa* and *Hibiscus*.

*E. bombiformis* Grossbeck, 1911, pp. 238-244. Habits.

Nichols, 1913, pp. 107-112. Habits.

*nigripes*. See *bombiformis*.

**EMPHOROPSIS** Cockerell, T. D. A. and W. P., 1901, p. 48

(Type: *Anthophora floridana* Smith)

Ashmead, 1899, p. 60, named the genus but assigned no species.

Dalla Torre, 1896, placed all of the described species in *Podalirius*, of which he accepted *Habropoda* Smith, 1854, p. 320 as a subgenus.

*Meliturgopsis* Ashmead, 1899, p. 62. See Cockerell, T. D. A. and W. P., 1901, p. 49; also Cockerell, 1901a, p. 49, 1903b, p. 77, and 1909a, p. 414. Vachal, 1909, p. 9, gave this name generic rank with *aurulentocaudata* as the type, but this can not stand as it disagrees with Ashmead's original interpretation.

**agilis** Smith, 1879, p. 118. (*Habropoda*) ♂. Oaxaca, MEXICO.

Cockerell, 1904d, p. 302.

**albiceps** Friese, 1916, p. 333. (*Anthophora*) ♀. Jacubaya [Tacubaya?], MEXICO. Allied to "*aureolentocaudata*."

*aureolentocaudata*. See *aurulentocaudata*.

**aurulentocaudata** Dours, 1869, p. 92. (*Anthophora*) ♀, ♂. MEXICO.

*Habropoda aurulentocaudata* Patton, 1879, p. 479.

*Podalirius aureolentocaudatus* Dalla Torre, 1896, p. 258.

Cockerell, 1906, p. 100.

**birkmanni** Cockerell, 1905c, p. 265. ♀. Fedor, Lee County, TEXAS; III; (Birkman).

**bombyformis** Smith, 1879, p. 119. (*Habropoda*) ♂. Oaxaca, MEXICO.

*Podalirius bombyformis* Dalla Torre, 1896, p. 261. N. n. because he included *Saropoda bombyformis* Smith in *Podalirius*.

Cockerell, 1904d, p. 302.

*brombyformis*. See *bombyformis*.

**cineraria** Smith, 1879, p. 124. (*Anthophora*) ♀, ♂. Vancouver Island, BRITISH COLUMBIA.

Cockerell, 1904d, p. 302.

Cockerell, 1906b, p. 277. Yakima, WASHINGTON; IV.

*cressonii*. See *mucida*.

**depressa** Fowler, 1899, p. 283. (*Habropoda*) ♀, ♂. Berkeley, CALIFORNIA; II to V. Santa Catalina Island, CALIFORNIA; VI; (Woodworth.) At *Cytisus proliferus*, oak, and *Ranunculus californicus*; nests described.

Cockerell, 1906, p. 100.

**elefas** Friese, 1916, p. 334. (*Anthophora*) ♂. Jacubaya [Tacubaya?], MEXICO. Allied to "*aureolentocaudata*."

*fedorensis*. See *floridana fedorensis*.

**floridana** Smith, 1854, p. 339. (*Anthophora*) ♀, ♂. St. John's Bluff, eastern FLORIDA.

*Anthophora floridana* Cresson, 1869, p. 291. PENNSYLVANIA. ILLINOIS.

*Habropoda floridana* Patton, 1879, p. 478.

*Habropoda floridana* Fowler, 1899, p. 283. Redonda, CALIFORNIA; V; (Woodworth).

Cockerell, 1904d, p. 302.

Cockerell, 1905, p. 14. Los Angeles, CALIFORNIA.

Cockerell, 1905c, p. 265, and 1905f, p. 182. GEORGIA.

*Anthophora floridana* Smith, 1910, p. 694. Orange Mountains; Jamesburg, V; Lahaway, VI; Clematon, IV, V; Mannmuskin, IV;—all, NEW JERSEY.

*Anthophora (Emphoropsis) floridana* Viereck, 1916, p. 737. New Haven, CONNECTICUT; IV.

See *pascoensis*.

The California records seem doubtful.

**floridana fedorensis** Cockerell, 1905c, p. 265. ♂, ♀. Fedor, Lee County, TEXAS; III, IV; (Birkman).

**fulva** Smith, 1879, p. 119. (*Habropoda*) ♂. GUATEMALA.

Cockerell, 1904a, p. 204. Mexico (?).

*habropoides*. See *terminata*.

*infernalis*. See *tristissima* and *Anthophora*.

**interspersa** Cockerell, 1905, pp. 99, 100. ♂. CALIFORNIA.

- johnsoni** Cockerell, 1905*d*, p. 59. (*mucida johnsoni*) ♀\*, ♂. Fort Collins\*, COLORADO; V; at *Delphinium*; (S. A. Johnson). Lamar, COLORADO; (Gillette).  
Cockerell, 1905, p. 99.  
Cockerell, 1910*a*, p. 310. Steamboat Springs, COLORADO; 6680 ft.
- melanopyrrha** Dours, 1869, p. 90. (*Anthophora*) ♀, ♂. MEXICO.  
*Habropoda melanopyrrha* Patton, 1879, p. 479.  
Cockerell, 1906, p. 100.
- miserabilis** Cresson, 1878*a*, p. 191. (*Anthophora*) ♂. CALIFORNIA; (H. Edwards).  
*Habropoda miserabilis* Patton, 1879, p. 479.  
*Habropoda miserabilis* Fowler, 1899, p. 284. ♀. San Francisco, CALIFORNIA; IV; at *Phacelia californica*.  
Cockerell, 1906, p. 100.
- montezumia** Smith, 1879, p. 118. (*Habropoda*) ♂. Oaxaca, MEXICO.  
Cockerell, 1904*d*, p. 302.
- morrisoni** Cresson, 1878*a*, p. 192. (*Anthophora*) ♂. COLORADO; (Morrison).  
*Habropoda morrisoni* Patton, 1879, p. 479.  
Cockerell, 1905, p. 100. ♂ of *mucida*?
- mucida** Cresson, 1878*a*, p. 191. (*Anthophora*) ♀. COLORADO; (Morrison).  
*Habropoda mucida* Patton, 1879, p. 479.  
*Podalirius cressonii* Dalla Torre, 1896, p. 264. N. n. because he included *Anthophora mucida* Griboda in *Podalirius*.  
Cockerell, 1906, p. 100. Suggests that it is the ♀ of *morrisoni*.  
Cockerell, 1906*d*, p. 443. Florissant, COLORADO; VI; at *Ribes longiflorum*.  
See *johnsoni*.
- murihirta** Cockerell, 1905*a*, p. 81. ♂, ♀. Los Angeles, CALIFORNIA; (Davidson).  
Cockerell, 1916, p. 283. Claremont, CALIFORNIA; (Baker).
- murihirta murina** Cockerell, 1909*a*, p. 414. ♂. San Francisco County, CALIFORNIA; X.  
*murina*. See *murihirta murina*.
- pascoensis** Cockerell, 1898*b*, p. 54. (*Habropoda floridana pascoensis*) ♀. Pasco, WASHINGTON; V; (Kincaid).  
Cockerell, 1905*c*, p. 265.
- rugosissima** Cockerell, 1905*f*, p. 182. ♀. NEVADA.
- salviarum** Cockerell, 1897*c*, p. 42. (*Habropoda*) ♂, ♀. Top of Organ Mountains, NEW MEXICO; VIII; at *Salvia*; (Townsend and Tinsley).

Cockerell, 1904, p. 234. Blue River, ARIZONA; (Davidson).

**semifulva** Cockerell, 1905, p. 99. ♂. CALIFORNIA.

**terminata** Smith, 1879, p. 119. (*Habropoda*) ♀, ♂. Oaxaca, MEXICO.

*Podalirius habropoides* Dalla Torre, 1896, p. 271. N. n. because he included *Anthophora terminata* Smith in *Podalirius*.

Cockerell, 1904*d*, p. 302.

**tristissima** Cockerell, 1904*e*, p. 161. (*Emphoropsis infernalis tristissima*) ♀. Los Angeles and Lancaster (Mohave Desert), CALIFORNIA; (Davidson).

Cockerell, 1906, p. 100.

Cockerell, 1916, p. 283. Claremont, CALIFORNIA; (Baker).

**vierecki** Cockerell, 1909*a*, p. 414. Name for "n. sp. Viereck, ined.,"

Cockerell, 1905*c*, p. 265. COLORADO. NEW MEXICO.

#### **ENTECHNIA** Patton, 1879, p. 476

(Type: *Anthophora taurea* Say)

It seems quite probable that the name *Entechnia* must give way to *Melitoma*. See Latreille, 1825, p. 464; Lepeletier, 1825, p. 529; Friese, 1899*a*, p. 273; Vachal, 1909, p. 5; Ducke, 1912, p. 95 (mixes a number of quite different genera); and Cockerell, 1917*b*, p. 304.

*dakotensis*. See *grisella*.

*euglossodes*. See *fulvifrons*.

**fulvifrons** Smith, 1854, p. 341. (*Anthophora*) ♀. Pará, Santarem, BRAZIL.

*Anthophora fulvifrons* Dours, 1869, p. 134. ♀, ♂. Brazil.

Cresson, 1887, pp. 304, 305. Includes his *Melissodes* ? *marginella*. See *euglossoides marginella*.

*Euclera marginella* and *Podalirius fulvifrons* Dalla Torre, 1896, pp. 240, 269.

Cockerell, 1899*b*, p. 14. Lower part of Rio Nautla, MEXICO.

*Meliphila impomæ* Schrottky, 1902, p. 311. ♂, ♀. Buenos Ayres and État de St. Paul, BRAZIL; at *Ipomæa eriocarpa*.

*Podalirius fulvifrons* Schrottky, 1903, p. 524.

Cockerell, 1905*c*, p. 335. Fedor, Lee County, TEXAS; VIII. ARGENTINA. BOLIVIA.

Crawford, 1906, p. 161. Juan Vinas and Monte Redondo (about 4000 ft.), COSTA RICA; III; (Bruner).

*Anthophora taurea fulvifrons* Friese, 1916, p. 295. San José, COSTA RICA; (Schmidt).

Probably the same as *euglossoides*.

**fulvifrons marginella** Cresson, 1872, p. 282. (*Melissodes* ? *marginella*)

♂, ♀\*. Comal County\*, TEXAS. MEXICO.

*Melitoma euglossoides marginella* Cockerell, 1914c, p. 316. Guatemala City, (Rodriguez), and Quirigua, (W. P. Cockerell), GUATEMALA Rio Nautla, MEXICO; (Townsend).

**grisella** Cockerell and Porter, 1899, p. 409. ♂. La Cueva, Gallinas River, S. of Las Vegas, NEW MEXICO; VIII; (Porter). Cockerell, 1906, p. 310, gives Las Valles as the type locality. (La Cueva was a mistake.)

*Entechnia dakotensis* Cockerell and Porter, 1899, p. 409. ♀. Hot Springs, DAKOTA; (L. Bruner).

Cockerell, 1906, pp. 73, 99. Gives this synonymy. Rocky Ford and Denver, COLORADO; (S. A. Johnson). Wallace County, KANSAS; 3000 ft.; (Snow). NEBRASKA; at *Ipomæa leptophylla*; (Crawford).

*ipomæa*. See *fulvifrons*.

*marginella*. See *fulvifrons* and *fulvifrons marginella*.

**taurea** Say, 1837, p. 410. (*Anthophora*) ♀, ♂. INDIANA; describes nest.

*Anthophora taurea* Dours, 1869, p. 149. MEXICO. Describes but does not name a variety.

Patton, 1879, p. 476.

Robertson, 1891a, pp. 571, 581. At *Asclepias incarnata*, *Ipomæa pandurata*, and *Convolvulus sepium*.

*Podalirius taureus* Dalla Torre, 1896, p. 291.

Robertson, 1901a, p. 367. An oligotropic visitor of *Ipomæa pandurata*.

Holmberg, 1903, p. 400. North America to Buenos Ayres, ARGENTINA.

Cockerell, 1906, p. 99. ILLINOIS and GEORGIA; at *Convolvulus*.

*Melitoma taurea* Smith, 1910, p. 694. Fort Lee and Camden County, NEW JERSEY; VI.

Robertson, 1914, p. 68. *Triepeolus donatus* is inquiline.

See *fulvifrons*.

*toluca*. See *Leptergatis*.

#### LEPTERGATIS Holmberg, 1903, p. 422

Holmberg's first species, *L. halictoides* Holmberg, may be considered the type. This is said to be identical with *Dipedia gigas* Friese. See p. 641.

*Dipedia* Friese, 1906, p. 92. Type: *Ancyloscelis armata* Smith. **armata** Smith, 1854, p. 367. (*Ancyloscelis*) ♂. BRAZIL.

*Ancyloscelis armatus* Cockerell, 1905e, p. 325. Discusses generic position.

Cockerell, 1902b, p. 29. Quirigua, GUATEMALA; II; at *Zexmenia virgulta*; (W. P. Cockerell).

**toluca** Cresson, 1878a, p. 219. (*Melissodes*) ♀\*, ♂. MEXICO; (Sumichrast).

*Diadasia toluca* Fox, 1893, p. 118. San José del Cabo, Lower California, MEXICO; X; (Eisen).

*Eucera toluca* Dalla Torre, 1896, p. 249.

*Entechnia toluca* Cockerell, 1905b, p. 741.

Cockerell, 1912b, p. 29. Gualan, GUATEMALA; II; at *Cordia alba*; (W. P. Cockerell).

**wheeleri** Cockerell, 1912, p. 105. ♂. Escuintla, GUATEMALA; XII; (Wheeler).

#### *Habropoda*

See *Emphoropsis*.

#### *Meliturgopsis*

See *Emphoropsis*.

#### *Melitoma*

See *Entechnia*.

#### *Micranthophora*

See *Anthophora*.

### **Eucerinæ**

**ANTHEDON** Robertson, 1900, p. 53

(Type: *Melissodes compta* Cresson)

**compta** Cresson, 1878a, p. 199. (*Melissodes*) ♀\*, ♂. GEORGIA; (Morrison).

Robertson, 1901a, p. 367. An oligotrope of *Ænothera biennis* at Carlinville, ILLINOIS.

Cockerell, 1905c, p. 267. Fedor, Lee County, TEXAS; VI.

Cockerell, 1906, p. 79. Cheyenne Mountain, near Colorado Springs, COLORADO; VII; (Gillette).

*Melissodes compta* Smith, 1910, p. 693. Westville, NEW JERSEY. Philadelphia, PENNSYLVANIA. VII.

*Melissodes (Anthedon) compta* Viereck, 1916, p. 732.

**GEMOLOBUS** Robertson, 1902, pp. 324, 325

(Type: *Xenoglossa ipomææ* Robertson)

**ipomœæ** Robertson, 1891a, p. 581, and 1898, p. 65. (*Xenoglossa*) ♀. Carlinville, ILLINOIS; VII, VIII; at *Ipomæa pandurata*.

Robertson, 1902, pp. 324, 325. ♀, ♂.

Cockerell, 1906, pp. 101, 106. Lehigh Gap, PENNSYLVANIA; (Rehn).

#### *Epimelissodes* Ashmead

See *Melissodes*.

#### *Eucera* Scopoli

Dalla Torre, 1896, included practically all of our eucerine bees in this genus.

“*Eucera* Scop. is European. *E. maculata* Lep., if correctly placed generically, is probably wrongly attributed to North America” (Cockerell, 1906, p. 104).

*Eusynhalonia* Ashmead

See *Tetralonia*.

*Euthyglossa* Radoszkowsky, 1884, p. 21

This genus is probably a synonym of *Osiris* (see Cockerell, 1906, p. 104). At any rate, *fasciata* Radoszkowski, 1884, p. 22 (*Eucera euthyglossa* Dalla Torre, 1896, p. 232), does not belong to the groups treated here.

**FLORILEGUS** Robertson, 1900, p. 53

(Type: *Melissodes condigna* Cresson)

Cockerell, 1906, p. 107, questions the validity of the genus.

**condigna** Cresson, 1878*a*, p. 207. (*Melissodes*) ♀. ILLINOIS and KANSAS.\*

*Melissodes palustris* Robertson, 1892, p. 273. ♂. Carlinville, ILLINOIS; at *Dianthera americana* and *Pontederia cordata*. See 1898, p. 53.

Cockerell, 1909*c*, p. 129. ♀. Plano (about 17 miles N. of Dallas), TEXAS; X; (Tucker).

*Melissodes (Florilegus) condigna* Viereck, 1916, p. 732.

**lanierii** Guérin, 1845, p. 455, Pl. LXXIV, fig. 7. (*Macrocera*) ♂. CUBA.

*Tetralonia lanierii* Smith, 1854, p. 308.

*Melissodes lanierii* Cresson, 1865, p. 188.

Cockerell, 1906, p. 77.

*palustris*. See *condigna*.

*Macrocera*

See *Tetralonia*.

*Macroglossa*

See *Thygater*.

*Macroglossapis*

See *Thygater*

**MARTINELLA** Cockerell, 1903, p. 450

(Type: *Melissodes luteicornis* Cockerell)

Proposed as a subgenus of *Melissodes*.

**luteicornis** Cockerell, 1896*a*, p. 293. (*Melissodes*) ♂. Rincon and Colorado, NEW MEXICO; VII; at *Prosopis juliflora glandulosa*.



*Melissodes luteicornis* Cockerell, 1898f, p. 314. Las Cruces, NEW MEXICO; at *Cevallia sinuata*.

Cockerell, 1906, p. 310. Mesilla Valley, NEW MEXICO.

**MELISSODES** Romand, 1841, Pl. LXX

(Type: *Melissodes fonscolombei* Romand)

Cockerell, 1912d, p. 267: "*Melissodes* is usually credited to Latreille, but it was defined, and species assigned to it, by F. Smith in 1854. Lepelletier described what was understood to be Latreille's insect as *Melissoda latreillii*; this is *Acanthopus goryi* Romand. Mr. J. C. Crawford writes in a letter that Romand in 1841 included a species in *Melissodes*; I have not had access to this work." Apparently Romand is the real author of the genus. Romand's account of *Melissodes fonscolombei* is extremely confused, and his figures are bad. He supposed he had both sexes of a single species, the male from the Antilles, the female from Chili. In a postscript he states that the true insect of Latreille is from the Antilles. The figures indicate that the two insects were both males; one, presumably from the Antilles, a *Melissodes* in the modern sense; the other a *Diadasia*. His Figure 6 shows well the apex of the abdomen of ♂ *Diadasia*, and 5 B appears to be a *Diadasia* leg, with thickened femur. But figures 1 A, 2, 3, 5 A and 7 all indicate male *Melissodes*. The light clypeus and long antennæ are well shown, and the wing agrees, except that the third submarginal cell is too broad above. We propose to restrict the name to the last mentioned, thereby conserving *Melissodes* in the sense of modern authors and of Latreille. Unless *fonscolombei* can be definitely identified by finding the type or in some other way the justice of crediting the genus to Romand may be questioned.

Dalla Torre, 1896. Includes *Melissodes* under *Eucera*.

**Epimelissodes** Ashmead, 1899, p. 163 (Type: *M. atripes* Cresson) might be considered a subgenus.

For keys, etc., see Robertson, 1905, and Cockerell, 1905e, 1905h, 1906, and 1912d.

*acerba*. See *Tetralonia*.

*acomanche*. See *atripes acomanche*.

*actuosa*. See *Tetralonia*.

*afflicta*. See *Diadasia*.

**agilis** Cresson, 1878a, p. 204. ♂. TEXAS; (Belfrage).

Cockerell, 1894, p. 234. Juárez, MEXICO; VIII.

Robertson, 1896, p. 176. Carlinville, ILLINOIS; at *Silphium perfoliatum*.

Cockerell, 1897c, pp. 23, 24, 28. Socorro, Mesilla Valley, and Organ Mountains, NEW MEXICO.

Cockerell, 1898a, pp. 67, 73. Albuquerque, NEW MEXICO; at *Helianthus annuus*. 1898f, pp. 312 and 314: Las Cruces, NEW MEXICO.

Cockerell, 1901a, p. 129. Las Vegas, Sapello Canyon, and San Ignacio, NEW MEXICO; VII, VIII; at *Helianthus annuus*, *Verbesina encelioides*, and *Cleome serrulata*. Var. a, ♂, has no yellow spot on mandibles.

Cockerell, 1905, pp. 13, 28, 29. Notes variations, without naming them, from Bear Valley, Rock Creek, Los Angeles, and Catalina Island, CALIFORNIA; (Davidson).

Lovell and Cockerell, 1906, p. 110. Waldoboro, MAINE; VIII, IX; at *Helianthus*.

Cockerell, 1906, pp. 102, 309. COLORADO. Santa Fé, Las Vegas, and San Ignacio, NEW MEXICO. "Transition to Middle Sonoran Zones."

Cockerell, 1907b, p. 255. Boulder, COLORADO; VIII; at *Grindelia*.

Tucker, 1909, p. 278. Colorado Springs and Denver, COLORADO; VIII.

Cockerell, 1910d, p. 128. Rifle Gap, COLORADO; at *Helianthus*; (Robbins). Remarks on variation.

Grænicher, 1911, p. 247. Mouth of the Yellow River and Randall in Burnett County, Farmington in Polk County, Hudson in St. Croix County, and Prescott and Maiden Rock in Pierce County, WISCONSIN; VII, VIII; at *Composita*.

Cockerell, 1914d, p. 365. Fresno, CALIFORNIA; VIII.

See *lupina*.

***agilis aurigenia*** Cresson, 1878a, p. 212. (*M. aurigenia*) ♀\*, ♂.  
CANADA. MAINE. NEW YORK. VIRGINIA. LOUISIANA. MISSOURI.  
KANSAS. COLORADO.\* NEW MEXICO. UTAH.

*M. aurigena* Robertson, 1894, pp. 452-475. Macoupin County, ILLINOIS; at *Eupatorium purpureum*, *Lacinia* ["*Liatris*"] *pyncostachya*, *Aster novæ-angliæ*, *Silphium integrifolium* and *laciniatum*, *Lepachys pinnata*, *Helianthus grosseserratus* and *tuberosus*, *Coreopsis aristosa*, *Bidens chrysanthemoides*, *Helenium autumnale*, and *Cnicus lanceolatus*.

*M. agilis* Robertson, 1897, p. 354. Made *aurigena* a synonym of *agilis*. Carlinville, ILLINOIS.

*M. aurigena* Robertson, 1898a, p. 244. At *Helianthus divaricatus*.

*M. aurigena* Cockerell, 1897c, p. 20. Santa Fé, NEW MEXICO; 7000 ft.; (1898f, p. 79) sleeping in closed flowers of *Argemone platyceras*.

Cockerell, 1898a, pp. 67, 73. Albuquerque, NEW MEXICO; IX; at *Helianthus annuus*.

Cockerell, 1901a, p. 129. Romeroville and Las Vegas, NEW MEXICO; VII, VIII; at *Medicago sativa*, *Verbesina encelioides*, and *Aplopappus spinulosus*.

*M. aurigena* Cockerell, 1905, p. 103. Phoenix, ARIZONA; X.

*M. aurigena* Cockerell, 1906, p. 92. Oak Creek Canyon, ARIZONA; (Snow). Sterling, Durango, Greeley, and Fort Collins, COLORADO.

*M. aurigena* Tucker, 1909, p. 278. Colorado Springs and Denver, COLORADO; VII, VIII.

*M. aurigena* Cockerell, 1911, p. 390. Sterling, COLORADO; VIII; at *Helianthus*.

*M. aurigena* Cockerell, 1914b, p. 409. Goodview, COLORADO; VII; at *Helianthus annuus coronatus*.

*M. aurigena* Cockerell, 1915b, p. 482, and 1916b, p. 77. Orange, CALIFORNIA; VIII; at *Helianthus lenticularis*.

*agilis semiagilis*. See *semiagilis*.

*agilis snowii*. See *snowii*.

**agilis subagilis** Cockerell, 1905d, p. 145. ♂. Fort Collins, COLORADO; VIII; at *Grindelia squarrosa*; (Bishopp).

Cockerell, 1906, pp. 76, 92, 102. Oak Creek Canyon, ARIZONA; (Snow).  
Cockerell, 1906c, p. 367. Fedor, Lee County, TEXAS; (Birkman).

*albata*. See *Xenoglossodes*.

*albilabris*. See *Thygater*.

**alboincta** Cockerell, 1919a, p. 119. ♀. MEXICO; (Baker). "This may be referable to *Xenoglossodes*."

**albo-collaris** Cockerell, 1919b, p. 30. MEXICO; (Baker).

**ambigua** Smith, 1879, p. 116. ♀. MEXICO.

**americana** Lepeletier, 1841, p. 92. (*Macrocera*) ♂. CAROLINA.

Smith, 1854, p. 312.

Robertson, 1898, p. 53. Says that *dentiventris* Robertson, 1897, p. 353, is this species. 1898a, p. 244: (?) Carlinville, ILLINOIS; at *Helianthus divaricatus*.

*apacha*. See *Diadasia diminuta*.

**apicata** Lovell and Cockerell, 1906, p. 111. ♀. Waldoboro, MAINE; VII; at *Pontederia cordata*.

*aschenborniana*. See *tapaneco aschenborniana*.

*assimilis*. See *Xenoglossa*.

**asteris** Robertson, 1914, pp. 70, 373. ♀. Carlinville, ILLINOIS; at *Asteroidæ*.

**atrata** Smith, 1879, p. 115. ♂. Oaxaca, MEXICO.

*Eucera atratula* Dalla Torre, 1896, p. 225.

Cockerell, 1896a, p. 290. Paso de Telaya, Vera Cruz, MEXICO; IV; (Townsend).

Cockerell, 1899b, p. 13. Oaxaca and lower part of Rio Nautla, MEXICO.

*atratula*. See *atrata*.

**atrifera** Cockerell, 1910, p. 256. ♂. MEXICO; (Deppe).

**atrifera sandiarum** Cockerell, 1910, p. 257. ♂. Sandia Mountains NEW MEXICO; VII; at *Croton*; (Watson).

*atrifrons* See *carolinensis*.

**atripes** Cresson, 1872, p. 275. ♀. TEXAS; (Belfrage).

Robertson, 1898, p. 54. Carlinville, ILLINOIS. 1914, p. 73: at *Cassia chamæcrista*.

*Epimelissodes atripes* Ashmead, 1899, p. 63.

Birkman, 1899, p. 245. Fedor, Lee County, TEXAS; VI. (See Cockerell, 1905c, p. 335.)

Smith, 1910, p. 693. Camden County, NEW JERSEY; (Fox).

**atripes acomanche** Cockerell, 1906, p. 109. ♂. Fedor, Lee County, TEXAS; VI; (Birkman).

*atriventris*. See *Tetralonia*.

*aurigenia*. See *agilis aurigenia*.

*australis*. See *Diadasia*.

**autumnalis** Robertson, 1905, p. 369, for Robertson, 1896, pp. 175, 178 (manuscript name). ♀, ♂. Carlinville, ILLINOIS; at *Aster ericoides villosus* and *Rudbeckia laciniata*.

Cockerell, 1906, p. 114. Fedor, Lee County, TEXAS; XI; (Birkman).

**baileyi** Cockerell, 1906c, p. 361. ♀. Fedor, Lee County, TEXAS; IV; (Birkman).

*belfragii*. See *Tetralonia*.

**bidentis** Cockerell, 1914d, p. 362. ♀. West Point, NEBRASKA; IX; at *Bidens*; (Crawford).

**bimaculata** Lepeletier, 1825, p. 527. (*Macrocera*) ♀. PENNSYLVANIA.

*Macrocera binotata* Say, 1837, p. 404. ♀, ♂. INDIANA.

*Macrocera nigra* Lepeletier, 1841, p. 241. PENNSYLVANIA.

*Melissodes nigra* Smith, 1854, p. 310.

Robertson, 1891a, pp. 569, 581, 587, 593, 594. At *Asclepias verticillata*, *Ipomæa pandurata*, *Convolvulus sepium*, *Scrophularis nodosa marilandica*, *Veronica virginica*, and *Seymaria macrophylla*.

Robertson, 1894, pp. 451, 452, 463, 469, 473, 476. Macoupin County, ILLINOIS; at *Vernonia fasciculata* (printed *noveboracensis* but changed by the author in copies sent out), *Eupatorium purpureum*, *Silphium laciniatum*, *Lepachys pinnata*, *Coreopsis aristosa*, and *Cnicus lanceolatus*.

Robertson, 1896, pp. 162, 176, 178. Carlinville, ILLINOIS; at *Astragalus canadensis*, *Silphium perfoliatum*, and *Cacalia reniformis*.

Cockerell, 1899c, p. 3. Baldwin, Douglas County, KANSAS; (Bridwell).

Harris and Kuchs, 1902, p. 36. Lake View, KANSAS; at *Cassia chamæcrista*.

Cockerell, 1905c, p. 267. Wellsville, KANSAS; (Johnson).

Smith, 1910, p. 693. Staten Island, NEW YORK. New Brunswick, Jamesburg, Westville, Riverton, Merchantville, Collingswood and Winslow, NEW JERSEY. VII, VIII.

Grænicher, 1911, p. 247. Prescott and Maiden Rock, Pierce County, WISCONSIN; VII, VIII.

Viereck, 1916, p. 733. New Haven and Westville, CONNECTICUT; VII.

**bimaculata morrilli** Cockerell, 1918b, p. 29. ♀. Tlahualilo, Durango, MEXICO; IX; at squash; (Morrill).

*binotata*. See *bimaculata*.

**bishoppi** Cockerell, 1914*b*, p. 414. ♂. Paris, TEXAS; VIII; at *Helianthus*; (Bishopp).

*bituberculata*. See *Diadasia*.

**blakei** Cockerell, 1905*i*, p. 523. ♀. Beulah, NEW MEXICO; VIII. "Canadian zone."

Cockerell, 1906, pp. 107, 309. Tularosa Creek, NEW MEXICO; X; at *Chrysothamnus graveolus glabrata*. "May prove to be a mountain race of *mizeæ*." "Canadian to Upper Sonoran."

**boltoniæ** Robertson, 1905, p. 368. ♀. Carlinville, ILLINOIS.

Cockerell, 1907*e*, p. 127. Falls Church, VIRGINIA; VIII, IX; (Banks).

Cockerell, 1909, p. 26. Malcolm, NEBRASKA; IX; (Birkman).

*bombiformis*. See *Emphor*.

*brevicornis*. See *Xenoglossa*.

**bruesi** Cockerell, 1906, p. 110. ♀. Fedor, Lee County, TEXAS; V; (Birkman).

**cajennensis** Lepeletier, 1841, p. 94. (*Macrocera*) ♂. FRENCH GUIANA.

*Tetralonia cajennensis* Smith, 1854, p. 307. WEST INDIES.

*californica* Smith, see *smithii*; for that of Cresson, see *Tetralonia*.

**caliginosa** Cresson, 1878*a*, p. 192. ♀\*, ♂. GEORGIA; (Morrison, Ridings).

Smith, 1910, p. 693. Gloucester County, NEW JERSEY; IX; (Fox).

*catalinensis*. See *intermediella catalinensis*.

**carolinensis** Dalla Torre, 1896, p. 228. (*Eucera*) New name for *Tetralonia atrifrons* Smith, 1854, p. 308 (not p. 307). ♀. NORTH CAROLINA.

Smith, 1910, p. 693. Camden County, NEW JERSEY; (Fox).

**chrysothamni** Cockerell, 1905*i*, p. 524. ♀. Embudo on the Rio Grande, NEW MEXICO; IX; at *Chrysothamnus*. 1906, p. 309: "Upper Sonoran."

**civica** Cockerell, 1910, p. 258. ♀. Mexico.

**cnici** Robertson, 1901, p. 230. A new name for the ♂ (not ♀) of *nigripes* Smith, 1854, p. 311; may include the ♀ of *desponsa* Smith, 1854, p. 310 (see Robertson, 1902, p. 49), and is the *desponsa* Robertson, 1897, p. 354. Carlinville, ILLINOIS; at *Monarda fistulosa*.

Grænicher, 1911, p. 247. Randall in Burnett County, Never's Dam and Farmington in Polk County, Hudson in St. Croix County, and Prescott and Maiden Rock in Pierce County, WISCONSIN; VII, VIII. Suggests that these may be *desponsa* Smith.

Robertson, 1914, p. 69. At *Cnicus*.

- colliciata** Cockerell, 1910, p. 257. ♂. MEXICO; (Deppe).
- coloradensis** Cresson, 1878*a*, p. 200. ♀\*, ♂. COLORADO; (Ridings, Morrison).
- Robertson, 1894, pp. 454–476. Macoupin County, ILLINOIS; at *Lacinaria* [*“Liatris”*] *pyncnostachya*, *Silphium laciniatum*, *Helianthus mollis*, *grosseserratus*, and *tuberosus*, and *Cnicus lanceolatus*
- Robertson, 1896, pp. 176–178. Carlinville, ILLINOIS; at *Silphium perfoliatum*, *Heliopsis lavis* and *Rudbeckia laciniata*.
- Robertson, 1898*a*, p. 244. At *Helianthus divaricatus*.
- comanche** Cresson, 1872, p. 276. ♀\*, ♂. TEXAS; (Belfrage, Boll).
- Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.
- communis** Cresson, 1878*a*, p. 204. ♀\*, ♂. GEORGIA. ILLINOIS.
- Cockerell, 1906, p. 92. Bill William’s Fork, ARIZONA; (SNOW).
- Smith, 1910, p. 693. Gloucester County, NEW JERSEY; VII.
- Cockerell, 1914*e*, p. 31. Stone Cabin Canyon, Santa Rita Mountains, ARIZONA; at *Thunberia thespesioides*; VIII; (Pierce).
- See *kallstromiæ phenacoides*.
- composita*. See *lupina composita*.
- compta*. See *Anthedon*.
- comptoides** Robertson, 1898, p. 52. ♀, ♂. Carlinville, ILLINOIS.
- condigna*. See *Florilegus*.
- confusa** Cresson, 1878*a*, p. 205. ♀\*, ♂. COLORADO; (Ridings, Morrison).
- Robertson, 1894, pp. 458–460, 468, 471, 272, and 475. Macoupin County, ILLINOIS; at *Boltonia asteroides*, *Aster novæangliæ* and *paniculatus*, *Rudbeckia triloba*, *Helianthus tuberosus*, *Coreopsis palmata*, and *Helenium autumnale*.
- M. ruidosensis* Cockerell, 1896*b*, p. 305. ♂. Ruidoso Creek, NEW MEXICO; 6400–7500 ft.; VII; at *Pentstemon* and (?) *Eustoma*.
- Robertson, 1896, pp. 175, 176, 178. Carlinville, ILLINOIS; at *Aster ericoides villosis*, *Silphium perfoliatum*, and *Rudbeckia laciniata*.
- Cockerell, 1897*c*, pp. 20, 24. Santa Fé (7000 ft.) and Dripping Spring in Organ Mountains, NEW MEXICO.
- Robertson, 1897, p. 355, makes the ♂ *ruidosensis* Cockerell, 1896*b*, p. 305, a synonym.
- Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.
- M. ruidosensis* Cockerell, 1901*c*, p. 43. At *Vicia*. 1901*a*, p. 130: Beulah and Las Vegas, NEW MEXICO; VII, VIII.
- Viereck, 1902, p. 46. At *Erigeron*.
- Cockerell, 1906, pp. 92, 309. COLORADO. “Canadian to Upper Sonoran.”
- Cockerell, 1906*d*, p. 443. Florissant, Teller County, COLORADO; VII.
- Cockerell, 1911, p. 33. CANADA: Meota, Saskatchewan; Macleod; Radisson; Prince Albert; VII; (Willing).
- confusiformis** Cockerell, 1906*c*, p. 366. ♀. Fedor, Lee County, TEXAS; V\*, IX; (Birkman).

Cockerell, 1914b, p. 409. Goodview, COLORADO; VII; at *Helianthus annuus coronatus*.

Cockerell, 1919c, p. 272. ♂. Gold Hill, COLORADO; 8600 ft.; VII; at *Geranium*.

**coreopsis** Robertson, 1905, p. 368. ♀. Carlinville, ILLINOIS.

Robertson, 1914, p. 69. At *Coreopsis palmata*.

*crenulaticornis*. See *Tetralonia*.

**dagosa** Cockerell, 1909c, p. 128. ♂. Osborn's Ranch, Grand Coulee, WASHINGTON; VII.

*densa*. See *Diadasia enavata densa*.

**denticulata** Smith, 1854, p. 311. ♂. United States.

*M. senilis* Smith, 1854, p. 311. ♀. Mount Pleasant, OHIO.

*M. senilis* Provancher, 1888, p. 301. Cap Rouge, Ottawa; CANADA; (Guignard).

**dentiventris** Smith, 1854, p. 312. ♂. GEORGIA.

Provancher, 1888, p. 299. ♂, ♀. Cap Rouge, Ottawa, CANADA; (Guignard).

Robertson, 1894, pp. 463, 467, 469-471, 473-476. Macoupin County, ILLINOIS; at *Silphium integrifolium*, *Rudbeckia hirta*, *Lepachys pinnata*, *Helianthus grosseserratus* and *tuberosus*, *Coreopsis tripteris* and *aristosa*, *Bidens chrysanthemoides*, *Helenium autumnale*, and *Cnicus lanceolatus*.

Robertson, 1896, pp. 176-178. Carlinville, ILLINOIS; at *Silphium perfoliatum*, *Heliopsis laevis*, and *Rudbeckia laciniata*.

Robertson, 1897, p. 355, considers *dentiventris* Provancher, 1888, p. 299, = *pennsylvanica*, but see *trinoodis*; and, 1898, p. 53, says that his *dentiventris* of 1897 = *americana* Lepeletier; but, 1901, p. 230 (see also 1902, p. 49) says that Lepeletier's, 1841, p. 92, description of *Macrocera americana* is too poor to justify its use and he uses *dentiventris*, making *desponsa* Smith a doubtful synonym.

Smith, 1910, p. 693. Gloucester County and Da Costa, NEW JERSEY; VII, VIII.

Viereck, 1916, p. 732. Branford, Westville, and Rockville, CONNECTICUT; VIII; at *Veronica*.

Cockerell, 1917e, p. 212. Falls Church, VIRGINIA; at *Helianthus annuus zonatus*.

See *americana*.

**desponsa** Smith, 1854, p. 310. ♀. OHIO.

Provancher, 1882, p. 174. St. Fargeau, MONTREAL; (Couper).

Robertson, 1894, pp. 455, 459, 470, 473, 475. Macoupin County, ILLINOIS; at *Solidago canadensis*, *Aster novaeangliae*, *Helianthus grosseserratus*, *Coreopsis aristosa*, and *Cnicus altissimus* (also var. *discolor*) and *lanceolatus*.

Dalla Torre, 1896, p. 231, makes *nigripes* Smith a synonym.

Viereck et al., 1905, p. 320. Corvallis, OREGON; III.

Lovell and Cockerell, 1906, p. 109. Waldoboro, MAINE; VII-IX; at *Carduus odoratus* and *arvensis*, *Pontederia cordata*, *Inula helenium*, and *Solidago*.

Smith, 1910, p. 693. Orange Mountains, Lucaston, and Clementon, New JERSEY; IX, X.

Viereck, 1916, p. 732. Colebrook and New Haven, CONNECTICUT; VII, VIII. Makes *cnici* Robertson a synonym.

See *cnici* and *dentiventris*.

**desponsiformis** Cockerell in Viereck *et al.*, 1905, pp. 319-321. ♀. CORVALIS, OREGON; (Cordley).

*dilecta*. See *Tetralonia*.

*diminuta*. See *Diadasia*.

*donata*. See *Tetralonia*.

**dubitata** Cresson, 1878a, p. 194. ♀\*, ♂. Georgia; (Ridings, Morrison).

Cockerell, 1911, p. 34, and 1912d, p. 263, says that *dubitata* is a valid species of *Melissodes*, although the name has been used (e. g. Robertson, 1900, p. 54) as a synonym of *Tetralonia atriventris*.

**duplocincta** Cockerell, 1905g, p. 103. ♂, ♀. Bill William's Fork, ARIZONA; VIII; (Snow).

*edwardsii*. See *Tetralonia*.

*enavata*. See *Diadasia*.

**epicharina** Cockerell, 1905g, p. 99. ♀. Oak Creek Canyon, ARIZONA; 6000 ft.; VII; (Snow).

*exquisita*. See *Xenoglossa fulviventris*.

**festonata** Provancher, 1888, p. 300. ♀, ♂. Cap Rouge, Ottawa, CANADA.

**fimbriata** Cresson, 1878a, p. 203. ♀\*, ♂. TEXAS; (Belfrage).

Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

Smith, 1910, p. 693. Cape May, NEW JERSEY; VI; (Fox).

*flaveriæ*. See *texana flaveriæ*.

**floris** Cockerell, 1896a, p. 290. ♂, ♀. San Rafael, Vera Cruz, MEXICO; III; at *Bidens*; (Townsend).

Cockerell, 1899b, p. 13. Lower part of Rio Nautla, MEXICO.

**foxi** Crawford, 1915, p. 577. ♀\*, ♂. Portland, JAMAICA.

*Melissodes trifasciata* and *mimica* of Fox, 1891, p. 347. Port Antonio and Kingston, JAMAICA.

*frater*. See *Tetralonia*.

**fremontii** Cockerell, 1907c, p. 268. ♂. Florissant, COLORADO; VII; at *Geranium fremontii*; (Rohwer).

*fulvitaris*. See *Tetralonia*.

*fulvohirta*. See *Tetralonia*.

**galvestonensis** Cockerell, 1905f, p. 181. ♀, ♂. Galveston, TEXAS; V; (Snow).

**georgica** Cresson, 1878a, p. 200. ♂. GEORGIA; (Morrison).



- gilensis** Cockerell, 1896*b*, p. 306. ♀, ♂. West Fork of Gila River\* (about 7000 ft.) and La Tenaja (near Santa Fé), NEW MEXICO; VII; (Townsend, Boyle).  
 Cockerell, 1897*c*, p. 24. Dripping Springs, Organ Mountains, NEW MEXICO.  
 Cockerell, 1901*a*, p. 180, and 1901*c*, p. 40. Las Vegas, NEW MEXICO; VII; at *Cleome serrulata* and *Sidalcea neomexicana*; (Porter).  
 Cockerell, 1905, p. 103. San Pedro, CALIFORNIA; VII.  
 Viereck, 1906, p. 238. Oak Creek Canyon, ARIZONA; VIII; (Snow).  
 Cockerell, 1906, pp. 92, 309. COLORADO. Magdalena Mountains, NEW MEXICO; (Snow). "Upper and Lower Sonoran."  
 Cockerell, 1907, p. 397. Clouderoft, NEW MEXICO; VI; (Viereck).
- glenwoodensis** Cockerell, 1905*i*, p. 522. ♀. Glenwood Springs, COLORADO; IX; (Gillette).  
 Cockerell, 1906, pp. 107, 309. Maxwell City, NEW MEXICO; IX; at *Grindelia*; (Mize). Related to *Florilegus condignus*. "Upper Sonoran."
- grandissima** Cockerell, 1905*c*, p. 334. ♀. Fedor, Lee County, TEXAS; (Birkman). 1906*c*, p. 361: ♂.
- grindeliæ** Cockerell, 1898*a*, pp. 66, 67. ♂, ♀. Santa Fé\* and Tuerto Mountain (8875 ft.), NEW MEXICO; VII, VIII; at *Grindelia*, *Lepachys*, and *Rudbeckia*. 1899*d*, p. 256: Las Vegas, NEW MEXICO.  
 Viereck, 1906, p. 238. Oak Creek Canyon, ARIZONA; VII, VIII; (Snow).  
 Cockerell, 1901*a*, p. 130, and 1901*c*, p. 40. Las Vegas Hot Springs, NEW MEXICO; VII, VIII; at *Cleome serrulata*, *Senecio douglasii*, *Helianthus annuus*, *Verbena macdougalii*, *Lepachys columnaris* and *tagetes*, and *Verbesina encelioides*; (Porter).  
 Cockerell, 1905, p. 103. La Jolla, CALIFORNIA; VIII.  
 Cockerell, 1906, pp. 92, 309. Organ Mountains and Pecos, NEW MEXICO; VIII; at *Sphaeralcea fendleri*. "Canadian to Lower Sonoran." "Not quite typ cal" specimens from Oak Creek Canyon, ARIZONA; 6000 ft.; (Snow).  
 Cockerell, 1910, p. 257. MEXICO; (Deppe).
- helensæ** Cockerell, 1906*c*, p. 365. The *M. humilior* var. *a* Cockerell, 1903, p. 447. Las Cruces, NEW MEXICO; VIII; (Townsend). 1906, p. 310: "Middle Sonoran."
- helianthelli** Cockerell, 1905*i*, p. 525. ♀. Mesilla, NEW MEXICO; VI; at *Helianthus ciliaris*. 1906, p. 310: "Middle Sonoran."
- helianthophila** Cockerell, 1914*d*, p. 361. ♂. Boulder, COLORADO; VI; at *Helianthus lenticularis*.
- herricki** Cockerell, 1905*g*, p. 98. ♂, ♀. NEW MEXICO; (Snow).
- hewetti** Cockerell, 1905*i*, p. 527. ♀. Santa Fé, NEW MEXICO; VIII; at *Cleome serrulata*. 1906, p. 309: "Transition" zone.
- hexacantha** Cockerell, 1905*g*, p. 100. ♂. ARIZONA; VIII; (Snow). Varieties at Oak Creek Canyon, ARIZONA; 6000 ft.

**hirsuta** Smith, 1879, p. 116. ♂. Oaxaca, MEXICO.

*Eucera oajacana* Dalla Torre, 1896, p. 242. New name.

Cockerell, 1905e, p. 328. Notes on type.

**hitei** Cockerell, 1908, p. 331. (*M. martini hitei*) ♀. Pueblo, COLORADO; VIII; (Hite).

Cockerell, 1909c, p. 129. ♀. Plano (about 17 miles north of Dallas), TEXAS; X; (Tucker).

*honesta*. See *Tetralonia belfragii*.

**hortivagans** Cockerell, 1905f, p. 180. ♂. Garden City, KANSAS; VIII; (Menke). P. 181: var. *a*; Morton County, KANSAS; 3200 ft.; (Snow).

Cockerell, 1906, p. 107. Keatchie, LOUISIANA; VI; (Newell). Makes *variabilis* Robertson a synonym.

Cockerell, 1906c, p. 360. Fedor, Lee County, TEXAS; V, VI; (Birkman). A partial gynandromorph.

**humilior** Cockerell, 1903, p. 447. ♀. Organ\* (5100 ft.) and Las Cruces, NEW MEXICO; VIII. 1906, p. 309: "Upper Sonoran."

Cockerell, 1914a, p. 286. Rito de Los Frijoles, NEW MEXICO; VIII.

See *helenæ*.

**humilior catalinensis** Cockerell, 1995, p. 102. (*M. intermediella catalinensis*) ♀. Catalina Island, CALIFORNIA; (Davidson).

**hymenoxidis** Cockerell, 1906d, p. 443. ♀. Florissant, Teller County, COLORADO; VII; at *Hymenoxys ligulæflora* and *Chrysopsis*.

Cockerell, 1915, p. 269. Ward, COLORADO; 9200 ft.; VIII.

Cockerell, 1918, p. 160. Tolland, COLORADO; VIII.

**illata** Lovell and Cockerell, 1906, p. 110. ♀, ♂. Waldoboro, MAINE; VII, VIII; at *Epilobium angustifolium*, *Inula helenium*, and *Solidago*.

**illinoensis** Robertson, 1895, p. 126. ♀, ♂. Carlinville, ILLINOIS.

Robertson, 1899, p. 37. At *Lepachys pinnata*.

Robertson, 1914, p. 70. At Helianthoideæ.

**insularis** Crawford, 1914, p. 132. ♂. DOMINICA; (Foote).

**intermedia** Cresson, 1872, p. 278. ♀. TEXAS; (Belfrage).

Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

See *intermediella*.

**intermediella** Cockerell, 1905, p. 102. ♀. Mesilla Valley, NEW MEXICO (*intermedia* Cockerell, 1898a, p. 67). Los Angeles, CALIFORNIA. 1906, pp. 92, 310: "Middle Sonoran"; ARIZONA.

*intermediella catalinensis*. See *humilior catalinensis*.

**intorta** Cresson, 1872, p. 278. ♂. TEXAS; (Belfrage).

Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

*intrudens*. See *Tetralonia*.

**kallstrœmiæ** Cockerell, 1905*h*, p. 216. ♂. Mesilla Park, NEW MEXICO VII; at *Kallstrœmiæ*. 1906, p. 310: "Middle Sonoran."

**kallstrœmiæ phenacoides** Cockerell, 1905*h*, p. 217. ♂. Las Cruces, NEW MEXICO; VIII.

*M. communis* Cockerell, 1898*a*, p. 66. Mesilla Valley, NEW MEXICO.

Cockerell, 1906, pp. 92, 310. "Middle Sonoran." *M. communis*: Bill William's Fork, ARIZONA; (Snow.)

**kelloggi** Cockerell, 1919*b*, p. 293. ♂. Long's Peak Inn, COLORADO; VII.

**labiatarum** Cockerell, 1896*a*, p. 291. ♂. San Rafael and Paso de Telaya, Vera Cruz, MEXICO; III, IV; at a labiate; (Townsend).

Cockerell, 1899*b*, p. 13. Lower part of Rio Nautla, MEXICO.

*lanierii*. See *Florilegus*.

*lata*. See *Tetralonia*.

*lepida*. See *Tetralonia*.

**lœna** Cockerell, 1909*d*, p. 148. ♂. Lee County, TEXAS; XI; (Birkman).

**lupina** Cresson, 1878*a*, p. 210. CALIFORNIA; (H. Edwards).

Cockerell, 1906, pp. 31, 309. Doubts its distinctness from *agilis*. "Upper Sonoran."

Cockerell, 1909*e*, p. 305. Colorado Springs, COLORADO; VIII; (Tucker). Raton, NEW MEXICO. Notes on variation.

**lupina composita** Tucker, 1909, p. 281. ♂. Colorado Springs, COLORADO; VIII.

*luteicornis*. See *Martinella*.

**machœrantheræ** Cockerell, 1904*a*, p. 21. ♂. White Sands, NEW MEXICO; and Buckeye, ARIZONA; IX; at *Machœranthera* and *Cucurbita palmata*. (?) ♀; PHœnix, ARIZONA; X; at *Helianthus annuus*. 1906, p. 310: "Middle and Lower Sonoran."

**manipularis** Smith, 1854, p. 240. ♂. GEORGIA.

Cockerell, 1905*e*, p. 329. Notes on type.

Cockerell, 1907*e*, p. 127. Falls Church, VIRGINIA; IX; at *Eupatorium*; (Banks).

*marginella*. See *Entechnia euglossoides marginella*.

**martini** Cockerell, 1905*i*, p. 526. ♀. Gallinas River at Las Valles, NEW MEXICO; VIII.

Cockerell, 1906, pp. 93, 309. At *Petalostemon oligophyllus*. "Upper Sonoran."

*martini hitei*. See *hitei*.

**martinicensis** Cockerell, 1917*b*, p. 303. ♂. MARTINIQUE; VII; (Busck).

**masuca** Cockerell, 1909*d*, p. 148. ♂. Fedor, Lee County, TEXAS; VI; (Birkman).

Cockerell, 1917*a*, p. 191. Point Isabel and San Benito, TEXAS; at cactus, *Phlox*, and *Parkinsonia aculeata*; (W. P. Cockerell).

**maura** Cresson, 1865, p. 188. ♀. CUBA.

**megacerata** Cockerell, 1906*c*, p. 362. ♂. Fedor, Lee County, TEXAS; X; (Birkman).

**melandri** Cockerell, 1906, p. 109. ♀. Fedor, Lee County, TEXAS; X; (Birkman).

**melanosoma**, Cockerell, 1905*c*, p. 266. ♂. Fedor, Lee County, TEXAS; V; (Birkman).

**menuacha** Cresson, 1868, p. 388. (*menuachus*) ♂. NEW MEXICO\* and COLORADO; (Lewis).

Cresson, 1872, p. 277. TEXAS; (Belfrage, Boll).

Cresson, 1876, p. 209. BOULDER, COLORADO; (Putnam).

Uhler, 1877, p. 783. Canyon City, COLORADO; VIII.

Cockerell, 1893, p. 338. West Cliff, Custer County, COLORADO; V.

(?) Fox, 1893, p. 118. Lower California, MEXICO; (Eisen).

Townsend, 1896, p. 139. Las Cruces, NEW MEXICO.

Cockerell, 1897*d*, p. 138. Santa Fé (7000 ft.), La Junta, and Fremont County, NEW MEXICO; VIII; at *Argemone* (1897*f*, p. 79, sleeping in closed flowers of *A. platyceras*) and *Grindelia*. Not in Mesilla Valley, New Mexico.

Cockerell, 1898*f*, p. 313. Rinconada, NEW MEXICO; at *Bigelovia* [*Chrysothamnus*].

Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

Smith, 1900, p. 693. Camden County, NEW JERSEY; (Fox).

Cockerell, 1903*b*, p. 77. CALIFORNIA.

Viereck *et al.*, 1905, p. 320. OREGON.

Cockerell, 1906, pp. 92, 309. Denver, COLORADO; (Johnson). Las Vegas and Raton, NEW MEXICO. "Transition and Upper Sonoran."

Cockerell, 1906*d*, p. 443. Florissant, Teller County, COLORADO; VII; at *Sidalcea neomexicana*.

Tucker, 1909, p. 282. Colorado Springs, COLORADO; VII.

Cockerell, 1912*d*, p. 271: "Bertoni and Schrottky (1910) state that they have received it [*nigroænea* Smith, 1854] from Texas, labelled *M. menuacha*. A female *nigroænea* received from Schrottky has the facial quadrangle broader and shorter than in *menuacha*. It is from San Juan, Argentina." See *nigroænea*.

**menuacha semilupina** Cockerell, 1905, p. 29. ♂. Los Angeles, CALIFORNIA; (Davidson).

**menuacha submenuacha** Cockerell, 1897*d*, p. 137. ♂. Las Cruces and Collège Farm, NEW MEXICO; IX; at *Helianthus annuus* and *Verbesina enclioides*.

Cockerell, 1898*a*, pp. 66, 73. Albuquerque and Mesilla Valley, NEW MEXICO; IX. 1906, p. 309: "Upper to Middle Sonoran."

**menuacha vernonensis** Viereck *et al.*, 1905, pp. 319, 320. ♀, ♂. Vernon, BRITISH COLUMBIA; VIII; (Harvey).

*M. vernonensis* Cockerell, 1906, p. 78.

**microsticta** Cockerell, in Viereck *et al.*, 1905, pp. 319-321. ♂. Vancouver Island, BRITISH COLUMBIA.

Cockerell, 1906, p. 113. COLORADO.

**mimica** Cresson, 1869, p. 298. (*mimicus*) ♂. CUBA.

Ashmead, 1900, p. 210. GRENADA and ST. VINCENT.

See *foxi*.

**mizeæ** Cockerell, 1905*i*, p. 522. ♀. Las Vegas, NEW MEXICO; VIII; at *Grindelia inornata*; (Mize). "Upper Austral zone." 1906, p. 309: "Upper Sonoran."

Cockerell, 1912*b*, p. 448. Abbott Ranch, Rito de los Frijoles, NEW MEXICO; VIII.

*modesta*. See *Thygater*.

**montana** Cresson, 1878*a*, p. 202. ♀\*, ♂. COLORADO\*, (Ridings). NEW MEXICO; (Lewis).

Townsend, 1896, p. 139. Las Cruces, NEW MEXICO.

Cockerell, 1896*b*, p. 308. West Fork of the Gila, NEW MEXICO; about 7000 ft.; VII; (Townsend).

Cockerell, 1897*c*, pp. 21, 24, 28. Dripping Springs (Organ Mountains) and Mesilla Valley (3800 ft.), NEW MEXICO.

Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

Viereck, 1903*b*, p. 728. San Pedro and La Jolla, CALIFORNIA; VII, VIII; (Cockerell).

Cockerell, 1906, pp. 92, 309. Oak Creek Canyon, ARIZONA; (Snow). "Upper Sonoran."

*montezuma*. See *Thygater*.

**morosa** Cresson, 1878*a*, p. 193. ♀. MEXICO; (Sumichrast).

*morrilli*. See *bimaculata morrilli*.

**mysops** Cockerell, 1905*d*, p. 146. ♂, ♀. Maybell\* and Virginia Dale, COLORADO; VIII; at thistle; (Johnson, Bishopp).

Cockerell, 1907*c*, p. 269. Florissant, COLORADO; VII; at *Carduus aculeolens*.

Cockerell, 1910*d*, p. 128. Near Axial, COLORADO; *Rudbeckia ampla*; (Robbins).

**nevadensis** Cresson, 1874, p. 102, and 1875, p. 726 (not 1879, p. 209; see *Tetralonia intrudens*). ♂. NEVADA; (Yarrow).

Cockerell, 1897*c*, p. 28. Mesilla Valley, NEW MEXICO; 3800 ft.

*nigra*. See *bimaculata*.

*nigricornis*. See *Tetralonia*.

*nigrifrons*. See *Diadasia*.

**nigripes** Smith, 1854, p. 311. ♀. United States. For his ♂, see *cnici*.

Provancher, 1888, p. 300. Cap Rouge, Ottawa, CANADA.

*Synhalonia nigripes* Robertson, 1895, p. 126.

Dalla Torre, 1896, p. 231, makes it a synonym of *desponsa* Smith.

Robertson, 1900, p. 53, considers that Smith's, 1854, p. 311, ♀ (not ♂) *Emphor bombiformis* belongs here.

Smith, 1910, p. 693. Newark, New Brunswick, Jamesburg, Lahaway, Prospertown, Riverton, and Westville, NEW JERSEY; V, VI.

*nigripes*. See *Emphor*.

**nigrosæna** Smith, 1854, p. 305. (*Tetralonia*) ♀. BRAZIL.

Cockerell, 1912*d*, p. 271. San Juan, ARGENTINA. See *menuacha*.

*Tetralonia nigrosæna* Friese, 1916, p. 295. San José, COSTA RICA; (Schmidt).

**nigrosignata** Cockerell, 1905*g*, p. 101. ♀. Oak Creek Canyon, ARIZONA; 6000 ft.; VIII; (Snow).

Cockerell, 1906, pp. 109, 309. San Ignacio, NEW MEXICO; VIII; (W. P. Cockerell). "Upper Sonoran."

**nigrosignata pallidesignata** Cockerell, 1905*f*, p. 180. ♀. Oak Creek Canyon, ARIZONA; 6000 ft.; VIII; (Snow).

**nivea** Robertson, 1895, p. 127. ♀. Carlinville, ILLINOIS. 1896, p. 175: at *Aster ericoides villosus*. 1897, p. 354, describes the ♂. 1898, p. 53, suggests that it may be *snowii*.

Robertson, 1898*a*, pp. 230, 244. At *Lespedeza reticulata* and *Helianthus divaricatus*.

Cockerell, 1907*e*, p. 128. Falls Church, VIRGINIA; IX; (Banks).

*oajacena*. See *hirsuta*.

**obliqua** Say, 1837, p. 403. (*Macrocera*) ♂. INDIANA.

Cresson, 1872, p. 275. TEXAS; (Belfrage, Boll, Heiligbrodt).

Robertson, 1891*a*, p. 573. At *Asclepias cornuti*.

Robertson, 1894, pp. 451-476. Macoupin County, ILLINOIS; at *Vernonia fasciculata* (printed *noveboracensis* but changed by the author in copies sent out), *Lacinaria* ["*Liatris*"] *pyncnostachya*, *Solidago missouriensis*, *Silphium integrifolium*, *Echinacea purpurea* (tried in vain to collect pollen), *Rudbeckia hirta* and *triloba*, *Lepachys pinnata*, *Helianthus mollis*, *grosseserratus*, *strumosus*, and *tuberosus*, *Verbesina helianthoides*, *Coreopsis tripteris*, and *Cnicus altissimus discolor* and *lanceolatus*.

Robertson, 1896, pp. 176-178. Carlinville, ILLINOIS; at *Silphium perfoliatum*, *Heliopsis laevis* and *Rudbeckia laciniata*.

Townsend, 1896, p. 140. Las Cruces, NEW MEXICO.

Cockerell, 1896, p. 305. Santa Fé, NEW MEXICO; at *Cleome serrulata*.

Cockerell, 1897*c*, p. 28. Mesilla Valley, NEW MEXICO; 3800 ft.

- Robertson, 1898a, p. 244. At *Helianthus divaricatus*.  
 Cockerell, 1899, p. 157. Mesilla Valley, NEW MEXICO; VII; (Barber).  
 Cockerell, 1899c, p. 3. Baldwin, Douglas County, KANSAS; (Bridwell).  
 Birkman, 1899, p. 245. Fedor, Lee County, TEXAS; V; (See Cockerell, 1905c, p. 335).  
 Cockerell, 1903b, p. 77. CALIFORNIA.  
 Cockerell, 1904, p. 8. Pecos, San Miguel County, NEW MEXICO; VIII.  
 Robertson, 1905, p. 368. Carlinville, ILLINOIS.  
 Cockerell, 1906, p. 309. Las Vegas, Pecos, and Raton, NEW MEXICO  
 "Transition to Middle Sonoran."  
 Tucker, 1909, p. 278. Lawrence and Wichita, KANSAS; VII, VIII.  
 Smith, 1910, p. 693. Camden County, NEW JERSEY.  
 Gränicher, 1911, p. 247. Hudson in St. Croix County, and Prescott and Maiden Rock in Pierce County, WISCONSIN; VII, VIII; at *Lepachys pinnata*, *Rudbeckia hirta*, and *R. laciniata*.  
 Cockerell, 1911, p. 390. Sterling, COLORADO; VIII; at *Helianthus*.  
 Cockerell, 1914b, p. 411. Clarendon, TEXAS; VIII; (Jones).

*olivacea*. See *Dasiapis*.

**opuntiella** Cockerell, 1911, p. 131. ♂\*, ♀. Brownsville\*, Hondo, and Cotulla, TEXAS; III-IV; at *Opuntia lindheimeri*; (Jones, Pratt, Mitchell, Crawford).

**otomita** Cresson, 1878a, p. 209. ♂. MEXICO; (Sumichrast).

**pallida** Robertson, 1895, p. 127. ♀. Carlinville, ILLINOIS.

**pallidicincta** Cockerell, 1896b, p. 306. ♀. West Fork at Gila\* River, Santa Fé, and Watrons, NEW MEXICO; VI, VII; at alfalfa.

Cockerell, 1897c, p. 22. Pinos Altos (at hollyhock) and, in Organ Mountains, Dripping Springs and Soledad Canyon, NEW MEXICO.

Cockerell, 1901a, p. 130, and 1901c, pp. 40, 43. Las Vegas and Romersville, NEW MEXICO; VII; at *Cleome serrulata*, *Trifolium repens*, *Malvastrum dissectum*, *Sidalcea neomexicana*, *Verbena macdougalii*, *Sphaeralcea lobata*, *Asclepias verticillata*, and *Lycium vulgare*; (Stern).

Cockerell, 1904, p. 8. Pecos, San Miguel County, NEW MEXICO; VI; asleep in *Pentstemon* flowers in rainy weather; (Grabham).

Cockerell, 1906, pp. 92, 109, 309. Bill William's Fork and Oak Creek Canyon, ARIZONA; (Snow.) Boulder, COLORADO; VII; at *Opuntia*; (W. P. Cockerell). Magdalena Mountains (Snow) and Gibson (Gohrman), NEW MEXICO. Clark County, KANSAS; 1962 ft.; (Snow). "Transition to Upper Sonoran."

Cockerell, 1906d, p. 443. Florissant and east of Lake George, COLORADO; VI, VII; at *Iris missouriensis*, *Crepis runcinata*, and *Senecio*.

Cockerell, 1907, p. 397. Alamogordo, Cloudcroft, and Highrolls, NEW MEXICO; V, VI; (Viereck).

See *tristis*.

*pallidisignata*. See *nigrosignata pallidisignata*.

*palustris*. See *Florilegus condigna*.

- paroselæ** Cockerell, 1905*i*, p. 528. ♂. Mesilla, NEW MEXICO; VII; at *Parosela scoparia*. 1906, p. 310: "Middle Sonoran."
- pecosella** Cockerell, 1905*f*, p. 179. ♀. Pecos, NEW MEXICO; (W. P. Cockerell). 1906, p. 309: "Upper Sonoran."
- pecosella verbesinarum*. See *Xenoglossodes excurrens*.
- pennsylvanica** Lepeletier, 1841, p. 97. (*Macrocera*) ♂. PENNSYLVANIA.  
Smith, 1854, p. 312.  
Cresson, 1872, p. 280. TEXAS; (Belfrage).  
Uhler, 1877, p. 783. Canyon City, COLORADO; VIII.  
Robertson, 1897, p. 355, makes *dentiventris* Provancher, 1888, p. 299, a synonym, but see *trinodis*.  
Robertson, 1898*a*, p. 244. Carlinville (?), ILLINOIS; at *Helianthus divaricatus*.  
Smith, 1910, p. 693. NEW JERSEY; (Beutenmüller).
- pernigra** Cockerell, 1896*a*, p. 289. ♂. San Rafael and Paso de Telaya, Vera Cruz, MEXICO; III; at *Ipomæa*; (Townsend).  
Cockerell, 1899*b*, p. 13. Lower part of Rio Nautla, MEXICO.
- perplexa** Cresson, 1878*a*, p. 206. ♀\*, ♂. Georgia\*; (Morrison). TEXAS; (Belfrage).  
Robertson, 1891*a*, p. 582, 596, 597. Carlinville, ILLINOIS; at *Datura tatula*, *Gerardia purpurea*, and *tenuifolia*.  
Robertson, 1894, pp. 451-475. Macoupin County, ILLINOIS; at *Vernonia fasciculata* (printed *noveboracensis* but changed by author in copies sent out), *Solidago missouriensis canadensis* and *lanceolata*, *Aster novæangliæ* and *paniculatus*, *Rudbeckia hirta* and *triloba*, *Lepachys pinnata*, *Helianthus grosseserratus*, *Coreopsis aristosa*, *Bidens chrysanthemoides*, and *Helenium autumnale*.  
Robertson, 1896, pp. 176, 177. Carlinville, ILLINOIS; at *Silphium perfoliatum* and *Heliopsis lævis*.  
Cockerell, 1899*c*, p. 3. Baldwin, Douglas County, KANSAS; (Bridwell).  
Viereck, 1903*a*, p. 119. College Park, MARYLAND; IX.  
Smith, 1910, p. 693. Newark, Riverton, Manumuskin, and Belleplain, NEW JERSEY VIII, IX.  
Viereck, 1916, p. 732. East Hartford, Hartford, and Salisbury, CONNECTICUT; VIII.
- personatella** Cockerell, 1901, p. 297. ♂. La Jolla, San Diego County, CALIFORNIA; VIII.
- petalostemonis** Robertson, 1900, p. 53. Carlinville, ILLINOIS.
- petulca** Cresson, 1878*a*, p. 201. ♀. GEORGIA; (Morrison).  
Cockerell, 1906, p. 92. Fedor, Lee County, TEXAS; V; (Birkman).
- petulca suffusa** Cresson, 1878*a*, p. 203. (*M. suffusa*) ♀\*, ♂. TEXAS; (Belfrage, Heiligbrodt).  
*M. suffusa* Fox, 1893, pp. 21, 118. San José del Cabo and Mesa Verde, Lower California, MEXICO; X; (Eisen).



*M. suffusa* Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

Cockerell, 1906, p. 92. Flagstaff, ARIZONA; VIII; (Snow).

Cockerell, 1906c, p. 360. V, VI.

*M. suffusa* Cockerell 1914a, p. 286, and 1914b, p. 414 (♂ var.). Falfurrias; TEXAS; V; at *Helianthus*; (Morgan).

**petulciformis** Cockerell, 1906c, p. 364. ♀. Fedor, Lee County; TEXAS; VI; (Birkman).

*phenacoides*. See *kallstræmiæ phenacoides*.

**philadelphica** Lepeletier, 1841, p. 110. (*Macrocera*) ♂. PENNSYLVANIA.

Smith, 1854, p. 312.

**pimella** Cockerell, 1906c, p. 363. ♂. ARIZONA.

**pinguis** Cresson, 1878a, p. 216. ♀\*, ♂. MEXICO; (Sumichrast).

Cockerell, 1897b, p. 157. San Rafael and Paso de Telaya, Vera Cruz, MEXICO; III, IV; at *Sida*; (Townsend). New description of ♀.

Cockerell, 1899b, p. 13. Lower part of Rio Nautla, MEXICO.

**pinguis velutinella** Cockerell, 1897b, p. 158. ♂. San Rafael, Vera Cruz, MEXICO; III; at *Sida*; (Townsend).

**prælauta** Cockerell, 1905g, p. 102. ♂. Oak Creek Canyon, Arizona; 9000 ft.; (Snow).

*pruinosa*. See *Xenoglossa*.

**pullata** Cresson, 1865, p. 189. ♀\*, ♂. CUBA.

*pygmæa*. See *Exomalopsis*.

**raphaelis** Cockerell, 1896a, p. 292. ♂. San Rafael, Vera Cruz, MEXICO; III; at *Ipomæa*; (Townsend).

Cockerell, 1899b, p. 13. Lower part of Rio Nautla, MEXICO.

Cockerell, 1912b, p. 28. Quirigua, GUATEMALA, II; at *Ipomæa sidæfolia*; (W. P. Cockerell).

**rivalis** Cresson, 1872, p. 277. ♂. TEXAS; (Belfrage, Boll.).

**robustior** Cockerell, 1915b, p. 482. ♀, ♂. Berkeley and (♂) Los Angeles, CALIFORNIA; VIII; at *Helianthus annuus* and *lenticularis*.

*rubricata*. See *Thygater*.

**rufodentata** Smith, 1854, p. 314. ♂. ST. VINCENT; (Smith).

*ruidosensis*. See *confusa*.

**rústica** Say, 1837, p. 406. (*Macrocera*) ♂, ♀. INDIANA.

Smith, 1854, p. 309.

Patton, 1879, p. 472. Cites this species as the type of *Melissodes*.

Provancher, 1888, p. 300. Ottawa, CANADA; (Guignard).

Evans, 1896, p. 13. Sudbury, ONTARIO.

Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.

Viereck, 1903a, p. 119. College Park, MARYLAND; IX.

Smith, 1910, p. 693. Newark, Trenton, and Westville, NEW JERSEY; IX.

"Mr. Viereck suggests that this may be the same as *simillima* Robertson."

Grænicher, 1911, p. 247. St. Croix Dam in Douglas County; mouths of Nemakagon and Yellow Rivers, Swiss, and Randall in Burnett County; Farmington in Polk County; Hudson in St. Croix County; and Maiden Rock in Pierce County; WISCONSIN; VII, VIII.

Viereck, 1916, p. 732. Rockville and Stafford, CONNECTICUT; VIII; at *Solidago*. Makes *simillima* Robertson a synonym.

*sandiarum*. See *atrifera sandiarum*.

**saponellus** Cockerell, 1908a, p. 234. ♀. Soap Lake, Grand Coulee, WASHINGTON; VI; (Melander). Suggests that it may be *Xenoglossodes*.

**semiagilis** Cockerell, 1906c, p. 364. (*M. agilis semiagilis*) ♂. Fedor, Lee County, TEXAS; V\*, X.

Cockerell, 1914b, p. 413. ♀. Quanah\*, INDIAN TERRITORY [Texas ?]; VI; at *Helianthus*; (Mitchell). Dallas, TEXAS; IX; (Bishopp).

Cockerell, 1919c, p. 27. ♂. Boulder, COLORADO; X; at *Helenium*.

*semilupina*. See *menuacha semilupina*.

**semitristsis** Cockerell, 1905g, p. 102. ♂. Oak Creek Canyon, ARIZONA; 6000 ft.; VII; (Snow).

*senilis*. See *denticulata*.

**simillima** Robertson, 1897, p. 355. Carlinville, ILLINOIS.

Robertson, 1898a, p. 244. At *Helianthus divaricatus*.

Lovell and Cockerell, 1906, p. 111. Waldoboro, MAINE; VIII, IX; at *Carduus arvensis* and *Solidago*.

Robertson, 1914, p. 70. At Helianthoideæ and Asteroideæ.

See *rustica*.

**smithii** Dalla Torre, 1896, p. 247. (*Eucera*) New name for *Melissodes californica* Smith, 1879, p. 114, not Cresson. ♀, ♂. CALIFORNIA.

Cockerell, 1905e, p. 328. Notes on type.

**snowii** Cresson, 1878a, p. 211. ♂. COLORADO; (Snow).

Robertson, 1898, p. 53. Suggests that *nivea* may be a synonym.

*M. agilis snowii* Tucker, 1909, p. 278. Denver, COLORADO; VIII.

*speciosa*. See *Tetralonia*.

**sphæralceæ** Cockerell, 1896b, p. 304. ♂. Santa Fé, NEW MEXICO; VII; at *Sphæralcea angustifolia*.

Cockerell, 1904, p. 8. Pecos, San Miguel County, NEW MEXICO; VIII; at *Sphæralcea fendleri*; nest. 1906, p. 309: "Transition to Upper Sonoran."

**spissa** Cresson, 1872, p. 280. ♀. TEXAS; (Belfrage).

*stearnsi*. See *Exomalopsis*.

*strenua*. See *Xenoglossa*.

*stretchii*. See *Tetralonia*.

**suavis** Cresson, 1878a, p. 210. ♀. COLORADO; (Morrison).

- subagilis*. See *agilis subagilis*.
- submenuacha*. See *menuacha submenuacha*.
- suffusa*. See *petulca suffusa*.
- sumichrasti*. See *Diadasia*.
- tenuitarsis** Cockerell, 1905g, p. 99. ♂. ARIZONA; VIII; (Snow).
- tepaneca** Cresson, 1878a, p. 211. ♀\*, ♂. MEXICO; (Sumichrast).
- tepaneca aschenborniana** Cockerell, 1912b, p. 28. ♂. Gualan, GUATEMALA; at *Vernonia aschenborniana*; (W. P. Cockerell).
- tepida** Cresson, 1878a, p. 210. ♀. NEVADA; (Edwards).  
Cockerell, 1903b, p. 77. CALIFORNIA.
- texana** Cresson, 1872, p. 276. ♀, ♂\*. TEXAS; (Belfrage, Boll).  
Uhler, 1877, p. 783. Colorado Springs, COLORADO; VIII.  
Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.
- texana flaveriæ** Cockerell, 1906, pp. 108, 310. ♀. Roswell, NEW MEXICO; VIII, IX; at *Flaveria angustifolia*. "Middle Sonoran."
- thelypodii** Cockerell, 1905i, p. 527. ♀. La Cueva, Organ Mountains, NEW MEXICO; about 5300 ft.; at *Thelypodium linearifolium*; IX; (Townsend).  
Cockerell, 1906, pp. 107, 309. Las Cruces, NEW MEXICO; VIII; at *Ipomæa meridana*. "Upper to Middle Sonoran."
- thurberiæ** Cockerell, 1914e, p. 31. ♀. Stone Cabin Canyon, Santa Rita Mountains, ARIZONA; at *Thurberia thespesioides*; VIII; (Pierce).
- toluca*. See *Entechnia*.
- townsendi** Cockerell, 1896b, p. 304. ♂. La Cruces, NEW MEXICO; VIII; (Townsend).  
Cockerell, 1897c, p. 28. Mesilla Valley, NEW MEXICO; 3800 ft. 1906, p. 310: "Middle Sonoran."
- trifasciata** Cresson, 1878a, p. 208. ♀. PORTO RICO; (Klug).  
See *foxi*.
- trifasciatella** Ashmead, 1900, p. 210. ♀. Kingstown, ST. VINCENT.
- trinodis** Robertson, 1901, p. 231. A new name for *pennsylvanica* Robertson, 1897, p. 355. Carlinville, ILLINOIS.  
Smith, 1910, p. 693. Chester, NEW JERSEY; IX.  
Grænicer, 1911, p. 247. Mouth of Yellow River and Randall in Burnett County, Farmington in Polk County, and Hudson in St. Croix County, WISCONSIN; VII, VIII.
- tristis** Cockerell, 1894, p. 234. ♂. Las Cruces, NEW MEXICO; VIII.  
Cockerell, 1896b, p. 304. ♂. Mesilla Valley and San Marcial, NEW MEXICO.  
Cockerell, 1897c, p. 24. Dripping Springs, Organ Mountains, NEW MEXICO.

Cockerell, 1899, p. 156. Mescalero Indian Agency on Tularosa Creek, NEW MEXICO; VII; (Barber).

Cockerell, 1900b, p. 218. Juarez, MEXICO; X; at *Ipomœa mexicana*.

Cockerell, 1901c, p. 40. Las Vegas, NEW MEXICO; VII; at *Cleome serulata*. Probably the ♂ of *pallidicincta*.

Cockerell, 1906, pp. 92, 309. Oak Creek Canyon, ARIZONA; (Snow). Magdalena Mountains (Snow) and Raton, NEW MEXICO. "Upper to Middle Sonoran."

Cockerell, 1907, p. 397. Alamogordo and Highrolls, NEW MEXICO; V, VI; (Viereck).

**tristis malvina** Cockerell, 1902a, p. 177. ♂. Cerro Chilicote, Chihuahua, MEXICO; III; at (?) *Sidalcea*.

**tuckeri** Cockerell, 1909c, p. 129. ♀. Plano (about 17 miles N. of Dallas), TEXAS; X; (Tucker).

*ursina*. See *Diadasia enavata*.

**variabilis** Robertson, 1905, p. 368. ♀, ♂. Carlinville, ILLINOIS. See *horitvagans*.

*velutinella*. See *pinguis velutinella*.

*verbesinarum*. See *pecosella verbesinarum*.

*vernonensis*. See *menuacha vernonensis*.

**vernoniæ** Robertson, 1902, p. 323. ♀, ♂. Carlinville (?), ILLINOIS.

Cockerell, 1909, p. 26. Malcolm, NEBRASKA; IX; Birkman).

Grænicher, 1911, p. 247. Hudson in St. Croix County, and Prescott and Maiden Rock in Pierce County, WISCONSIN; VII, VIII; at *Vernonia*.

**vernoniana** Robertson, 1905, p. 368. ♀, ♂. Carlinville, ILLINOIS.

Robertson, 1914, p. 69. At *Veronnia*.

**wheeleri** Cockerell, 1906, p. 111. ♀. Fedor, Lee County, TEXAS; V; (Birkman). 1906c, p. 367: ♂.

**wickhami** Cockerell, 1906, p. 112. ♀. Fedor, Lee County, TEXAS; V; (Birkman).

**xanthopteralis** Cockerell, 1906c, p. 362. ♂. Fedor, TEXAS; V; (Birkman).

#### *Peponapis*

See *Xenoglossa*.

#### *Synhalonia*

Emended to *Synalonia* by Robertson, 1905, p. 365. See *Tetralonia*.

#### **TETRALONIA** Spinola, 1838, p. 538

As indicated elsewhere, we are using in this list the names most in use at present but it is not out of place to point out certain difficulties.

Spinola proposed the above name in the first paragraph of his description of *basizona*, substituting it for Latreille's, 1825, p. 464, *Macrocera*, preoccupied by Meigen in Diptera. In the last paragraph of his discussion of *basizona* he raises the question as to *ruficornis* belonging here. He had apparently not seen *ruficornis*. It would seem logical to consider *basizona* as the type of the genus. The other species included by Spinola were *atricornis*, *grohmanni*, and *tarsata*. Patton, 1879, p. 472, gave *Macrocera antennata* Lepeletier = *Eucera antennata* Fabricius = *Apis malva* Rossi as the type of *Tetralonia* but, as Spinola did not originally include this, Patton was not in order—or would not now be. See also Cockerell, 1906, p. 105, and 1912*d*, p. 262.

Dalla Torre and Friese, 1895, p. 56, make *Tetralonia* a subgenus of *Eucera*. See also Dalla Torre, 1896, p. 223. Much of the recent literature has considered *Tetralonia* as a distinct genus with *Synhalonia* Patton, 1879 (type: *fulvitaris*), and *Eusynhalonia* Ashmead, 1899 (type: *edwardsii*), as synonyms. There is considerable confusion with *Xenoglossa* and this is probably the case in Friese's 1916 paper.

Robertson, 1905, p. 366, gives keys to Illinois species under the name *Synalonia* (emended *Synhalonia*). Cockerell, 1912*d*, gives an annotated list and, 1914*a*, p. 284, a key.

**acerba** Cresson, 1879, p. 210. (*Melissodes*) ♀. NEVADA; (Morrison).

*Synhalonia acerba* Patton, 1879, p. 474. Suggests that it may be the ♀ of *edwardsii* Cresson.

*Synhalonia acerba* Fowler, 1899, p. 138. Berkeley and San Mateo County, CALIFORNIA; IV, V (Fowler, 1902, p. 321); at *Brassica campestris* and *Ranunculus californicus*.

*Anthophora urbana* (misprint for *Synhalonia acerba*) Cockerell, 1905, p. 31. Los Angeles, CALIFORNIA; (Davidson).

**actuosa** Cresson, 1878*a*, p. 208. (*Melissodes*) ♀. CALIFORNIA; (H. Edwards).

*Melissodes actuosa* Cockerell, 1905, p. 30. ♂. Lancaster, CALIFORNIA; (Davidson).

*Synhalonia actuosa* Viereck *et al.*, 1905, p. 318. ♂. Corvallis, OREGON; V, VII.

Bray, 1917, p. 94. Claremont, CALIFORNIA; (Baker).

**albicans** Provancher, 1896, p. 27. (*Synhalonia*) ♂. Los Angeles, CALIFORNIA; (Coquillett).

*Synhalonia albicans* Fowler, 1902, p. 321. San Gabriel, CALIFORNIA; VI. Cockerell, 1906, p. 101.

**albopilosa** Fowler, 1899, p. 138. (*Synhalonia*) ♂. Berkeley, CALIFORNIA; IV; at *Ranunculus californicus*.

Cockerell, 1906, p. 101.

*analis*. See *Thygater*.

*angustior*. See *edwardsii*.

**annæ** Cockerell, 1906, p. 114. ♀. Gibson, NEW MEXICO; IX; (Anna Gohrman).

*apiculata*. See *Xenoglossa*.

*aragalli*. See *frater aragalli*.

**argyrophila** Cockerell, 1909*d*, p. 147. ♂. Lee County, TEXAS; III; (Birkman).

**astragalina** Cockerell, 1905*a*, p. 271. (*Synhalonia*) ♂. Boulder, COLORADO; VI; at *Astragalus*; (W. P. Cockerell).

Cockerell, 1906, p. 101.

*atrifrons*. See *Melissodes carolinensis*.

**atriventris** Smith, 1854, p. 310. (*Melissodes*) ♂. "North America?"

*Synhalonia atriventris* Cresson, 1887, p. 305.

*Synhalonia atriventris* Robertson, 1891*a*, pp. 581, 591. At *Mertensia virginica* and *Pentstemon lævigatus digitalis*.

*Synhalonia atriventris* Robertson, 1897, p. 353. Carlinville and Algonquin, ILLINOIS. These localities are probably correct although the synonymy is wrong; see Cockerell, 1912*d*, pp. 263, 268, 271.

Cockerell, 1906, p. 101. Eastern States.

*Synhalonia atriventris* Britton and Viereck, 1906, pp. 210 and 217. CONNECTICUT; at *Ribes oxycanthoides* and *Pyrus malus*.

Smith, 1910, p. 693. New Brunswick, Jamesburg, and Clementon, NEW JERSEY; V.

*Synhalonia atriventris* Robertson, 1914, p. 73. Carlinville, ILLINOIS; at Papilionaceæ.

Viereck, 1916, p. 733. New Haven, Westville, and Branford, CONNECTICUT; V.

See *illinoensis* and *robertsoni* and *Melissodes dubitata*.

*atriventris fuscipes*. See *robertsoni*.

**barticeps** Friese, 1916, pp. 295, 311. ♂. San José, COSTA RICA; (Schmidt).

**belfragii** Cresson, 1872, p. 278. (*Melissodes*) ♀. Bosque County, TEXAS\*; (Belfrage).

*Melissodes honesta* Cresson, 1872, p. 279. ♂. Bosque County, TEXAS\*.

*Melissodes honesta* Cresson, 1876, p. 209. Green River, WYOMING; (Putnam).

*Synhalonia honesta* Patton, 1879, p. 474.

*Synhalonia honesta* Robertson, 1891*a* pp. 578, 579, 581, 589, 591. At *Polemonium reptans*, *Hydrophyllum appendiculatum*, *Mertensia virginica*, *Collinsia verna*, and *Pentstemon pubescens* and *lævigatus digitalis*.

*Synhalonia belfragei* Robertson, 1895, p. 126. ILLINOIS.

*Synhalonia belfragei* Robertson, 1896, p. 160. Carlinville, ILLINOIS; at *Æsculus glabra*.

*Synhalonia honesta* Birkman, 1899, p. 245. Fedor, Lee County, TEXAS.  
Cockerell, 1906b, p. 279. On p. 101 he unites *belfragii* and *honesta* on the authority of Robertson.  
See *fowleri* and *virgata*.

**bifasciata pallescens** Friese, 1916, pp. 295, 329. ♀. San José, COSTA RICA; (Schmidt).

**birkmanniella** Cockerell, 1906, pp. 93, 101. ♂. Fedor, Lee County, TEXAS; IV; (Birkman).

*brevicornis*. See *Xenoglossa*.

**californica** Cresson, 1878a, p. 196. (*Melissodes*) ♂. CALIFORNIA; (H. Edwards).

*Synhalonia californica* Cockerell, 1904, p. 235.  
Cockerell, 1906, p. 101.  
See *fowleri*.

*cajennensis*. See *Melissodes*.

**chrysobotryæ** Cockerell, 1908, p. 332. ♀, ♂. Boulder, COLORADO; V; at *Ribes* or *Chrysobotrya*; (Hite).

**chrysophila** Cockerell, 1914a, p. 284. ♀. Las Vegas, NEW MEXICO; V; at *Ribes aureum*.

**cordleyi** Viereck, 1905, p. 316. (*Synhalonia*) ♀, ♂. Corvallis, OREGON; V-VII.

Cockerell, 1906, p. 101.

**cordleyi orophila** Cockerell, 1914a, p. 284. ♀. Boulder, COLORADO; VI.

**costaricensis** Friese, 1916, pp. 295, 329. ♂, ♀. San José, and San Mateo, COSTA RICA; (Schmidt).

**crenulaticornis** Cockerell, 1898, p. 454. (*Melissodes*) ♂. Prude's Summit\*, Rio Ruidoso, NEW MEXICO; VII, VIII; at *Geranium atropurpureum*. *Melissodes crenulaticornis maculata* Cockerell, 1898, p. 455. ♂. Big Rock\*, Ruidoso, NEW MEXICO; VII; at *Vicia*; (Townsend).

*Melissodes crenulaticornis* Cockerell, 1899, pp. 156, 157. Mescalero Indian Agency on Tularosa Creek and the Forks of Ruidoso Creek, NEW MEXICO; VII; (Barber).

*Synhalonia crenulaticornis* Cockerell and Porter, 1899, p. 410.

Cockerell, 1906, pp. 97, 101, and Viereck, 1906, p. 242, Manitou Park, COLORADO; (Snow).

*crenulaticornis lippiaæ*. See *Xenoglossodes lippiaæ*.

**cressoniana** Cockerell, 1905f, p. 177. (*Synhalonia*) ♀. TEXAS; (Cresson Coll.).

Cockerell, 1906, p. 101. TEXAS.

Cockerell, 1909, p. 26. Malcolm, NEBRASKA; IX; at *Salvia*; (Birkman).

**dilecta** Cresson, 1878a, p. 199. (*Melissodes*) COLORADO\*; (Ridings). Bosque County, TEXAS; (Belfrage).

*Synhalonia speciosa* Cockerell, 1905d, p. 148 (not of Cresson). Fort Collin: and Boulder, COLORADO; V; at mountain ash.

*Synhalonia speciosa* Robertson, 1905, pp. 366, 367 (not of Cresson). ♀, ♂. Carlinville, ILLINOIS.

Cockerell, 1906, pp. 79, 90, 94, 95, 101, 310. Boulder, COLORADO; VI; at *Aragallus*; (W. P. Cockerell). Baldwin, KANSAS; (Bridwell). Las Vegas and Barela Mesa, NEW MEXICO; (Anna Gohrman). Gives the above synonymy.

Cockerell, 1914a, p. 283. Bloomington, INDIANA; V; (Ellis).

See *frater*.

**donata** Cresson, 1878a, p. 208. (*Melissodes*) ♀. MEXICO; (Sumichrast).

Cockerell, 1906, p. 101.

**douglasiana** Cockerell, 1906b, p. 278. ♀. Steamboat Rock, Grand Coulee, Douglas County, WASHINGTON; VI; (Melander).

*dubitata*. See *atriventris*.

**edwardsii** Cresson, 1878a, p. 195. (*Melissodes*) ♂. CALIFORNIA; (H. Edwards).

*Synhalonia edwardsii* Patton, 1879, p. 474.

*Synhalonia edwardsii* race *angustior* Cockerell, 1897a, p. 347. ♂, ♀. Pasco, WASHINGTON; V; (Kincaid).

*Synhalonia edwardsii* Fowler, 1902, p. 321. Berkeley, CALIFORNIA; III-V; at *Brassica campestris*, *Ranunculus californicus* and *Malvastrum capense*.

*Synhalonia edwardsii* Viereck et al., 1905, p. 315. Corvallis, OREGON; V-VII. Vernon, BRITISH COLUMBIA; V.

*Synhalonia angustior* Cockerell, 1905, p. 31. Los Angeles, CALIFORNIA; (Davidson).

Cockerell, 1906, p. 101. NEVADA.

Cockerell, 1914d, p. 365. Claremont, CALIFORNIA; (Essig).

*edwardsii latior*. See *lata*.

**edwardsii vagabunda** Cockerell, 1906, pp. 95, 101. ♂. Boulder, COLORADO; VI; (W. P. Cockerell).

Cockerell, 1906a, p. 74. At *Phacelia heterophylla*, not *Onosmodium* as originally reported.

**fedoris** Cockerell, 1906, pp. 93, 101. ♂. Fedor, Lee County, TEXAS; V; (Birkman). Suggests that it may be a variety of *rosæ* (Robertson).

**fervens** Smith, 1879, p. 112. ♀, ♂. Mendoza and Santiago, BRAZIL.

Friese, 1916, p. 295. San José, COSTA RICA; (Schmidt).

**flagellicornis** Smith, 1879, p. 111. ♂. Oaxaca, MEXICO.



**fowleri** Cockerell, 1905, pp. 14, 28. (*Synhalonia*) ♀. Los Angeles and Lancaster, CALIFORNIA; (Davidson). Suggests that it may be a subspecies of *belfragei* and states that it is the *Synhalonia californica* of Fowler, 1899, p. 137. ♀. Berkeley, CALIFORNIA; V. See Cockerell, 1904, p. 235.

Cockerell, 1906, p. 101. OREGON.

Bray, 1917, p. 94. Claremont, CALIFORNIA; (Baker).

**frater** Cresson, 1878a, p. 197. (*Melissodes*) ♂. COLORADO; (Morrison).

*Synhalonia frater* Patton, 1879, p. 474.

*Synhalonia frater* Robertson, 1895, p. 126. ILLINOIS. Makes *Melissodes speciosa* and *dilecta* (Cresson, 1878a, pp. 198 and 199) synonyms, but see 1905, p. 367.

*Synhalonia frater* Robertson, 1896, pp. 156, 159, 160, 165. Carlinville, ILLINOIS; at *Podophyllum peltatum*, *Æsculus* and *Gymnocladus canadensis*.

*Synhalonia frater* Cockerell, 1897a, pp. 347, 348. ♀. ILLINOIS.

*Synhalonia frater* Robertson, 1898a, pp. 234-237. At *Cornus paniculata*, *Viburnum pubescens* and *prunifolium*.

*Synhalonia frater* Cockerell, 1899c, p. 3. Baldwin, Douglas County, KANSAS; (Bridwell).

See *speciosa* and *trutta*.

**frater aragalli** Cockerell, 1904a, p. 25. (*Synhalonia*) ♀. Prospect Lake, Colorado Springs, COLORADO; V; at *Aragallus lamberti*.

Cockerell, 1908a, p. 234. Suggests that it may be the ♀ of *fulvitaris*.

**fulvitaris** Cresson, 1878a, p. 196. (*Melissodes*) ♂. COLORADO; (Morrison).

*Synhalonia fulvitaris* Patton, 1879, p. 474. ♀. Como WYOMING; (Williston). Type of *Synhalonia*.

*Synhalonia fulvitaris* Cockerell, 1905i, p. 204. Fort Collins, COLORADO; V. Cockerell, 1906, p. 101.

Cockerell, 1908a, p. 234. Boulder, COLORADO; V; at vetch; (Mrs. C. Bennett).

See *frater aragalli*.

*fulviventris*. See *Xenoglossa*.

**fulvohirta** Cresson, 1878, p. 213. (*Melissodes*) ♂. GEORGIA; (Morrison).

Cockerell, 1906, p. 101.

*fuscipes*. See *robertsoni*.

**fuscotincta** Cockerell, 1905f, p. 178. (*Synhalonia*) ♀. Oak Creek Canyon, ARIZONA; 6000 ft.; VIII; (Snow).

*gabbii*. See *Xenoglossa*.

*gillettei*. See *speciosa*.

**hirsutior** Cockerell, 1905, p. 29. (*Synhalonia*) ♂. Banning, CALIFORNIA; (Davidson).

- Cockerell, 1906, p. 101.
- hirsutissima** Cockerell, 1916, p. 428. ♀. BRITISH COLUMBIA; (Beazeley). "It also has a type-written label, 'Toba,' XXX. The locality may be erroneous."
- honesta*. See *belfragii*.
- idiotes** Cockerell, 1905, p. 105. (*Synhalonia*) ♀. CALIFORNIA; (Davidson). "Probably a race of *T. stretchii*" (Cockerell, 1912*d*, p. 264). It is the *Melissodes* sp. of Bull. Soc. Cal Ac. Sci., IV, p. 14.
- illinoensis** Robertson, 1902, p. 49. (*Synhalonia*.) ♂. Carlinville (?), ILLINOIS. "May be the male of *atriventris fuscipes*." See *robertsoni*.
- intrudens** Cresson, 1878, pp. 209 (*nevadensis*), 225; not 1872, p. 102. (*Melissodes*) ♂. NEVADA; (Morrison).  
*Synhalonia intrudens* Patton, 1879, p. 474.  
*Synhalonia nevadensis* Cockerell, 1903*b*, p. 77. CALIFORNIA.  
 Cockerell, 1906, p. 101. CALIFORNIA; at *Brassica*.
- joseana** Friese, 1916, pp. 295, 330. ♂, ♀. San José, COSTA RICA; (Schmidt).
- lanierii*. See *Florilegus*.
- lata** Provancher, 1888, p. 302. (*Melissodes*) ♀. Vancouver, BRITISH COLUMBIA; (Taylor).  
*Synhalonia edwardsii* race *latior* Cockerell, 1897*a*, p. 347. Olympia (IV-VII, at *Lupinus*) and Seattle (IV, V), WASHINGTON.  
*Synhalonia lata* Viereck, et al., 1905, p. 320. Suggests that it may be the ♀ of or a var. of *edwardsii*.  
 Cockerell, 1906, p. 101. OREGON.
- latior*. See *lata*.
- lepida** Cresson, 1878, p. 198. (*Melissodes*) ♂. TEXAS\*; (Belfrage). COLORADO; (Morrison).  
 Cockerell, 1906, p. 101.
- lippia*. See *Xenoglossodes*.
- lycii** Cockerell, 1897*a*, p. 348. (*Synhalonia*) ♀. Mesilla Valley, NEW MEXICO; IV; at *Lycium torreyi*, plum, and lilac. See Cockerell, 1897*c*, p. 28, and 1897*e*, p. 105.  
 Cockerell, 1906, pp. 101, 310. Engle, NEW MEXICO. At *Astragalus*.  
 Cockerell, 1911*a*, p. 238. Albuquerque, NEW MEXICO; VI; at *Astragalus*; (J. R. Watson).
- maculata*. See *crenulaticornis*.
- medicata** Cockerell, 1911, p. 34. ♀. Medicine Hat, ALBERTA; V; (Willing).

- nevadensis*. Probably *Melissodes*. See *intrudens*.
- nigricornis** Provancher, 1888, p. 302. (*Melissodes*) ♂. Vancouver, BRITISH COLUMBIA; (Taylor).  
Cockerell, 1906, p. 101.
- nigripes*. See *Melissodes*.
- nigroænea*. See *Melissodes*.
- orophila*. See *cordleyi orophila*.
- pallescens*. See *bifasciata pallescens*.
- phaceliæ** Cockerell, 1911a, p. 238. ♀. Albuquerque, NEW MEXICO; IV; at *Phacelia corrugata*; (J. R. Watson).
- planiventris** Friese, 1916, pp. 295, 330. ♀. San José, COSTA RICA; at *Cucurbita*; (Schmidt).
- poetica** Cockerell, 1914a, p. 424. ♂. Whittier, CALIFORNIA; IV; at *Convolvulus*; (Timberlake).
- pomonæ** Cockerell, 1915c, p. 230. ♂. Laguna, CALIFORNIA; (La Follette).  
Bray, 1917, p. 94. Claremont, CALIFORNIA; (Baker).
- pyropyga** Friese, 1916, pp. 295, 331. ♂. San José, COSTA RICA; (Schmidt).
- robertsoni** Cockerell, 1914a, p. 283. ♀. Washington\*, DISTRICT OF COLUMBIA; V. Garrison, NEW YORK; (Eleth Cattell).  
*Synhalonia atriventris* form *fuscipes* Robertson, 1900, p. 54. Carlinville, ILLINOIS. The name, *fuscipes*, is preoccupied; see Cockerell, 1912d, p. 264. If this be the ♀ of *illinoensis* Robertson, that name has priority.  
Cockerell, 1916d, p. 62. Claremont, CALIFORNIA; (Baker). "Can there be any error in the locality label?"
- rosæ** Robertson, 1900, p. 54. (*Synhalonia*) ♀. Carlinville, ILLINOIS.  
Cockerell, 1906, p. 101.
- snoviana*. See *speciosa*.
- speciosa** Cresson, 1878a, p. 198. (*Melissodes*) ♀. COLORADO; (Ridings, Morrison).  
(?) *Melissodes speciosa* Cresson, 1876, p. 209. Denver, COLORADO; (Putnam).  
*Synhalonia speciosa* Patton, 1879, p. 474.  
*Synhalonia speciosa* Robertson, 1891a, pp. 578-581, 589, 591. At *Phlox divaricata*, *Hydrophyllum appendiculatum*, *Mertensia virginica*, *Collinsia verna*, and *Pentstemon pubescens* and *lævigatus digitalis*.  
*Synhalonia speciosa* Robertson, 1894, pp. 436-445, 476. Macoupin County, ILLINOIS; at *Prunus serotina*, *Fragaria virginiana illinoensis*, *Pyrus coronaria*, *Cratægus crusgalli*, *Rosa humilis*, and *Krigia amplexicaulis* [*Adopogon virginicum*].

*Synhalonia speciosa* Robertson, 1895a, pp. 143, 145. ♂, ♀. Carlinville, ILLINOIS; at *Phlox pilosa*.

(?) *Synhalonia speciosa* Fowler, 1902, p. 321. Berkeley, CALIFORNIA; IV, V.

*Synhalonia frater* Cockerell, 1903b, p. 77. CALIFORNIA (see Cockerell, 1909c, p. 334).

Robertson, 1905, p. 367, says that *speciosa* is not a synonym of *frater*, as he gave it in 1895, p. 126. Carlinville, ILLINOIS.

*Synhalonia gillettei* Cockerell, 1905i, p. 203. Fort Collins, COLORADO; VI.

*Synhalonia gillettei snoviana* Cockerell, 1905f, p. 179. ♂; Clarke County, KANSAS; 1962 ft.; IV; (Snow).

*Synhalonia speciosa* Cockerell, 1905d, p. 143. Fort Collins and Boulder, COLORADO; V.

*T. gillettei* Cockerelli, 1906, p. 115. Fedor, TEXAS; V; (Birkman).

Cockerell, 1909c, p. 334. Lee County, TEXAS; VI; at *Scutellaria*; (Birkman).

See *dilecta* and *truttæ*.

**stretchii** Cresson, 1878a, p. 207. (*Melissodes*) ♀. CALIFORNIA; (Stretch).

Cockerell, 1906, p. 101.

See *idiotes*.

**tenuifasciata** Friese, 1916, pp. 295, 332. ♂, ♀. San José and San Mateo, COSTA RICA; at *Cucurbita*; (Schmidt, Burgdorf).

**territella** Cockerell, 1905d, p. 146. (*Synhalonia*) ♂. Palisade, COLORADO; V; at *Prunus*; (Gillette).

Cockerell, 1906, p. 101.

**truttæ** Cockerell, 1905d, p. 147. (*Synhalonia*) ♂, ♀. Trout Spring, Gallinas Canyon, NEW MEXICO; V; at *Iris missouriensis*. "*Synhalonia frater* (not of Cresson), Cockerell, Amer. Naturalist, Vol. 36, p. 815 (not description)."

Cockerell, 1906, p. 101. At *Iris*.

*vagabunda*. See *edwardsii vagabunda*.

**virgata** Cockerell, 1905, p. 100. (*Synhalonia belfragei* subsp. *virgata*). ♀. Los Angeles, CALIFORNIA; (Davidson).

**yakimensis** Cockerell, 1906b, p. 278. ♂. Yakima, WASHINGTON; IV; (Melander).

### *Tetraloniella*

See *Xenoglossodes*.

**THYGATER** Holmberg, 1884, p. 133

(Type: *Tetralonia terminata* Smith)

*Macroglossapis* Cockerell, 1899b, p. 14 (N. n. for *Macroglossa* Radoszkowsky, 1884, p. 17, not Ochseneimer), is a synonym. See Cockerell, 1912d, p. 273.

- albilabris** Cresson, 1878a, p. 209. (*Melissodes*) ♂. MEXICO; (Sumichrast).  
*Macroglossapis albilabris* Cockerell, 1906, p. 74.  
 Cockerell, 1912d, p. 273.
- analis** Lepeletier, 1841, p. 104. (*Macrocera*) ♂. BRAZIL.  
*Tetralonia analis* Smith, 1854, p. 304.  
*Macroglossa oribazi* Radoszkowsky, 1884, p. 18. ♀. Orizaba, MEXICO.  
*Tetralonia analis* Friese, 1916, p. 295. San José, COSTA RICA.  
*Macroglossapis analis* Cockerell, 1906, pp. 74, 104.  
 Cockerell, 1912d, p. 273.
- cockerelli** Crawford, 1906, p. 160. (*Macroglossapis*) ♀. San José, COSTA RICA; 3550 ft.; V, VI.  
 Cockerell, 1912b, p. 29. Quirigua, GUATEMALA; (W. P. Cockerell).
- modesta** Smith, 1879, p. 115. (*Melissodes*) ♂. Oaxaca, MEXICO.  
*Macroglossapis modesta* Cockerell, 1906, p. 74.  
 Cockerell, 1912d, p. 273.
- montezuma** Cresson, 1878a, p. 194. (*Melissodes*) ♀\*, ♂. MEXICO; (Sumichrast).  
*Macroglossapis montezuma* Cockerell, 1906, pp. 74, 83.  
 Cockerell, 1912d, p. 273.
- nigravillosa** Crawford, 1906, p. 160. (*Macroglossapis*). ♂. San José, COSTA RICA; 3550 ft.; VI; at *Impatiens* and *Dahlia*.  
 Cockerell, 1912b, p. 29. Quirigua, GUATEMALA; II; at *Ipomæa sidæfolia*; (W. P. Cockerell).
- oribazi**. See *analis*.
- rubricata** Smith, 1879, p. 113. (*Melissodes*) ♀. Oaxaca, MEXICO.  
*Macroglossapis rubricata* Cockerell, 1906, p. 74.  
 Cockerell, 1912d, p. 273.  
*Macroglossapis rubricata* Crawford, 1906, p. 159. San José, COSTA RICA; 3550 ft.; VI; at *Dahlia*.

**XENOGLOSSA** Smith, 1854, p. 315.

(Type: *Xenoglossa fulva* Smith)

Dalla Torre, 1896, p. 223 includes it as a subgenus of *Eucera*. Tables: Cockerell, 1896, p. 192, and 1906, pp. 74-90.

*Peponapis* Robertson, 1902, p. 324 (*Xenoglossa pruinosus* Say, the type), is considered by Cockerell, 1912d, p. 265, to be a subgenus.

**angelica** Cockerell, 1902, p. 103. ♂, ♀. Los Angeles, County Farm, and San Diego, CALIFORNIA; VII, VIII; at *Cucurbita fetidissima* and *Ipomæa*.

*Peponapis angelica* Cockerell, 1903b, p. 77. This is the "*pruinosa* Fowler, not Say."

Cockerell, 1914d, p. 365. Fresno and Orange County, CALIFORNIA; VII.

*angustior*. See *patricia angustior*.

**apiculata** Cresson, 1878a, p. 220. (*Tetralonia*) ♀. COSTA RICA; (Gabb).

**assimilis** Smith, 1879, p. 114. (*Melissodes*) ♀, ♂. Oaxaca, MEXICO.

*Melissodes assimilis* Cockerell, 1905e, p. 329. Notes on type.

*Xenoglossa (Peponapis) assimilis* Cockerell, 1912b, p. 24, and 1912d, p. 265. Quirigua, GUATEMALA; at *Ipomæa*; (W. P. Cockerell).

**brevicornis** Cresson, 1872, p. 281. (*Melissodes*) ♀. Bosque County, TEXAS; (Belfrage).

*Eucera cressonii* Dalla Torre, 1896, p. 229. A new name, not for *Tetralonia brevicornis* Smith.

*Melissodes brevicornis* Crawford, 1903, p. 334. Lincoln, NEBRASKA; VIII; at *Teucrium canadense*.

*Xenoglossa brevicornis* Cockerell, 1906, pp. 73, 102. NEBRASKA; at *Teucrium*. Fedor, TEXAS; VI; (Birkman).

Cockerell, 1915a, p. 364. Sleeping habits.

See *strenua*.

**crawfordi** Cockerell, 1910, p. 367. ♂. Guadalajara, MEXICO; (Crawford).

Cockerell, 1917c, p. 481. Guanajuato, MEXICO; (Dugès).

*cressonii*. See *brevicornis*.

*cucurbitarum*. See *strenua*.

**davidsoni** Cockerell, 1905, pp. 14, 28. ♀. Los Angeles, CALIFORNIA; (Davidson).

**dugesi** Cockerell, 1919, p. 194. ♀. Guanajuato, MEXICO; (Dugès). *exquisita*. See *fulviventris*.

**fulva** Smith, 1854, p. 315. ♀, ♂. Puebla, MEXICO.

*Anthophora holopyrrha* Dours, 1869, p. 89.

Cockerell, 1896, p. 193. ARIZONA. The record for Lower California is to be deleted, it being due to an error in considering *Centris mustelina* a synonym.

**fulviventris** Smith, 1854, p. 308. (*Tetralonia*) ♀. MEXICO.

*Melissodes exquisita* Cresson, 1878a, p. 213. ♀. MEXICO; (Sumichrast).

Cockerell, 1906, p. 102.

*Tetralonia fulviventris* Cockerell, 1905j, p. 165. Near Sylacoyoapam, Oaxaca, MEXICO. Host of *Triepeolus digueti*.

*Tetralonia fulviventris* Meade-Waldo, 1914, p. 402. Makes *exquisita* a synonym.

**gabbi** Cresson, 1878a, p. 220. (*Tetralonia*) ♀\*, ♂. COSTA RICA; (Gabb).

*Macrocera gabbi* Schrottky, 1903, p. 519. BRAZIL.

Cockerell, 1906, pp. 81, 102.

*holopyrrha*. See *fulva*.

**howardi** Cockerell, 1918a, p. 420. (Subgenus *Peponapis*) ♂\*, ♀.  
Federal District\* and Oaxaca, MEXICO; IX; (Inda and Howard).

*ipomæa*. See *Cemolobus*.

*kansensis*. See *strenua kansensis*.

*limitaris*. See *priuinosa limitaris*.

**mustelina** Fox, 1893, pp. 24 and 118. ♀, ♂. San José del Cabo, Lower California, MEXICO; (Eisen). Described as *Centris* (p. 24) and made a synonym of *Xenoglossa fulva* (p. 118), but Cockerell, 1905e, p. 328, after examining the type of *fulva*, says it is distinct.

**patricia** Cockerell, 1896, pp. 191-193, and 1898a, p. 67. ♂, ♀. Mesilla and Gila River, NEW MEXICO; VI; at *Cucurbita perennis* [= *fætidissima*].

Bequaert, 1918, p. 126. Crepuscular.

**patricia angustior** Cockerell, 1900b, p. 64. ♂. Buckeye, ARIZONA; X; at *Cucurbita palmata*.

Cockerell, 1902, p. 103. Los Angeles, CALIFORNIA; VII; at *Cucurbita fætidissima*.

Cockerell, 1906, pp. 74, 314. Congress Junction, ARIZONA; VII; (Snow). "Lower Sonoran."

Cockerell, 1914d, p. 365. Fresno, CALIFORNIA; VIII.

**pruinosa** Say, 1836, p. 405. (*Macrocera*) ♂, ♀. United States.

*Melissodes pruinosa* Smith, 1854, p. 309. Mount Pleasant, OHIO.

*Melissodes pruinosa* Cresson, 1876, p. 209. Spring Lake, UTAH; (Putnam). Patton, 1879, p. 473. At pumpkin.

Gribodo, 1882, p. 274. ARIZONA.

Robertson, 1891a, pp. 574, 581. At *Ipomæa pandurata* and a male found dead on flower of *Asclepias sullivantii*.

Cockerell, 1896, p. 193. PENNSYLVANIA. NEW YORK. Mesilla, NEW MEXICO; VI; at *Cucurbita perennis*.

Cockerell, 1899, p. 156. Mescalero Indian Agency, Tularosa Creek, NEW MEXICO; VII; (C. M. Barber).

Cockerell, 1901a, p. 130. Las Vegas, NEW MEXICO; VII; at *Cucurbita fætidissima* and *Asclepias speciosa*; (Winters, Holzman, Rishel, Porter).

*Peponapis pruinosa* Robertson, 1902, p. 324.

Viereck, 1903a, p. 119. College Park, MARYLAND; VII.

*X. spruina* Howard, 1904, Pl. VII, Fig. 2.

*Peponapis pruinosa* Robertson, 1905, p. 365.

Cockerell, 1906, pp. 73, 102, 115, 310. ARIZONA; VIII; (Snow). Lee County, TEXAS; VI; (Birkman). Pecos, NEW MEXICO.

Smith, 1910, p. 694. Throughout NEW JERSEY; VII-IX.

Cockerell, 1911, p. 390. Woods Hole, MASSACHUSETTS; (Cattell).

Cockerell, 1912*d*, p. 265. Falls Church, VIRGINIA (Banks), west to COLORADO.

Cockerell, 1914*a*. Santa Fé, NEW MEXICO; VIII.

X. (*Peponapis*) *pruinosa* Viereck, 1916, p. 733. New Haven and Bristol, CONNECTICUT; VII.

See *angelica*.

**pruinosa limitaris** Cockerell, 1906*a*, p. 73. ♂. Brownsville, TEXAS; VI; (Snow).

**rhodophila** Cockerell, 1918*b*, p. 27. ♀. MEXICO; (Baker).

*spriuna*. See *pruinosa*.

**strenua** Cresson, 1878*a*, p. 213. (*Melissodes*) ♀, ♂\*. TEXAS\*, GEORGIA, and NEW MEXICO.

*Xenoglossa cucurbitarum* Cockerell, 1896, p. 192. ♂, ♀. Mesilla, NEW MEXICO; VI; at *Cucurbita perennis*.

*Xenoglossa cucurbitarum* Robertson, 1899, p. 215. Presumably Carlinville, ILLINOIS; at *Cucurbita pepo*, *Citrullus vulgaris*, *Asclepias cornuti*, and *Ipomœa nil* and *pandurata*. Ames, IOWA; at summer squash; (Alice M. Beach). Metropolis, ILLINOIS; at *Martynia proboscidea*; (Hart). Says that X. *brevicornis* Robertson in Botanical Gazette, XVII, p. 65, is a manuscript name for this species.

Robertson, 1902, p. 324.

Robertson, 1903*b*, p. 77. CALIFORNIA.

Cockerell, 1905*c*, p. 266. Fedor, TEXAS.

Cockerell, 1906, pp. 102, 310. ILLINOIS and IOWA.

Gränicher, 1911, p. 247. Hudson in St. Croix County, WISCONSIN; VIII; at *Cirsium arvense* and Cucurbitaceæ.

**strenua kansensis** Cockerell, 1905*g*, p. 104. ♂. Clark County (1962 ft.), Morton County (3200 ft.), Wallace County (3000 ft.), KANSAS; VI; (Snow).

**utahensis** Cockerell, 1905*f*, p. 182. ♀. UTAH.

### **XENOGLOSSODES** Ashmead, 1899, p. 63

(Type: *Xenoglossa albata* Cresson)

Practically equals *Tetraloniella* Ashmead, 1899, p. 61, of the Old World; see Cockerell, 1911*b*, p. 185. For tables, etc., see Cockerell and Porter, 1899, p. 407; Cockerell, 1903, p. 449; and Cockerell and Robbins, 1910, p. 194.

**albata** Cresson, 1872, p. 281. (*Melissodes*) ♀, ♂. TEXAS; (Belfrage).

*Synhalonia albata* Patton, 1879, p. 474.

*Synhalonia albata* Birkman, 1899, p. 245. Fedor, Lee County, TEXAS. Cockerell, and Porter, 1899, p. 407.



*albocincta*. See *Melissodes*.

**eriocarpi** Cockerell, 1898, p. 453. (*Exomalopsis*) ♀. Fillmore Canyon, Organ Mountains, NEW MEXICO; 5400 ft.; IX; at *Eriocarpum gracile*, now called *Sideranthus gracilis*; (Townsend).

Cockerell and Porter, 1899, p. 407.

Cockerell, 1905c, p. 335. Fedor, TEXAS; VI.

Cockerell, 1906a, p. 72. Brownsville, TEXAS; VI; (SNOW).

**excurrens** Cockerell, 1903, p. 448. ♀. Roswell, NEW MEXICO; VIII.

*Melissodes pecosella verbesinarum* Cockerell, 1905f, p. 180. ♀. Las Cruces, NEW MEXICO; IX; at *Verbesina encelioides*, now called *Ximenesia exauriculata*.

*Melissodes pecosella verbesinarum* Cockerell, 1906c, p. 366. At *Isocoma wrightii*. 1906, p. 310: "Middle Sonoran."

Cockerell, 1910, p. 259.

**gutierreziae** Cockerell, 1905h, p. 218. ♀. Fillmore Canyon, Organ Mountains, NEW MEXICO; VIII; at *Gutierrezia*; (Townsend).

**helianthorum** Cockerell, 1914b, p. 415. ♂. Falfurrias, TEXAS; V; at *Helianthus*; (Morgan).

**imitatrix** Cockerell and Porter, 1899, p. 407. ♀, ♂. Las Vegas, NEW MEXICO; VIII; at *Sphaeralcea lobata*; (Garlick, Porter).

Cockerell, 1904a, p. 24. Glorieta, NEW MEXICO; VIII; (W. P. Cockerell).

**lippiae** Cockerell, 1904a, p. 25. (*Synhalonia crenulaticornis lippiae*) ♂. La Cueva\* and Dripping Spring, Organ Mountains, NEW Mexico; about 5300 ft.; VIII, IX; at *Lippia wrightii*; (Townsend).

*Synhalonia lippiae* Cockerell, 1905h, p. 224. At *Phacelia congesta*.

*Tetralonia lippiae* Cockerell, 1906, p. 97. ARIZONA; (SNOW).

**lippiae semilippiae** Cockerell, 1905f, p. 179. (*Synhalonia*) ♀. Oak Creek Canyon, ARIZONA; 6000 ft.; VIII; (SNOW).

**neotomae** Cockerell, 1906, pp. 310, 314. ♀, ♂. Raton, NEW MEXICO; VIII.

*saponellus*. See *Melissodes*.

*semilippiae*. See *lippiae semilippiae*.

**wilmattae** Cockerell, 1917a, p. 191. ♀. Point Isabel, TEXAS; at a yellow composite; (W. P. Cockerell).



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<sup>1</sup>The reference letters in this list, e. g. 1897a and 1897b, have no chronological significance; b may have been published before a.

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#### ADDENDUM

A paper by Adolpho Ducke, entitled 'Enumeração dos Hymenopteros colligidos pela Comissão e Revisão das especies de abelhas do Brazil,' Comissão de Linhas Telegraphicas Estrategicas de Matto Grosso ao Amazonas (Publicação No. 35), Anexo No. 5, Historia Natural, Zoologia, was received in October 1920, although it is dated 1916. It chiefly concerns the Meliponidæ but, as our paper was then in page proof, we could not include his somewhat drastic changes in taxonomy.

Prof. Cockerell has written from London as follows. "I have found in the British Museum the type of *Ancyloscelis ursinus* Haliday, and it is the genus we have as *Leptergatis (armatus* Smith). *Ancyloscelis* is the proper name for this genus. *Leptergatis halictoides* Holmberg is also in the Museum and is not congeneric with the above; it is very near *Melitoma*." Unfortunately, this also was received after our paper was in page proof. Furthermore, in justice to Prof. Cockerell, it should be said that none of the proof has had the benefit of his revision.

FRANK E. LUTZ.

