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*Notes on the Distribution and Bibliography of North
American Bees of the Families, Apidae, Meliponidae
Bombidae, Euglossidae, and Anthophoridae*

BY FRANK E. LUTZ AND T. D. A. COCKERELL
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BULLETIN AND MEMOIRS

OF

The American Museum of Natural History

FRANK E. LUTZ, Editor

The following are the more recent papers on **INVERTEBRATE ZOOLOGY**. Orders should be addressed, Library, The American Museum of Natural History, 77th St. and Central Park West, New York City.

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|------|--|--------|
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| 157. | North American Cicadellidae in the Collection of The American Museum of Natural History. Subfamily Cicadellinae. By Chris E. Olsen, 1918, Bulletin, XXXVIII, Art. 1, pp. 1-6, 1 text figure. | 10c. |
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| 165. | Illustrations of the North American Species of the Genus <i>Catocala</i> by Wm. Beutenmüller, with Additional Plates and Text. By Wm. Barnes and J. McDunnough, 1918, Memoirs, N. S., III, part 1, pp. 1-47, Pls. 1-xxii. | \$9.00 |
| 166. | A Revision of the Vespidae of the Belgian Congo Based on the Collection of the American Museum Congo Expedition, with a List of Ethiopian Diplopterous Wasps. By J. Bequaert, 1918, Bulletin, XXXIX, Art. 1, pp. 1-384, Pls. i-vi, 267 text figures. | \$3.50 |
| 167. | A Review of the Land Mollusks of the Belgian Congo Chiefly Based on the American Museum Congo Expedition, 1909-1915. By Henry A. Pilsbry, 1919, Bulletin, XL, Art. 1, pp. 1-370, Pls. 1-xxiii, 163 text figures. | \$4.00 |
| 168. | Collembola from the Crocker Land Expedition, 1913-1917. By Justus W. Folsom, 1919, Bulletin, XLI, Art. 3, pp. 271-303, Pls. xvi-xxiii. | 50c. |

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

BY FRANK E. LUTZ AND T. D. A. COCKERELL

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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 rufofulvous 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, pp. 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; (Häensch).

Cockerell, 1919, p. 205. Mapiro, 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. Zacoaleo, 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. Prinzipolca 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. Mapiiri, 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. MONTSERRAT; (Riley).

variegatipes lautipes Cockerell, 1919, p. 204. ♀. MONTSERRAT; 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; Manaus, 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. 507.¹
 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 virgilii** 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 *ruficus 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 vidafolia*; (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; (Busek and Jennings).

¹ 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, 1900a, 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, 1915a, 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, 1915a, p. 30. Cincinnati Coffee Plantation, 20 miles inland from the port of Santa Marta, COLOMBIA; 5,000 ft.; VII; (Gauge). Re-description, synonymy, and biology.
 Cockerell, 1917d, p. 128. Alhajuelo, PANAMA; (Buseck). Guapiles, COSTA RICA; (Crawford). Secanquin, GUATEMALA; (Goll).
- droryana** Friese, 1900a, p. 391. ♀, ♂. Espirito Santo, BRAZIL.
 Ihering, 1903, p. 216. Biology.
 Strand, 1910, p. 558. Asuncion, S. Lorenzo, Villa Morra, and Puerto Bertoni, PARAGUAY,
 Cockerell, 1920a, 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, 1917d, p. 127. ♀. Porto Bello, PANAMA; IV; (Buseck).
- 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, 1914c, p. 309. Guayaquil, ECUADOR.
 Cockerell, 1920a, p. 462. Guadalajara, Jalisco, MEXICO; (Diguët).
- frontalis flavocincta** Cockerell, 1912, p. 50. ♀. Independencia, Parahyba, BRAZIL; (Mann and Heath).
T. f. flavocincta var. *a* Cockerell, 1912b, p. 314. ♀. Quirigua, GUATEMALA; (W. P. Cockerell).
 Cockerell, 1917d, 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, 1920a, p. 462. Paraiso, Canal Zone, PANAMA; I; (Buseck).

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, Amatitlan, 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, Meixco; (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, Jacobaya, 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. Esequintla 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).

moesta 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; (Busek).

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 sidæifolia*, 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*.

nigrocyanæa 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; (Busek).

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

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

Latreille, 1809, p. 183.

Melipona pallida Lamarek, 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; (Busek).

pallida nigrita 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; (Busek). 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 aselepiads; (Townsend).

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

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

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

chumbleri. 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.

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

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

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

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

silvestriana Vachal. Cockerell, 1912b, 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, 1917d, p. 124. N. n. for *flaveola* Friese, 1900a, 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, 1911b, p. 286. ♀. Piura, PERU, X; (Townsend).

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

Wheeler, 1913, p. 5. Biology.

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

virgiliai. See *capitata virgiliai*.

wheeleri. See *bipunctata wheeleri*.

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

ziegleri Friese, 1900a, 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.¹

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*.

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

Apis antiguensis 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. Forest Hills* and Sherborn, MASSACHUSETTS. Brooklyn, NEW YORK. Suggests that *B. jurtus* 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 (Bartlett-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.

Greece, 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 on).

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

(Provancher).

Apathus elatus Provancher, 1882, p. 269. St. Anne de Lap rade, 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. Carliaville, ILLINOIS; at *Asclepius verticillata*, *incarnata*, *cornuti*, and *purpurescens*, *Gentiana andrewsii*, *Linaria vulgaris*, *Phlox divaricata*, *Polemonium reptans*, *Hydrophyllum virginicum* and *appendiculatum*, *Mertensia virginica*, *Ipom ea pandurata*, *Convolvulus sepium*, *Solanum nigrum* and *carolinense*, *Verbascum thapsus*, *Collinsia verna*, *Pentstemon pubescens* and *laevigatus 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*, *Crataegus coccinea* and *crusgalli*, *Veronia fasciculata* (printed *noveboracensis* but changed by author in copies he sent out), *Lacinaria* ["*Liatris*"] *pyncnostachya*, *Solidago canadensis*, *nemoralis*, and *lanceolata*, *Boltonia asteroides*, *Aster novaeangliae* and *paniculatus*, *Antennaria plantaginifolia*, *Silphium laciniatum*, *Helianthus mollis*, *grosseserratus*, and *tuberosus*, *Vcrbesina 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*, *Aesculus*, *Astragalus canadensis* and *mexicanus*, *Gymnocladus canadensis*, *Aster ericoides villosus*, *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 cevalliae 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 Kuehs, 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.

Gräniche, 1907, pp. 22, 31, 40, 44, 93, 94. ♀. WISCONSIN; at *Uvularia grandiflora*, *Erythronium americanum*, *Salomonina 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.

Gräniche, 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. Bolton, 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.

antiquensis. 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 dasycarpum*; (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 asptoni*.

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 *Penstemon lævigatus digitalis*.

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

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.

Evans, 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*.

cajennensis 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, Redoudo, 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*.

carriei. 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 thurbeori*, 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, 1906*d*, 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, 1907*b*, p. 257. Boulder, COLORADO.

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

Cockerell, 1910*d*, 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, 1919*c*, p. 272, Gold Hill, COLORADO; 8600 ft.; VII; at *Fraseria*.

cevallæ. 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 ruschyi*. 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, 1901*c*, 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, 1878*a*, 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. ♂, ♀. Painsee, NEW BRUNSWICK; (Sladen).

See *frigidus*.

ressoni. 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 *silkensis*.

[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.), Xycumanatlan (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 Mesalero, 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; (Brunco, Gillette, and Ball).

B. "nearticus" 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 *Pallugia*; (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) Volcans 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*.

chippiatus 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.

Riely, 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*, *Eschulus 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 Grænicer, 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*") Grænicer, 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, Brarford, 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, Mescalero 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 viganus 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 dasy carpum* and *Mertensia bakeri*; (Kenoyer).

Cockerell, 1919b, p. 294. Hudsonian zone on Longs 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. Olaş de Moka, Department Solola, GUATEMALA. VENEZUELA.

Franklin, 1915, p. 414. MEXICO: Xucumanatlan, 7000 ft., (Smith), and Omilteme, 8000 ft., both in Guerrero; Cuidad, 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 *lancoolata*, *Helianthus grosseserratus*, *Coreopsis aristosa*, *Helonium 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; (Whympier; see his 'Travels amongst the Great Andes of the Equator').

B. (Bombias) funebri Franklin, 1913a, p. 157. Tarata, BOLIVIA. Calanga, 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 mossia* 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*, *Seymeria 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*"] *pycnostachya*, *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 Grænicier, 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.

Grænicier, 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. balleatus* Dahlbom, 1832, p. 36.

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

For references to possible synonyms (*nivalis*, *balleatus*, *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 (Sansou), 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, Sierra 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 MEXICO" (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, PANAMA. ECUADOR. Minas Geraes and Saõ 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, (Gaumer), 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. menestriesii* 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 *melampygyus*.

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, 1878a, 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, 1913a, 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 *sitkensis*.

[P.] **mixtus** Cresson, 1878a, 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, 1902a, p. 126. Fox Point, Kodiak, Juneau, Selkovia, 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, 1919b, p. 294. Battle Mountain, COLORADO; above timber line.

Sladen, 1919a, p. 316. ♂. Porcupine Mountain district, YUKON TERRITORY; (Cairnes).

See *alboanalis*.

moderatus. See *terrestris moderatus*.

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

monardæ. See *centralis*.

montanus. See *kirbyellus*.

montezuma. See *nigrodorsalis*.

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

[F.] **morrisoni** Cresson, 1878a, 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) *Unguadia 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 Gerie, 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, NORTH-WEST 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 rusbiji*.

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 latcollis* ♀. Meadow Valley (head of Rio Piedras 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, 1898*d*, 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, 1900*a*, 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; (Stanford).

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

B. howardi Ashmead 1902*a*, 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, 1907*b*, p. 258. Boulder, COLORADO; V.

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

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

B. occidentalis howardii Cockerell, 1910*d*, 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*, *sylvicola*, *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*.

phacelia. 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.
- Frat.klin, 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 Logg.)

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

rufosuffusus. See *huntii*.

sandersoni. See *vagans 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*, *Helenium 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 Kueck, 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, Springfield, Gordon, and Sioux County, NEBRASKA; II-X; at *Prunus*, *Salix*, *Ribes*, *Rubus*, *Malus*, *Astragalus*, *Lonicera*, *Petalostemon*, *Psoralea*, *Verbena*, *Symphoricarpos*, *Monardia*, *Cassia*, *Solidago*, *Carduus*, and *Helianthus*.

Cockerell, 1907*b*, 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, 1878*a*, p. 185. ♂. OREGON; (Edwards).

B. mixtuosus Ashmead, 1902*a*, 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, 1904*b*, 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 Urca, 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 *albomaculis* 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 of 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 *Carsalpinia 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); Jallseo, 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.] **sylicola** 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. 296. ♀, ♂, ♂. Nome, and Teller, ALASKA. Herschel Island, YUKON TERRITORY. Bernard Harbour, NORTHWEST TERRITORY.

See *melanopygus*.

[P.] *sylicola flavicollis* Friese, 1911, p. 572. (*B. lapponicus flavicollis*) Pikes Peak, COLORADO.

[P.] *sylicola johanseni* Sladen, 1919a, p. 306. ♀, ♂. 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 *hebbiana*, *Aesculus 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 Gränicher, 1907, pp. 26, 36, 91, 93. ♀, ♂. WISCONSIN; at *Allium cernuum*, *Vagnera stellata*, *Ribes oxycanthoides* and *cynosbati*.

B. huntii ("=ternarius") Gränicher, 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; (Gaige, 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; (Gaige).

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, Koyukuk 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. 316. ♂. 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.

Evans, 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 *hebbiana*, *Rhodora canadensis*, *Aesculus 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).

Gräniche, 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. Brarford 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*'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. Quebec 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 Evans, 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 Grænicher, 1907, pp. 23, 32, 36, 40, 42, 91, 94. ♀, ♀. WISCONSIN; at *Allium tricoccum*, *Asparagus officinalis*, *Clintonia borealis*, *Vagnera stellata*, *Salomonina 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*, *Triplobium 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 Gränericher, 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; (Hänsch).

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 Bombidae.

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 *Fernalde*, 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*; (Ashton). 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; (Gauge, 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*.

cevallix. See *Bombus americanorum*.

citrinus. See *laboriosus*.

consultus. See *ashtoni* and *insularis*.

contiguus. See *laboriosus*.

[L.] **crawfordi** Franklin, 1913, p. 464. ♀, ♂. Placer County, CALIFORNIA. OREGON.

clatus. 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. Clouderoft, 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; (Gauge and Andrews).

See *ashtoni*, *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; (Bilimek).

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.

Grænicher, 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*.

(?) Granicher, 1911, p. 248. Solon Springs and Coppermine Dam in Douglas County, and the mouths of the Nemakagon and of the Yellow River in Burnett 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. Duce, 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 Lapeletier, 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 *nigrita*.

angulata. See *smaragdina*.

auripes. See *smaragdina*.

bicolor Duce, 1902*a*, pp. 566, 570. ♂, ♀. Pará, BRAZIL; at *Anthurium regale*.

Crawford, 1906, p. 158. ♀. Pozo Azul, COSTA RICA; V; (Carriker).

cærulescens Lapeletier, 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 Duce, 1910, p. 367.

E. (Eumorpha) cerulescens Friese, 1899b, p. 145. BRAZIL.
Schrottky 1903, p. 592. Saõ 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 tozicarium*, 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, Saõ 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 Lepeletier, 1841, p. 13. (*Eulema*) ♀. 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-seggu*.

Ducke, 1902a, p. 575. NICARAGUA. Belem, Anajas, and Macapá, Pará, BRAZIL; VI.

fasciata Lepeletier, 1841, p. 12. (*Eulema*) ♀, ♂. FRENCH GUIANA.

Eulema cayennensis Lepeletier, 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*, *Biza 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 *pilliventris*.

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 Moesáry, 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 "*convexa*"] 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 Lepelletier, 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 Lepelletier, 1841, p. 14. (*Eulema*) ♀. FRENCH GUIANA.

Eulema analis Lepelletier, 1841, p. 14. ♂. BRAZIL.

Smith, 1874, p. 446.

E. (Eulema) nigrita Friese, 1899*b*, p. 157. Piahy and Minas Gerais, BRAZIL. Tarapoto, PERU. PANAMA.

Ducke, 1901, p. 50. Pará, BRAZIL; ♀, ♂: at *Centrosema plumieri* and *brasilianum*.

Ducke, 1902*a*, p. 576. Rio de Janeiro and São 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 *Ipomæa*, *Allamanda nerifolia*, *Bixa orellana*, *Cassia alata*, *Centrosema plumieri* and *brasilianum*.

Ducke, 1902a, p. 573. MEXICO to Minas Geraës, 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).

Eulama

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.¹ (See *Euglossa*.) Schrottky insists on using "*Hemisia*" 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.)

¹This 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, p. 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 Moesáry, 1899, p. 254. ♂. Præsidio, MEXICO.

Centris atriventris Fox, 1899, p. 68 (not of Moesáry). ♀, ♂; 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. ♀, ♂. Minas Geraës, Espírito Santo, Rio Grande do Sul, Jundiahy 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 Mto. 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) caesalpinia Friese, 1900, pp. 242, 294, 341.
Centris (Ptilotopus) caesalpinia Cockerell, 1906, p. 97.
 See *rhodopus*.

chilensis. See *smithii*.

citrotamiata. See *flavifrons*.

clypeata Friese, 1899, p. 41. ♀, ♂. Orizaba, MEXICO. GUATEMALA.
 II.

Centris (Melanocentris) clypeata Friese, 1900, pp. 241, 268. Orizaba and
 Cornuvacca (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 *hoffmannseggiae 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 PARA-
 GUAY 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 (Heteracentris) 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 (Pacilocentris) 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 in-
troducing *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 (Pacilocentris) fasciatella Friese, 1900, pp. 244, 332. N. n. given
because he joined *Epicharis* with *Centris*, thereby introducing *fasciata*
Lepeletier, 1825. MEXICO.

Centris (Pacilocentris) fasciata Schrottky, 1902, p. 325. Lagoa Santa,
Minas Geraes, 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 citroteniata 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 *citroteniata* by Gribodo, which
are *flavifrons*, but he did not sink Gribodo's name.

Centris (Hemisia) citrotanata Cockerell, 1906, p. 98.

Centris (Hemisia) flavifrons Cockerell, 1906, p. 98. MEXICO.

C. citrotanata 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. Saõ 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* Moesáry, 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 Calamujuet, 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 (Ptilopus) 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 (Ptilopus) 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 (Ptilopus) mexicana Cockerell, 1906, pp. 73, 97. Cuernavaca, MEXICO.

See *lanosa*.

mexicana albiceps Friese, 1899, p. 43. ♂. MEXICO.

minuta Mocsáry, 1899, p. 254. ♂. MEXICO. São Paulo, BRAZIL.

Centris (Melanocentris) minuta Friese, 1900, pp. 242, 293, 303. VENEZUELA. Yucatan, MEXICO. At *Petraea volubilis* and *Ipomæa*. Says that, according to Duce, it is the ♂ of *labrosa*.

Friese, 1908, p. 40. TRINIDAD.

mocsáryi Friese, 1899, p. 42. ♀, ♂. Minas Geraës, São Paulo and Pará, BRAZIL. VENEZUELA. PERU. MEXICO.

Centris (Melanocentris) mocsáryi Friese, 1900, pp. 242, 274.

Centris (Ptilopus) 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, 1897*a*, p. 355. ♂. Mesilla, NEW MEXICO; VI; (A. P. Morse). Cockerell, 1897*c*, p. 29; no description.

Centris (Pacilocentris) morsei Friese, 1900, pp. 244, 335. TEXAS.

Centris (Ptilopus) 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 (Ptilopus) marginata Cockerell, 1906, p. 97.

Cockerell, 1906*a*, 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. Jundiáhy and São Paulo, X, (Schrottky), and Minas Gerais 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. ♀. Phœnix, 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. Afoa, 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, Jundiahy, 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). Alhajuero, 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 mæsta Friese, 1899a, p. 288. GUATEMALA: See *Tetrapedia atripes*.

Tetrapedia mæsta 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 unbraculata* 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 RadoszkowskySee *Epicharis*.*Eucharis* LepeletierSee *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.

eriocarpus. 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*.
- pygmaea** Cresson, 1872, p. 279. (*Melissodes*) ♀. TEXAS; (Belfrage).
Melissodes pygmaea 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*.
- ruftarsis** 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 *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 sub-marginal cells in each wing), NEW MEXICO; VI.

stearnsi Cockerell, 1905, p. 101. (*Melissodes*) ♀. Los Angeles and Redondo, CALIFORNIA; (Davidson).

Cockerell, 1916d, p. 59.

tapaneca 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*.

Pæilocentris

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*.

griseascens. See *mexicana griseascens*.

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 griseascens Friese, 1899a, p. 301. (*E. saussurei griseascens*) ♂. MEXICO; (Saussure).

Tetrapedia mexicana griseascens 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 *lævigatus digitalis*.

Robertson, 1894, p. 442. Macoupin County, ILLINOIS; at *Rosa humilis* and *setigera*.

Robertson, 1896, p. 169. Carlinville, ILLINOIS; VI; at *Gillenia 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.

Gränicher, 1911, p. 248. Solon Springs, Douglas County, WISCONSIN; VII; at *Apocynum* and *rosamifolium*.

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*. (?) A. 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, 1906d, 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, 1898f, 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, 1916b, p. 55. Coronado Islands, MEXICO; VIII; at *Hazardia berberidis*.

See *texana*.

canadensis. See *bomboides canadensis*.

capistrata Cresson, 1878a, 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, 1878a, p. 192. ♂. CALIFORNIA; (Crotch).

Podalirius crotchii Cockerell, 1898b, p. 54. Pasco, WASHINGTON; V; (Kineaid).

Fowler, 1902, p. 320. Berkeley, CALIFORNIA; V.

Cockerell, 1904e (1915), p. 161. Banning, CALIFORNIA; (Davidson).

Cockerell, 1906b, 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 *peritoma* 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 Siehel 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. corricolor 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. ♂, ♀. Mesilla Valley, New Mexico; IV; at *Lycium* and cherry.

Cockerell, 1899*d*, p. 256. Dripping Springs, Organ Mountains, NEW MEXICO; IV; at *Ugnadia 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 *Biglora* [*Chrysothamnus*] and *Helianthus 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 macdougalii*; (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 macdougalii*, *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 inquiline.

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; *Agencia 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 containing *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.

pygmea 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 *bomboides* 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 Siebel MS., Dours, 1869, p. 147. ♀, ♂. MEXICO.

Podalirius doursii Dalla Torre, 1896, p. 265.

tarsata subtarsata Cockerell, 1904*e*, 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, 1897*b*, p. 154. ♂. DEMING, NEW MEXICO; VII; at *Cæsalpinia falcaria*. 1897*c*, p. 29; Mesilla Valley, NEW MEXICO; 3800 ft.; VIII; at *Cevallia*.

Cockerell, 1905*c*, 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 trinctula*.

tricolor Fabricius, 1775, p. 377. (*Andrena*) America.

Megilla tricolor Fabricius, 1804, p. 329.

Lepeletier, 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, 1878*a*, p. 188. ♀*, ♂*. UTAH*. COLORADO. CALIFORNIA.

Podalirius alamosanus Cockerell, 1896, p. 195. ♀. Canyonada Alamosa, NEW MEXICO; VI; (Townsend).

Cockerell, 1897, p. 400. Las Cruces, NEW MEXICO; VII; at *Solanum*.

P. u. alamosana Cockerell, 1898*a*, pp. 69, 73. Albuquerque and western base of Organ Mountains, NEW MEXICO; IX; at *Cleome serrulata*. See also 1898*f*, p. 311.

A. (Anequilla) u. alamosana Cockerell, 1901*a*, 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, Tebachapi, 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 sullivantii*.

Cockerell, 1914a, p. 281. Garrison, NEW YORK; (Cattell).

usticauda Cockerell, 1912b, p. 22. ♀. Antigua and Amatitlan, GUATEMALA; II; (W. P. Cockerell). Subgenus *Micranthophora*.

vallorum. See *Anthophoroides*.

versicolor. See *Centris*.

vierecki. See *centriformis 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 chamæcrista*.

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, WISCONSIN; VII or VIII; at *Rudbeckia hirta*.

See *smithii*.

washingtoni Cockerell, Viereck *et al.*, 1905, p. 313. ♀. PASCO, WASHINGTON; V; (Kincaid).

Cockerell, 1906b, p. 277. N. Yakima, WASHINGTON; V; (Jenne).

Cockerell, 1916, p. 283. Claremont, CALIFORNIA; (Baker).

watsonia. See *portera 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 elæagnifolium* and *Ipomœa*.*Podalirius vallorum* Cockerell, 1898f, p. 314. Mesilla Park, NEW MEXICO; at *Martynia* and *Chilopsis*.*Anthophora vallorum* Cockerell, 1900b, p. 218. Juarez, MEXICO; X; at *Ipomœa mexicana*.

Cockerell, T. D. A. and W. P., 1901, p. 48.

Cockerell, 1906, p. 100. At *Solanum* and *Ipomœa*.*Anthophorula* CockerellSee *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; (Gauge, 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 *Sphæralcea 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 *Eucera*. 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 tricineta 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, 1914b, p. 410. San Bernardino, CALIFORNIA; at *Helianthus*.

Bray, 1917, p. 94. Claremont, CALIFORNIA; V; at cactus.

australis rinconis Cockerell, 1897b, p. 154. (*Diadasia rinconis*) ♀. Rincon, NEW MEXICO; VII; at *Chilopsis saligna* and an aselepiad.

Diadasia rinconis Cockerell, 1904a, p. 24. Pecos, NEW MEXICO; VIII; at *Opuntia arborescens*.

Cockerell, 1905b, 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, 1917a, 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, 1878a, p. 218. (*Melissodes*) ♂. CALIFORNIA; (Crotch).

D. cinerea Fowler, 1899, p. 285. ♂. Berkeley, CALIFORNIA; V, VI.

Cockerell, 1903b, p. 77.

D. cinerea Cockerell, 1905, p. 14. Los Angeles and Rock Creek, CALIFORNIA.

Cockerell, 1905b, p. 745. NEVADA.

Bray, 1917, p. 94. Claremont, CALIFORNIA; V; at cactus.

cinerea. See *bituberculata*.

crassicauda Cockerell, 1915c, p. 231. ♂. Laguna, CALIFORNIA; (La Follette).

densa. See *enavata densa*.

diminuta Cresson, 1878a, p. 215. (*Melissodes*) ♂. COLORADO; (Morrison).

Melissodes apache Cresson, 1878a, 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, 1897c, 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 malyæflora*; Deming, VII, at *Verbesina encelioides*; and Clora'o, VII, at *Sphaeralcea 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 *Sphaeralcea fendleri lobata*, not *angustifolia* (See Cockerell, 1905*b*, p. 745).

nerca. 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).

sphaeralcearum Cockerell, 1905b, p. 744. ♂. Between Las Cruces and Mesilla Park, NEW MEXICO; VIII; at *Sphaeralcea 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 bremiformis Dalla Torre, 1896, p. 261. N. n. because he included *Saropoda bombiformis* Smith in *Podalirius*.

Cockerell, 1904d, p. 302.

bremiformis. 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; V₂ 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 *Phaciela 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, 1904d, p. 302.

tristissima Cockerell, 1904e, 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, 1909a, p. 414. Name for "n. sp. Viereck, ined.,"

Cockerell, 1905c, 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, 1899a, p. 273; Vachal, 1909, p. 5; Ducke, 1912, p. 95 (mixes a number of quite different genera); and Cockerell, 1917b, 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*.

Eucera marginella and *Podalirius fulvifrons* Dalla Torre, 1896, pp. 240, 269.

Cockerell, 1899b, p. 14. Lower part of Rio Nautla, MEXICO.

Meliphila impomæ Schrottky, 1902, p. 311. ♂, ♀. Buenos Ayres and État de St. Paul, BRAZIL; at *Ipomæ eriocarpa*.

Podalirius fulvifrons Schrottky, 1903, p. 524.

Cockerell, 1905c, 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, 1905*b*, p. 741.

Cockerell, 1912*b*, 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, 1878*a*, p. 199. (*Melissodes*) ♀*, ♂. GEORGIA; (Morrison).

Robertson, 1901*a*, p. 367. An oligotrope of *Ænothera biennis* at Carlinville, ILLINOIS.

Cockerell, 1905*c*, 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.

CEMOLOBUS Robertson, 1902, pp. 324, 325

(Type: *Xenoglossa ipomææ* Robertson)

ipomææ Robertson, 1891*a*, 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, 1878a, 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, 1909c, 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, 1896a, p. 293. (*Melissodes*) ♂. Rincon and Colorado, NEW MEXICO; VII; at *Prosopis juliflora glandulosa*.

Melissodes luteicornis Cockerell, 1898*f*, p. 314. Las Cruces, NEW MEXICO; at *Cevallia sinuata*.

Cockerell, 1906, p. 310. Mesilla Valley, NEW MEXICO.

MELISSODES Romand, 1841, Pl. LXX

(Type: *Melissodes fonscolombeii* Romand)

Cockerell, 1912*d*, p. 267: "*Melissodes* is usually credited to Latreille, but it was defined, and species assigned to it, by F. Smith in 1854. Lepeletier 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 fonscolombeii* 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 *fonscolombeii* 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, 1905*e*, 1905*h*, 1906, and 1912*d*.

acerba. See *Tetralonia*.

acomanche. See *atripes acomanche*.

actuosa. See *Tetralonia*.

afflicta. See *Diadasia*.

agilis Cresson, 1878*a*, p. 204. ♂. TEXAS; (Belfrage).

Cockerell, 1894, p. 234. Juárez, MEXICO; VIII.

Robertson, 1896, p. 176. Carlinville, ILLINOIS; at *Silphium perfoliatum*.

Cockerell, 1897*c*, 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.

Grænicier, 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 Composite.

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*"] *pycnostachya*, *Aster novae-angliae*, *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*.

albobincta Cockerell, 1919a, p. 119. ♀. MEXICO; (Baker). "This may be referable to *Xenoglossodes*."

albobollaris 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 *tepaneco aschenborniana*.

assimilis. See *Xenoglossa*.

asteris Robertson, 1914, pp. 70, 373. ♀. Carlinville, ILLINOIS; at Asteroideæ.

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; (Belgrave).

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*, *Ipomaea 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 Kuehs, 1902, p. 36. Lake View, KANSAS; at *Cassia chamaecrista*.

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 Lapeletier, 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*.

Grænicier, 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*"] *pyncostachya*, *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 *kallstræmia 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 osteroides*, *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, 1914*b*, p. 409. Goodview, COLORADO; VII; at *Helianthus annuus coronatus*.

Cockerell, 1919*c*, 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, 1909*c*, 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, 1917*e*, 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 norwegicus*, *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 *enici* Robertson a synonym.

See *enici* and *dentiventris*.

desponsiformis Cockerell in Viereck *et al.*, 1905, pp. 319–321. ♀. Corvallis, OREGON; (Cordley).

dilecta. See *Tetralonia*.

diminuta. See *Diadasia*.

donata. See *Tetralonia*.

dubitata Cresson, 1878*a*, p. 194. ♀*, ♂. Georgia; (Ridings, Morrison).

Cockerell, 1911, p. 34, and 1912*d*, 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, 1905*g*, p. 103. ♂, ♀. Bill William's Fork, ARIZONA; VIII; (Snow).

edwardsii. See *Tetralonia*.

enavata. See *Diadasia*.

epicharina Cockerell, 1905*g*, 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, 1878*a*, 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, 1896*a*, p. 290. ♂, ♀. San Rafael, Vera Cruz, MEXICO; III; at *Bidens*; (Townsend).

Cockerell, 1899*b*, 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, 1907*e*, p. 268. ♂. Florissant, COLORADO; VII; at *Geranium fremontii*; (Rohwer).

fulvitaris. See *Tetralonia*.

fulvohirta. See *Tetralonia*.

galvestonensis Cockerell, 1905*f*, p. 181. ♀, ♂. Galveston, TEXAS; V; (Snow).

georgica Cresson, 1878*a*, 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. 130, 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. Cloudcroft, 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 *tagetis*, 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 Helianthoidæ.

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).

kolloggi 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*.

machærantheræ Cockerell, 1904*a*, p. 21. ♂. White Sands, NEW MEXICO; and Buckeye, ARIZONA; IX; at *Machæranthera* and *Cucurbita palmata*. (?) ♀; PHOENIX, 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; (Busek).

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 [*nigroaenea* Smith, 1854] from Texas, labelled *M. menuacha*. A female *nigroaenea* received from Schrottky has the facial quadrangle broader and shorter than in *menuacha*. It is from San Juan, Argentina." See *nigroaenea*.

menuacha semilupina Cockerell, 1905, p. 29. ♂. Los Angeles, CALIFORNIA; (Davidson).

menuacha submenuacha Cockerell, 1897*d*, p. 137. ♂. Las Cruces and College 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*.

mizæ 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 acaulis*.

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*.

nigroænea Smith, 1854, p. 305. (*Tetralonia*) ♀. BRAZIL.

Cockerell, 1912*d*, p. 271. San Juan, ARGENTINA. See *menuacha*.

Tetralonia nigroænea 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 pallidisignata 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; (Belgrave, 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*"] *pycnostachya*, *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 lavis* 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.
 Grænicher, 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 macdougali*, *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, Clouderoft, 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; (Butenmüller).
- 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 lewis*.
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, Manumuskim, 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 *kallstræmia phenacoides*.

philadelphica Lepelletier, 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).

prælauda Cockerell, 1905g, p. 102. ♂. Oak Creek Canyon, Arizona; 9000 ft.; (Snow).

pruinosa. See *Xenoglossa*.

pullata Cresson, 1865, p. 189. ♀*, ♂. CUBA.

pygmaea. See *Exomalopsis*.

raphaelis Cockerell, 1896a, p. 292. ♂. San Rafael, Vera Cruz, MEXICO; III; at *Ipomaea*; (Townsend).

Cockerell, 1899b, p. 13. Lower part of Rio Nautla, MEXICO.

Cockerell, 1912b, p. 28. Quirigua, GUATEMALA, II; at *Ipomaea 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*.

rustica 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."

Gränicher, 1911, p. 247. St. Croix Dam in Douglas County; mouths of Nemakagon and Yellow Rivers, Swiss, and Randall in Burnett County; Farming on 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, 1908*a*, p. 234. ♀. Soap Lake, Grand Coulee, WASHINGTON; VI; (Melander). Suggests that it may be *Xenoglossodes*.

semiagilis Cockerell, 1906*c*, p. 364. (*M. agilis semiagilis*) ♂. Fedor, Lee County, TEXAS; V*, X.

Cockerell, 1914*b*, p. 413. ♀. Quanah*, INDIAN TERRITORY [Texas?]; VI; at *Helianthus*; (Mitchell). Dallas, TEXAS; IX; (Bishopp).

Cockerell, 1919*c*, p. 27. ♂. Boulder, COLORADO; X; at *Helenium*.

semilupina. See *menuacha semilupina*.

semitristis Cockerell, 1905*g*, p. 102. ♂. Oak Creek Canyon, ARIZONA; 6000 ft.; VII; (Snow).

senilis. See *denticulata*.

simillima Robertson, 1897, p. 355. Carlinville, ILLINOIS.

Robertson, 1898*a*, 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 *Asteroidæ*.

See *rustica*.

smithii Dalla Torre, 1896, p. 247. (*Encera*) New name for *Melissodes californica* Smith, 1879, p. 114, not Cresson. ♀, ♂. CALIFORNIA.

Cockerell, 1905*e*, p. 328. Notes on type.

snowii Cresson, 1878*a*, 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*.

sphæralcææ Cockerell, 1896*b*, 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, 1878*a*, p. 210. ♀. COLORADO; (Morrison).

subagilis. See *agilis subagilis*.

submenuacha. See *menuacha submenuacha*.

suffusa. See *petulca suffusa*.

sumichrasti. See *Diadasia*.

tenuitarsis Cockerell, 1905*g*, p. 99. ♂. ARIZONA; VIII; (SNOW).

tapaneca Cresson, 1878*a*, p. 211. ♀*, ♂. MEXICO; (Sumichrast).

tapaneca aschenborniana Cockerell, 1912*b*, p. 28. ♂. Gualan, GUATEMALA; at *Vernonia aschenborniana*; (W. P. Cockerell).

tepida Cresson, 1878*a*, p. 210. ♀. NEVADA; (Edwards).

Cockerell, 1903*b*, 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, 1905*i*, 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 mexicana*. "Upper to Middle Sonoran."

thurberiæ Cockerell, 1914*e*, p. 31. ♀. Stone Cabin Canyon, Santa Rita Mountains, ARIZONA; at *Thurberia thespesioides*; VIII; (Pierce).

toluca. See *Entechnia*.

townsendi Cockerell, 1896*b*, p. 304. ♂. La Cruces, NEW MEXICO; VIII; (Townsend).

Cockerell, 1897*c*, p. 28. Mesilla Valley, NEW MEXICO; 3800 ft. 1906, p. 310: "Middle Sonoran."

trifasciata Cresson, 1878*a*, p. 208. ♀. PORTO RICO; (Klug).

See *fozi*.

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.

Grænicier, 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, 1896*b*, p. 304. ♂. Mesilla Valley and San Marcial, NEW MEXICO.

Cockerell, 1897*c*, 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 *Ipomaea mexicana*.

Cockerell, 1901c, p. 40. Las Vegas, NEW MEXICO; VII; at *Cleome serrulata*. 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).

Gräniche, 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 *Veronia*.

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 *basizonu* 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 laevigatus 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 oxyacanthoides* 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 *laevigatus digitalis*.

Synhalonia belfragei Robertson, 1895, p. 126. ILLINOIS.

Synhalonia belfragei Robertson, 1896, p. 160. Carlinville, ILLINOIS; at *Esculus 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).

chrysochila 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).

Melis odes 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 lippiae. See *Xenoglossodes lippae*.

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 Collins 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 *roseæ* (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 *truttae*.

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 snowiana Cockerell, 1905f, p. 179. ♂; Clarke County, KANSAS; 1962 ft.; IV; (Snow).

Synhalonia speciosa Cockerell, 1905d, p. 148. 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 Oehsenheimer), 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.

analís Lepeletier, 1841, p. 104. (*Macrocera*) ♂. BRAZIL.

Tetralonia analís Smith, 1854, p. 304.
Macroglossa oribazi Radoszkowsky, 1884, p. 18. ♀. Orizaba, MEXICO.
Tetralonia analís Friese, 1916, p. 295. San José, COSTA RICA.
Macroglossapis analís 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 sidæifolia*; (W. P. Cockerell).

oribazi. See *analís*.

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 fatidissima* 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; (Belgrave).
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.
- gabri** Cresson, 1878a, p. 220. (*Tetralonia*) ♀*, ♂. COSTA RICA; (Gabb).

Macrocera gabbi Schrottky, 1903, p. 519. BRAZIL.
Cockerell, 1906, pp. 81, 102.

hölopyrrha. See *fulva*.

howardi Cockerell, 1918a, p. 420. (Subgenus *Peponapis*) ♂*, ♀.
Federal District* and Oaxaca, MEXICO; IX; (Inda and Howard).

ipomææ. See *Cemolobus*.

kansensis. See *strenua kansensis*.

limitaris. See *pruinosa 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* [= *fatidissima*].

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 fatidissima*.

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 fatidissima* and *Asclepias speciosa*; (Winters, Holzman, Rishel, Porter).

Peponapis pruinosa Robertson, 1902, p. 324.

Viereck, 1903a, p. 119. College Park, MARYLAND; VII.

X. spriana 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).

spruana. 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 *Ipomoea 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).

excurrans 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).

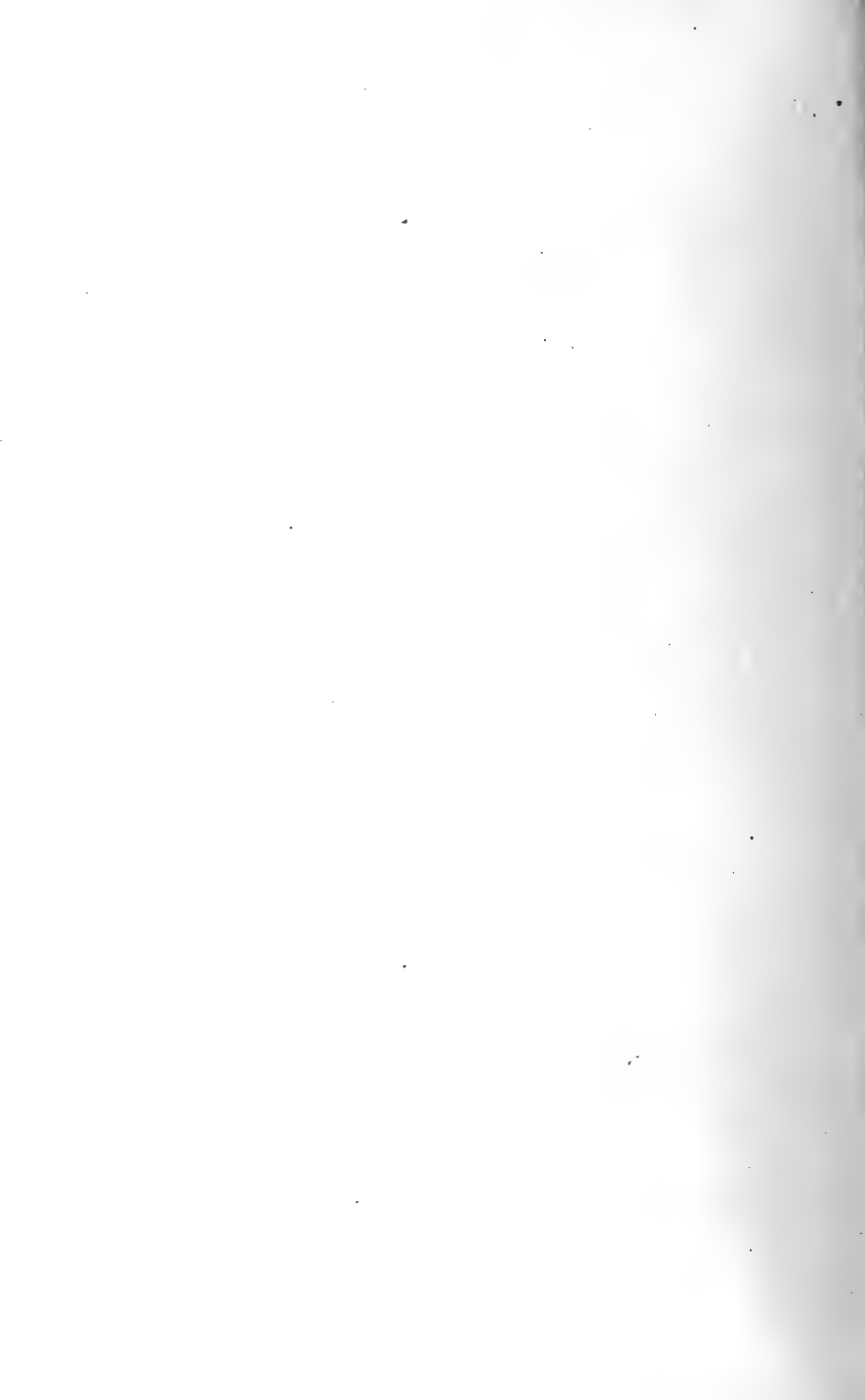
lippiae semilippiae Cockerell, 1905f, p. 179. (*Synhalonia*) ♀. Oak Creek Canyon, ARIZONA; 6000 ft.: VIII; (SNOW).

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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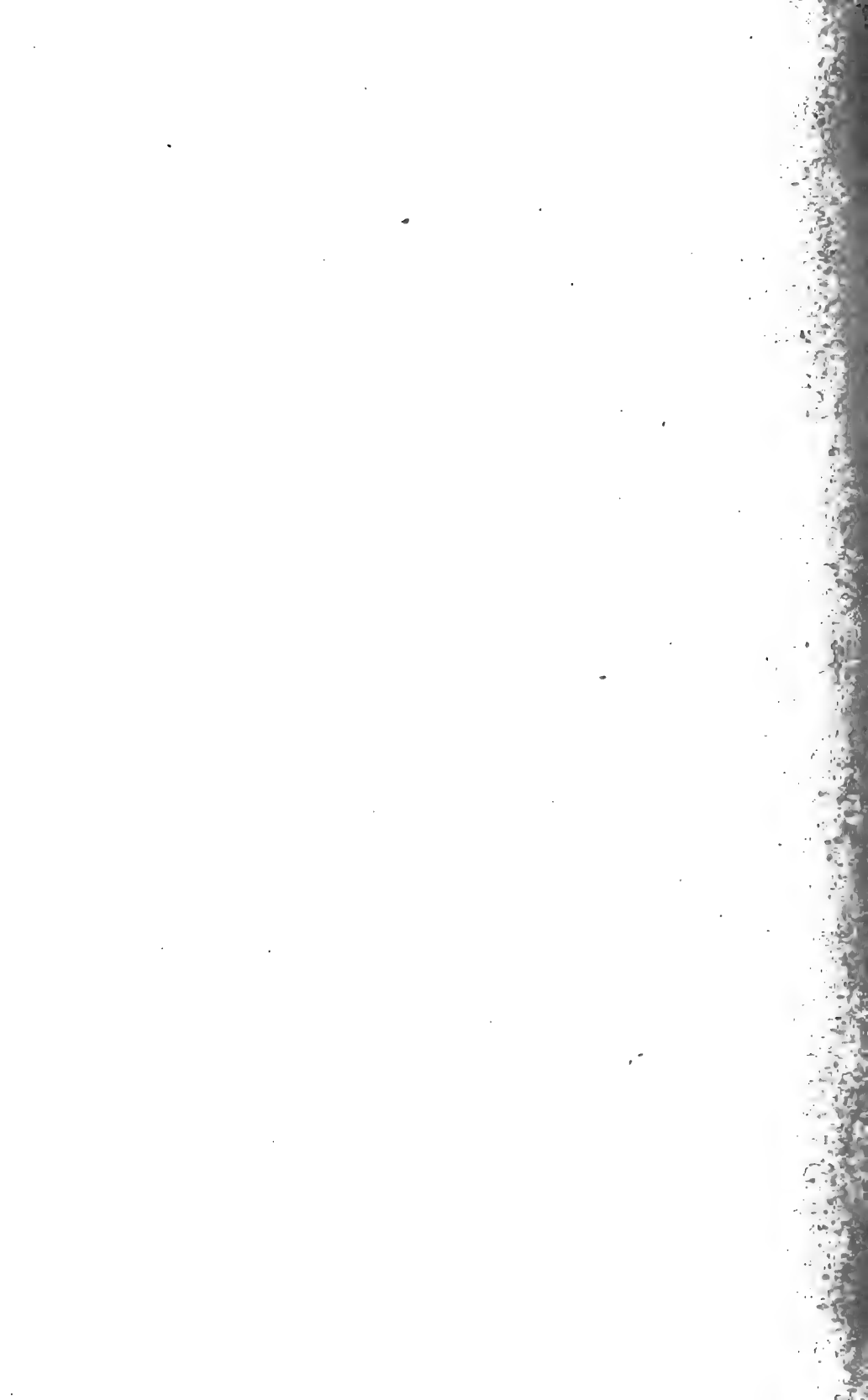
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ADDENDUM

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.



169. Insects of Florida. Va.—Supplementary Notes on The Water Beetles. By W. S. Blatchley, 1919, Bulletin, XLI, Art. 4, pp. 305-322. 20c.
170. A Revised List of the Diptera of Jamaica. By C. W. Johnson, 1919, XLI, Art. 8, pp. 421-449. 30c.
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182. Isopods Collected by the American Museum Congo Expedition. By Willard G. Van Name, 1920, Bulletin, XLIII, Art. 5, pp. 41-108, 126 Text Figures. 75c.
183. Lepidoptera of the Congo, Being a Systematic List of the Butterflies and Moths Collected by The American Museum of Natural History Congo Expedition, Together With Descriptions of Some Hitherto Undescribed Species. By W. J. Holland, 1920, Bulletin, XLIII, Art. 6, pp. 109-369, 9 text figures, Pls. vi-xiv. \$3.00
184. New Species and Synonymy of American Cynipidæ. By Alfred C. Kinsey, 1920, Bulletin, XLII, Art. 5, pp. 293-317, Pls. xx-xxvii. In Press.
185. Life Histories of American Cynipidæ. By Alfred C. Kinsey, 1920, Bulletin, XLII, Art. 6, pp. 319-357, Pls. xxviii-xxxii. In Press.
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187. Additions to the Ant Fauna of the West Indies and Central America. By William M. Mann, 1920, Bulletin, XLII, Art. 8, pp. 403-439, 10 test figures. In Press.
188. Notes on American Lepidoptera with Descriptions of New Varieties. By Frank E. Watson and Wm. P. Comstock, 1920, Bulletin, XLII, Art. 10, pp. 447-457. In Press.
189. Some Neotropical Meliponid Bees. By T. D. A. Cockerell, 1920, Bulletin, Art. 11, pp. 459-468. In Press.
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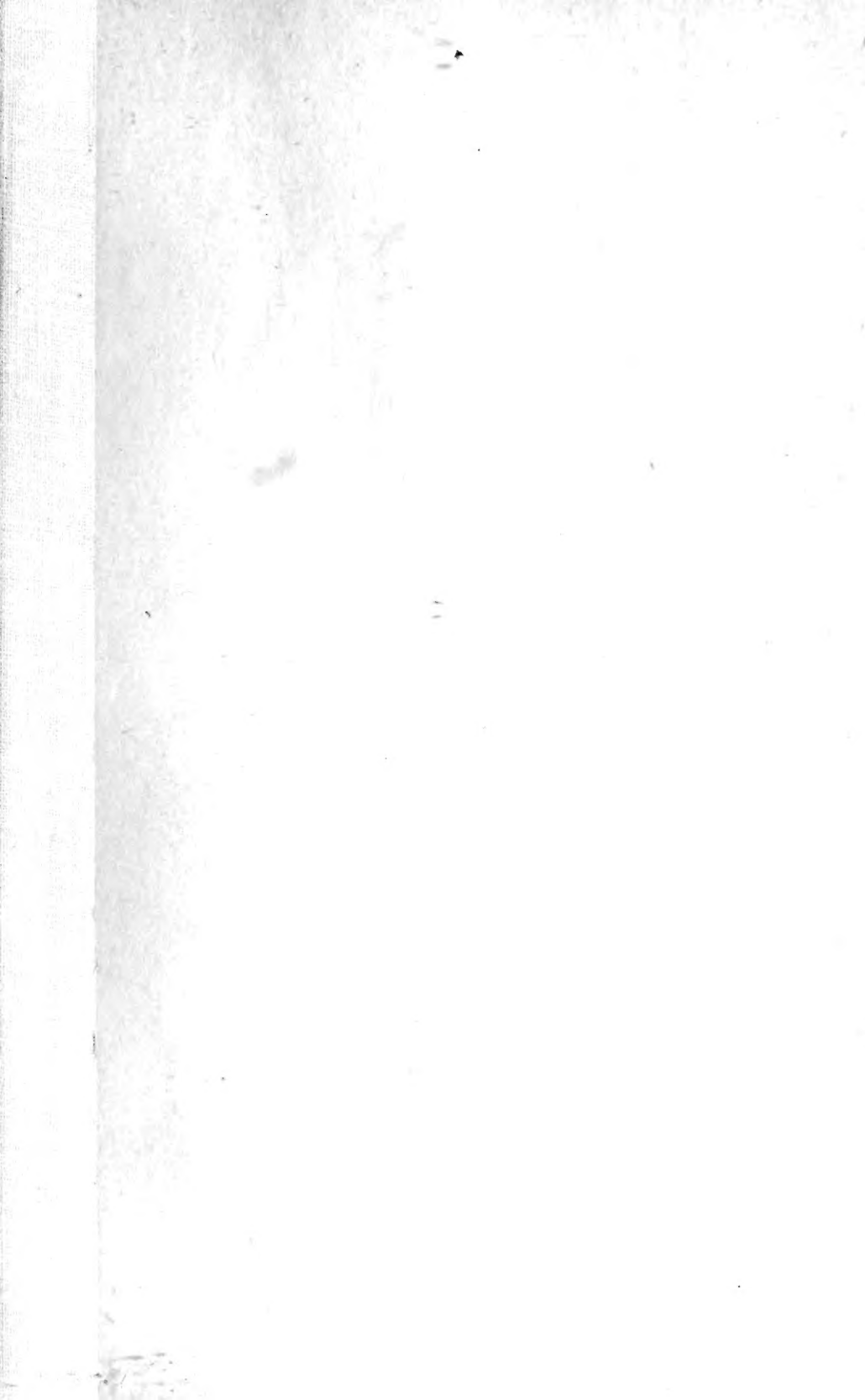
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