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**CATALOG OF THE PRIMARY TYPES OF
BOMBYLIIDAE (DIPTERA)
IN THE ENTOMOLOGICAL COLLECTIONS OF
THE MUSEUM OF COMPARATIVE ZOOLOGY,
WITH DESIGNATIONS OF LECTOTYPES**

NEAL L. EVENHUIS¹

ABSTRACT. One hundred and nine holotypes, lectotypes, and syntypes of Bombyliidae deposited in the entomological collections of the Museum of Comparative Zoology are listed. Lectotypes are designated for 27 taxa based on material in MCZ.

INTRODUCTION

This catalog lists the primary types of 109 taxa of Bombyliidae located in the entomological collections of the Museum of Comparative Zoology, Harvard University, Cambridge (MCZ). Fifty-seven of these taxa are represented by holotypes, 17 by syntype series, and 35 by lectotypes. All but one of the types listed here are deposited in the general collection of the MCZ. The unique male holotype of *Epibates harrisi* Osten Sacken is deposited in the Thaddeus W. Harris collection, which is maintained separately from the general collection. Twenty-seven new lectotype designations are recorded herein including two by Jack C. Hall, University of California, Riverside. Of the remaining 25 new lectotypes, three are designated in Hall and Evenhuis (1981). The format used here follows that of Radovsky *et al.* (1976) with modifications. Information presented in brackets [] is data additional to or corrected from data recorded in the original description. The present combination of each taxon

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listed, if it differs from the original combination, is also included after the remarks section under each taxon concerned.

The majority of species recorded here were described by Loew in his "Centuries," Osten Sacken in his "Western Diptera," and C.W. Johnson in various publications. Most of the types or type series in the collections carry a red label with a type register number placed there by Nathan Banks when he curated the collection. Recent additions to the type collection carry a similar label with a type number placed there by various curatorial technicians since Banks. Banks' type labeling has posed problems because he sometimes failed to label *all* of the syntypes in a syntype series or labeled *more* than the original description of that particular taxon was based upon (this is especially true for many of Loew's species). In compiling this catalog, all original descriptions were checked to make sure the correct number of syntypes were located and labeled. Discrepancies in the number of specimens found versus the number of specimens upon which that species was based are noted in the remarks section under each taxon concerned. In some cases, syntypes of certain taxa were found to be located in other museums. These museums include the United States National Museum of Natural History, Washington, D.C. (USNM), the American Museum of Natural History, New York (AMNH), the Snow Collection at the University of Kansas, Lawrence (SNOW) and the Zoologisches Museum of the Museum für Naturkunde der Humboldt-Universität, Berlin (ZMHU). This information is supplied in the remarks section under each taxon concerned.

Some syntypes of the bombyliid taxa described by Osten Sacken in "Biologia Centrali-Americana" are deposited in the MCZ. Lectotypes for most of these species were designated by Painter and Painter (1962) from material in the British Museum (Natural History), where in most cases the majority of the syntypes of these particular taxa are housed. Specimens of these species represented in the MCZ carry labels signifying that the lectotype for that species is in the BMNH.

SPECIES-GROUP INVENTORY

| | | |
|---|--------------|-------|
| adusta Loew, Anthrax | SYNTYPES 2 ♀ | 12672 |
| 1869 <i>Berliner Entomol. Z.</i> 13: 26 | | pin |
| CUBA: [no further data] Gundlach | | |

The specimens in the MCZ are left here as syntypes pending revision of the genus.

Present name: *Villa adusta* (Loew)

agassizi Loew, **Exoprosopa** HOLOTYPE ♀ 12635
1869 *Berliner Entomol. Z.* **13**: 16 pin
UNITED STATES: California: [no further data] Agassiz

albicapillus Loew, **Bombylius** LECTOTYPE ♀ 12686
1872 *Berliner Entomol. Z.* **16**: 78-79 pin
UNITED STATES: [California]: San Francisco [no date]
H. Edwards

Lectotype designated by Evenhuis *in* Hall and Evenhuis (1980: 6).

albidipennis Loew, **Geron** HOLOTYPE ♂ 12713
1869 *Berliner Entomol. Z.* **13**: 174 pin
UNITED STATES: California: [no further data] Agassiz

aldrichi Johnson, **Phthiria** SYNTYPES 2 ♂, 1 ♀ 7555
1903 *Psyche* **10**: 184 pin
UNITED STATES: Idaho: Caldwell 24.IV.1901 C.W. Johnson
Collection

These specimens are left as syntypes pending revision of the genus.

Present name: *Phthiria (Poecilognathus) aldrichi* Johnson

alpha Osten Sacken, **Anthrax** LECTOTYPE ♀ 12660
1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 239-40

UNITED STATES: Wyoming: Cheyenne 21.VIII. O. Sacken

Four (three male, one female) of the five specimens on which Osten Sacken based his description of *alpha* have been located at the MCZ. The fifth syntype is deposited in AMNH. The best preserved of the MCZ material, the female, is here designated *lectotype*.

Present name: *Poecilanthrax alpha* (Osten Sacken)

amabilis Osten Sacken, **Ploas** LECTOTYPE ♂ 12703
1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 261-62

UNITED STATES: California: Yosemite 5.VI. O. Sacken

Osten Sacken based his description of *amabilis* on two female and one male. The male is here designated *lectotype*.

Present name: *Conophorus amabilis* (Osten Sacken)

- arenicola** Johnson, **Anthrax lateralis** LECTOTYPE ♂ 7548
 1908 *Psyche* 15: 15 pin
 UNITED STATES: New Jersey: Clementon 16.V. 1917
 C.W. Johnson Collection
Lectotype male and *allolectotype* female designated herein by J.C. Hall.
 Present name: *Villa lateralis arenicola* (Johnson)
- arizonicus** Banks, **Systropus** SYNTYPES 2 ♂ 13484
 1909 *Entomol. News* 20: 18 pin
 UNITED STATES: Arizona: Palmerlee [no date] N. Banks
 Collection
 These specimens are left as syntypes pending revision of the genus.
- atratura** Loew, **Ploas** HOLOTYPE ♀ 12698
 1872 *Berliner Entomol. Z.* 16: 79-80 pin
 UNITED STATES: California: [no further data] H. Edwards
 Present name: *Conophorus atratulus* (Loew)
- atriceps** Loew, **Bombylius** LECTOTYPE ♂ 12688
 1863 *Berliner Entomol. Z.* 7: 301 pin
 UNITED STATES: Florida: [no further data] O. Sacken
 Lectotype designated by Evenhuis *in* Hall and Evenhuis (1980: 15).
- aurifer** Osten Sacken, **Bombylius** LECTOTYPE ♀ 12691
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 249-50
 UNITED STATES: California: Webber Lake 26.VII.
 O. Sacken
 Lectotype designated by Evenhuis *in* Hall and Evenhuis (1980: 18).
- banksi** Johnson, **Dipalta** HOLOTYPE ♂ 13485
 1921 *Occas. Pap. Boston Soc. Nat.* pin
Hist. 5: 12-13
 UNITED STATES: Virginia: Great Falls 12.IX. Collection
 N. Banks
- barbatus** Osten Sacken, **Anastoechus** LECTOTYPE ♂ 12719
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 252-53
 UNITED STATES: Wyoming: Cheyenne 21.VIII. O. Sacken
 Lectotype designated by Hall *in* Hall and Evenhuis (1981: 153-54).

- bifurca** Loew, **Exoprosopa** HOLOTYPE ♀ 12636
 1869 *Berliner Entomol. Z.* 13: 15-16 pin
 UNITED STATES: California: [no further data] Agassiz

Loew's description of *bifurca* was apparently based on a single specimen because there is no range of measurements recorded. There are two female specimens in the MCZ labeled as types. The one in the best condition is considered to be the holotype. It fits Loew's description and measurements and carries a label "bifurca m." in Loew's handwriting. The other specimen is denuded, smaller than the holotype, and carries a label "bifurca" in Banks' handwriting. The latter specimen probably does not belong to the original type series.

- bigradata** Loew, **Anthrax** HOLOTYPE [♀] 12655
 1869 *Berliner Entomol. Z.* 13: 23-24 pin
 CUBA: [no further data] Gundlach

Original description incorrectly cites sex of type as "♂".

- borealis** Johnson, **Phthiria** HOLOTYPE ♀ 27054
 1910 *Psyche* 17: 229 pin
 UNITED STATES: Maine: Fort Kent 7.VIII. 1910
 C.W. Johnson Collection

Present name: *Phthiria (Poecilognathus) borealis* Johnson

- brevicornis** Loew, **Sparnopoli** SYNTYPES 2 ♀ 12723
 1872 *Berliner Entomol. Z.* 16: 79 pin
 UNITED STATES: Texas: [no further data] Belfrage

Though Loew gives no range of measurements, two specimens are labeled as types in the MCZ. They are left here as syntypes until their type status can be clarified.

- cachinnans** Osten Sacken, **Bombylius** LECTOTYPE ♂ 12693
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 250
 UNITED STATES: California: Sonoma County 2.IV.-9.V.
 R. Osten Sacken

Male and female on same pin. Lectotype designated by Evenhuis *in* Hall and Evenhuis (1980: 29).

- calvus** Loew, **Geron** SYNTYPES 2 ♀ 12711
 1863 *Berliner Entomol. Z.* 7: 303-04 pin
 UNITED STATES: New York [no further data]

Loew's description does not include a range of measurements though two specimens are labeled as types in the MCZ. Until this discrepancy can be clarified, they are left as syntypes.

- candidulus** Loew, **Systoechus** LECTOTYPE ♂ 12716
 1863 *Berliner Entomol. Z.* 7: 302 pin
 UNITED STATES: Wisconsin: [no further data] O. Sacken
 Loew's description cites a range of measurements though only one male was located in the MCZ. The male is here designated *lectotype*.
- canuta** Hall, **Thevenemyia** HOLOTYPE ♂ 31339
 1969 *Univ. Calif. Publ. Entomol.* pin
 56: 28-29 Fig. 8
 UNITED STATES: Arizona: Reef 10.X. C.W. Johnson Collection
- capito** Osten Sacken, **Pantarbes** LECTOTYPE ♂ 12720
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 256
 UNITED STATES: California: Sonoma County 2.IV.-9.V.
 R. Osten Sacken
Lectotype male designated herein by J.C. Hall.
- cervinus** Loew, **Aphoebantus** HOLOTYPE ♀ 12684
 1872 *Berliner Entomol. Z.* 16: 76-77 pin
 UNITED STATES: Texas: [no further data] Belfrage
- ceyx** Loew, **Anthrax** LECTOTYPE ♂ 12664
 1869 *Berliner Entomol. Z.* 13: 19 pin
 UNITED STATES: Virginia [no further data]
 Loew's description cites a range of measurements though only one male was found in the MCZ. It is here designated *lectotype*.
 Present name: *Poecilanthrax demogorgon* (Walker)
- contigua** Loew, **Argyromoeba** HOLOTYPE ♀ 12679
 1869 *Berliner Entomol. Z.* 13: 30-31 pin
 UNITED STATES: Virginia: [no further data] Loew
 Present name: *Anthrax argyropygus argyropygus*
 Wiedemann
- coquilletti** Johnson, **Phthiria** SYNTYPES 2 ♂, 4 ♀ 7554
 1902 *Can. Entomol.* 34: 240-41 pin
 UNITED STATES: New Jersey: 1 ♂, 4 ♀, Riverton 4.VII.1891;
 1 ♂, Jamesburg 4.VII.1891 C.W. Johnson Collection

Three syntypes are in USNM; one syntype is in SNOW; these specimens are left as syntypes pending generic revision.

Present name: *Phthiria* (*Poecilognathus*) *coquilletti* Johnson

cubana Loew, *Exoprosopa* SYNTYPES 1 ♂, 1 ♀ 12641
1869 *Berliner Entomol. Z.* **13**: 14-15 pin
CUBA: [no further data] Gundlach

Two syntypes are also located in ZMHU. These specimens are left as syntypes pending generic revision.

curta Loew, *Anthrax* HOLOTYPE ♂ 12654
1869 *Berliner Entomol. Z.* **13**: 22 pin
UNITED STATES: California: [no further data] Agassiz
Present name: *Hemipenthes curta* (Loew)

cycanocephala Johnson, *Phthiria* HOLOTYPE ♂ 27053
1903 *Psyche* **10**: 184 pin
UNITED STATES: Massachusetts: Cohasset 8.IX.
C.W. Johnson Collection
Present name: *Phthiria* (*Poecilognathus*) *cycanocephala* Johnson

decora Loew, *Exoprosopa* HOLOTYPE ♀ 12630
1869 *Berliner Entomol. Z.* **13**: 13 pin
UNITED STATES: Wisconsin: [no further data] Kennicott

delila Loew, *Argyromoeba* HOLOTYPE ♀ 12674
1869 *Berliner Entomol. Z.* **13**: 28 pin
UNITED STATES: California: [no further data] Agassiz
Present name: *Anthrax delila* (Loew)

diagonalis Loew, *Anthrax* HOLOTYPE ♀ 12656
1869 *Berliner Entomol. Z.* **13**: 21 pin
UNITED STATES: California: [no further data] Agassiz
Present name: *Paravilla diagonalis* (Loew)

dodrans Osten Sacken, *Exoprosopa* SYNTYPES 2 ♂ 12634
1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 234-35
UNITED STATES: [Colorado]: Colorado Springs [no date]
O. Sacken

These specimens are left here as syntypes pending generic revision.

- dorcadion** Osten Sacken, **Exoprosopa** LECTOTYPE ♀ 12631
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 231-33

UNITED STATES: Maine [no further data]

Osten Sacken's original description of *dorcadion* is based on syntypes from "Summit Station, Central Pacific Railroad, California (July 17); Webber Lake, Sierra Nevada, California (July 26); Shasta district, California (H. Edwards); Washington Territory (the same); Georgetown, Colorado (August 12); Twin Lake Creek, Colorado (W.L. Carpenter); White Mountains, New Hampshire (H.K. Morrison); Maine — 2 specimens from Denver, Colorado (Uhler)." The MCZ has all but the New Hampshire and Shasta district specimens. The Summit Station specimen also carries the label "Sierra Nevada." All the specimens are females except for the one male from Denver, Colorado. The female specimen from Maine is in the best condition and is here designated *lectotype*. Three syntypes are also deposited in AMNH.

- doris** Osten Sacken, **Exoprosopa** SYNTYPE ♀ 12632
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 235-36

UNITED STATES: Nevada: Humboldt Station 29.VII.
 O. Sacken

One syntype (headless) is deposited in AMNH. These specimens are left as syntypes pending generic revision.

- edwardsii** Loew, **Allocotus** HOLOTYPE [♂] 12704
 1872 *Berliner Entomol. Z.* **16**: 81-82 pin
 UNITED STATES: California: [no further data] H. Edwards

Original description incorrectly states sex as "♀".

Present name: *Paracosmus edwardsii* (Loew)

- egerminans** Loew, **Phthiria** LECTOTYPE [♀] 12708
 1872 *Berliner Entomol. Z.* **16**: 80-81 pin
 UNITED STATES: California: [no further data] H. Edwards

Original description incorrectly cites sex of type as "♂". Loew's description cites a range of measurements though only one female was found in the MCZ. It is here designated *lectotype*.

- eremita** Osten Sacken, **Exoprosopa** HOLOTYPE ♂ 12637
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 236

UNITED STATES: California: Shasta District [15.VII.]
 H. Edwards

- euplanes** Loew, **Argyromoeba** HOLOTYPE ♀ 12681
 1869 *Berliner Entomol. Z.* **13**: 30 pin
 CUBA: [no further data] Gundlach
 Present name: *Anthrax euplanes* (Loew)
- fenestrata** Osten Sacken, **Ploas** LECTOTYPE ♀ 12702
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 260-61
 UNITED STATES: California: San Raphael 12.IV. O. Sacken
 Osten Sacken based his description of *fenestrata* on two males and one female. Of these syntypes, the best preserved (the female) is here designated *lectotype*.
 Present name: *Conophorus fenestratus* (Osten Sacken)
- flaviceps** Loew, **Anthrax** LECTOTYPE ♀ 12663
 1869 *Berliner Entomol. Z.* **13**: 18-19 pin
 MEXICO: Tamaulipas [no further data]
 Of the two female syntypes of this species in the MCZ, the best preserved is here designated *lectotype*.
 Present name: *Poecilanthrax flaviceps* (Loew)
- fraudulentus** Johnson, **Bombylius** HOLOTYPE ♂ 7552
 1907 *Psyche* **14**: 99-100 pin
 UNITED STATES: Massachusetts: Provincetown 27.VI.1904
 C.W. Johnson Collection
- fuliginosa** Loew, **Anthrax** HOLOTYPE ♂ 12661
 1869 *Berliner Entomol. Z.* **13**: 20 pin
 UNITED STATES: California [no further data]
 Specimen rubbed.
 Present name: *Poecilanthrax fuliginosus* (Loew)
- fur** Osten Sacken, **Argyromoeba** LECTOTYPE ♂ 12678
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 244-45
 UNITED STATES: Texas: Dallas [no date] Boll
 Osten Sacken based his description of *fur* on one male and two female syntypes. The best preserved of these (the male) is here designated *lectotype*.
 Present name: *Anthrax limatulus fur* (Osten Sacken)
- gazophylax** Loew, **Exoprosopa** HOLOTYPE ♀ 12629

- 1869 *Berliner Entomol. Z.* **13**: 12-13 pin
 UNITED STATES: California: [no further data] Agassiz
 Head missing.
 Present name: *Ligyra gazophylax* (Loew)
- gibbus** Loew, **Lordotus** HOLOTYPE ♀ 12724
 1863 *Berliner Entomol. Z.* **7**: 303 pin
 MEXICO: [Tamaulipas]: Matamoros [no further data]
 The label data cites the locality as "Matamoros."
- haemorrhoeicus** Loew, **Bombylius** HOLOTYPE ♂ 12696
 1863 *Berliner Entomol. Z.* **7**: 300 pin
 CUBA: [no further data] [Gundlach]
 Original description cites collector as "Riehl," label data cites "Gundlach."
 Present name: *Heterostylum haemorrhoeicum* (Loew)
- harrisi** Osten Sacken, **Epibates** HOLOTYPE ♂ 26400
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 273
 [No locality label] H. Gray
 Hall (1969: 38) proposed a lectotype male (MCZ Type No. 31340) and allolectotype female for *harrisi* under the assumption that the original type specimen was lost.¹ The type male is, in fact, present in the T.W. Harris Collection [in MCZ] as described by Osten Sacken.
 Present name: *Thevenemyia harrisi* (Osten Sacken)
- humilis** Osten Sacken, **Phthiria** HOLOTYPE ♂ 12710
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 264
 UNITED STATES: California: Sonoma County 4.VII.
 O. Sacken
- incanus** Johnson, **Bombylius** HOLOTYPE ♂ 7553
 1907 *Psyche* **14**: 97-98 pin
 UNITED STATES: Massachusetts: Provincetown 2.VI.1904
 C.W. Johnson Collection
 Present name: *Bombylius (Zephyrectes) incanus* Johnson

¹Though neotypes should be proposed for lost or destroyed types, Hall mistakenly proposed a lectotype and allolectotype which, therefore, have no validity nomenclatorially.

- johnsoni** Painter, **Geron** HOLOTYPE ♂ 27266
 1932 *Trans. Am. Entomol. Soc.* pin
58: 155
 UNITED STATES: Massachusetts: Horseneck Beach 30.
 VII.1913 C.W. Johnson Collection
- lancifer** Osten Sacken, **Bombylius** LECTOTYPE ♂ 12692
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 251
 UNITED STATES: California: [no further data] Sacken
 Lectotype male designated by Evenhuis *in* Hall and Evenhuis (1980: 57).
- lepidotooides** Johnson, **Chrysanthrax** HOLOTYPE ♂ 7550
 1919 *Psyche* **26: 12** pin
 UNITED STATES: New Jersey: Iona 16.VI.1902
 C.W. Johnson Collection
- limbata** Loew, **Ploas** LECTOTYPE ♀ 12700
 1869 *Berliner Entomol. Z.* **13: 31** pin
 UNITED STATES: New Mexico [no further data]
 Specimen badly rubbed; right wing glued to point below specimen; head, left wing,
 left fore- and hind- and right mid- and hindlegs beyond coxae missing. Loew's
 description cites a range of measurements though only one female was found in the
 MCZ. It is here designated *lectotype*.
 Present name: *Conophorus limbatus* (Loew)
- luctifer** Osten Sacken, **Epibates** HOLOTYPE ♂ 12728
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 271-72
 [CANADA: British Columbia]: Vancouver Island [no date]
 G.R. Crotch
 Present name: *Thevenemyia luctifera* (Osten Sacken)
- macer** Loew, **Systropus** LECTOTYPE ♀ 12726
 1863 *Berliner Entomol. Z.* **7: 305** pin
 UNITED STATES: Pennsylvania [no further data]
 Of the three syntypes of *macer* (1 male, 2 females) in the MCZ, the best preserved
 of these (a female) is here designated *lectotype*.
- macropterus** Loew, **Geron** HOLOTYPE ♂ 12712

- 1869 *Berliner Entomol. Z.* pin
13: 172-73
 UNITED STATES: New York: Geneseo [no further data]
 Head and thorax damaged; abdomen beyond third segment missing.
 Present name: *Geron (Empidigeron) calvus* Loew
- magnus** Osten Sacken, **Epibates** HOLOTYPE ♀ 12731 pin
 1877 *Bull. U.S. Geol. Geogr. Surv.*
Terr. 3: 272-73
 [CANADA: British Columbia]: Vancouver Island [no date]
 G.R. Crotch
 Present name: *Thevenemyia magna* (Osten Sacken)
- marginatus** Osten Sacken, **Epibates** HOLOTYPE ♀ 12730 pin
 1877 *Bull. U.S. Geol. Geogr. Surv.*
Terr. 3: 272
 UNITED STATES: California: San Francisco [no date]
 H. Edwards
 Present name: *Thevenemyia marginata* (Osten Sacken)
- metopium** Osten Sacken, **Bombylius** HOLOTYPE ♂ 12690 pin
 1877 *Bull. U.S. Geol. Geogr. Surv.*
Terr. 3: 249
 UNITED STATES: California: [San Francisco] 19.IV
 O. Sacken
- modestus** Loew, **Leptochilus** SYNTYPES 1 ♂, 1 ♀ 12685 pin
 1872 *Berliner Entomol. Z. 16:* 77-78
 UNITED STATES: Texas: [no further data] Belfrage
 The specimens are left here as syntypes pending revision of the genus.
 Present name: *Epaemus modestus* (Loew)
- molitor** Loew, **Anthrax** HOLOTYPE ♀ 12652 pin
 1869 *Berliner Entomol. Z. 13:* 26-27
 UNITED STATES: California: [no further data] Agassiz
 Head glued to thorax.
 Present name: *Villa molitor* (Loew)
- mucorea** Loew, **Anthrax** HOLOTYPE ♀ 12651

- 1869 *Berliner Entomol. Z.* **13**: 27 pin
 UNITED STATES: Nebraska: [no further data] [F.V. Hayden]
 Collector recorded in Osten Sacken (1903: 95).
 Present name: *Villa mucorea* (Loew)
- muricatus** Osten Sacken, **Epibates** HOLOTYPE ♂ 12729
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 272
 UNITED STATES: California: Sierra Nevada [no date]
 H. Edwards
 Present name: *Thevenemyia muricata*. (Osten Sacken)
- mus** Osten Sacken, **Triodites** LECTOTYPE ♂ 12683
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 246-47
 UNITED STATES: Utah: Salt Lake City 1.VIII. O. Sacken
 Of the three syntypes of *mus* (1 male, 2 females) located in the MCZ, the best preserved of these (the male) is here selected as *lectotype*.
 Present name: *Aphoebantus mus mus* (Osten Sacken)
- nigricauda** Loew, **Anthrax** HOLOTYPE ♀ 12650
 1869 *Berliner Entomol. Z.* **13**: 24 pin
 UNITED STATES: Massachusetts: [no further data] Scudder
 Head missing.
 Present name: *Villa fulviana nigricauda* (Loew)
- nigripennis** Loew, **Ploas** LECTOTYPE ♀ 12697
 1872 *Berliner Entomol. Z.* **16**: 80 pin
 UNITED STATES: California: [no further data] H. Edwards
 Loew's description cites a range of measurements though only one female was found in the MCZ. It is here designated *lectotype*.
 Present name: *Conophorus nigripennis* (Loew)
- notata** Loew, **Phthiria** HOLOTYPE ♀ 12706
 1863 *Berliner Entomol. Z.* **7**: 113-14 pin
 UNITED STATES: California: [no further data] Agassiz
 Present name: *Phthiria (Poecilognathus) loewi* Painter
- nubifera** Loew, **Exoprosopa** LECTOTYPE ♂ 12639
 1869 *Berliner Entomol. Z.* **13**: 16 pin

CUBA: [no further data] [Poey]

Original description cites collector as "Gundlach," label data cites "Poey." Loew's description cites a range of measurements though only one male was found in the MCZ. The male is here designated *lectotype*.

obesula Loew, **Ploas** SYNTYPES 3 ♂ 12699
 1872 *Berliner Entomol. Z.* **16**: 80 pin
 UNITED STATES: California: [no further data] H. Edwards

Loew's original description of *obesula* was based on an unstated number of males and females. Only three males were found in the MCZ. They are left here as syntypes until the genus is revised.

Present name: *Conophorus obesulus* (Loew)

obsoleta Loew, **Argyromoeba** HOLOTYPE [♀] 12675
 1869 *Berliner Entomol. Z.* **13**: 29 pin
 UNITED STATES: Missouri [no further data]

Original description incorrectly states sex of type as "♂".

Present name: *Anthrax limatulus limatulus* Say

occidentalis Johnson, **Spogostylum** SYNTYPES 2 ♀ 7547
 1913 *Bull. Am. Mus. Nat. Hist.* **32**: 56 pin

UNITED STATES: 1 ♀, Colorado: Denver 5.VIII.1897; 1 ♀, Washington: Seattle [no further data] C.W. Johnson Collection

These specimens are left here as syntypes pending generic revision.

Present name: *Anthrax analis* Say

oreas Osten Sacken, **Systoechus** LECTOTYPE ♂ 12718
 1877 *Bull. U.S. Geol. Geogr. Surv. Terr.* **3**: 254 pin

UNITED STATES: California: Webber Lake 22.VII. O. Sacken

Lectotype designated by Hall *in* Hall and Evenhuis (1981: 147).

palliata Loew, **Anthrax** HOLOTYPE ♀ 12657
 1869 *Berliner Entomol. Z.* **13**: 20-21 pin

UNITED STATES: Illinois: [no further data] Osten Sacken

Present name: *Paravilla palliata* (Loew)

- parva** Loew, **Exoprosopa** LECTOTYPE ♂ 12640
 1869 *Berliner Entomol. Z.* **13**: 17 pin
 CUBA: [no further data] Gundlach
 Though Loew's description cites a range of measurements, only one male was located in the MCZ. It is here designated *lectotype*.
 Present name: *Neodiplocampta (Neodiplocampta) parva* (Loew)
- parvicornis** Loew, **Anthrax** HOLOTYPE ♂ 12658
 1869 *Berliner Entomol. Z.* **13**: 23 pin
 UNITED STATES: Illinois: [Chicago] [no date] Osten Sacken
 Present name: *Rhynchanthrax parvicornis* (Loew)
- pauper** Loew, **Argyromoeba** HOLOTYPE ♀ 12677
 1869 *Berliner Entomol. Z.* **13**: 29-30 pin
 UNITED STATES: Illinois [no further data]
 Present name: *Anthrax pauper* (Loew)
- pertusa** Loew, **Anthrax** HOLOTYPE ♂ 12659
 1869 *Berliner Entomol. Z.* **13**: 18 pin
 UNITED STATES: New Mexico: [10.IV.] [no further data]
 Present name: *Thyridanthrax pertusa* (Loew)
- planus** Osten Sacken, **Lordotus** HOLOTYPE ♂ 12725
 1877 *Bull. U.S. Geol. Geogr. Surv. Terr.* **3**: 258-59 pin
 UNITED STATES: California: Marin County [no date]
 O. Sacken
- proboscidea** Loew, **Anthrax** HOLOTYPE ♂ 12653
 1869 *Berliner Entomol. Z.* **13**: 17-18 pin
 MEXICO: Sonora: [no further data] Schott
 Present name: *Lepidanthrax proboscideus* (Loew)
- pulchellus** Loew, **Bombylius** LECTOTYPE ♂ 12687
 1863 *Berliner Entomol. Z.* **7**: 300 pin
 UNITED STATES: Illinois [no further data]
 Lectotype designated by Evenhuis *in* Hall and Evenhuis (1980:79).
- quinenotata** Johnson, **Phthiria** HOLOTYPE ♀ 7556

- 1903 *Psyche* **10**: 185 pin
 UNITED STATES: Colorado: Grand Junction 25.V.1900
 C.W. Johnson Collection
 Present name: *Oligodranes quinquenotata* (Johnson)
- ravus** Loew, **Bombylius** HOLOTYPE ♀ 12694
 1863 *Berliner Entomol. Z.* **7**: 301-02 pin
 MEXICO [no further data]
 Present name: *Bombylius (Zephyrectes) ravus* Loew
- rufula** Osten Sacken, **Ploas** LECTOTYPE ♂ 12701
 1877 *Bull. U.S. Geol. Geogr. Surv.*
Terr. **3**: 261 pin
 UNITED STATES: California: San Geronimo 19.IV.
 O. Sacken
 Present name: *Conophorus rufulus* (Osten Sacken)
- sagata** Loew, **Anthrax** LECTOTYPE ♂ 12671
 1869 *Berliner Entomol. Z.* **13**: 21-22 pin
 MEXICO: [Tamaulipas]: Matamoros [no further data]
 Head missing; label data cites locality as "Matamoros". Loew's description cites a range of measurements, though only one male was found in the MCZ. It is designated here as *lectotype*.
 Present name: *Hemipenthes sagata* (Loew)
- scolopax** Osten Sacken, **Phthiria** SYNTYPES [2♂, 1♀] 12789
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 263-64
 UNITED STATES: Colorado: Manitou 17-18.VIII. O. Sacken
 The original description of *scolopax* was based on one male and three females. Two male and one female syntypes are located in the MCZ. These specimens are left here as syntypes pending generic revision.
 Present name: *Phthiria (Poecilognathus) scolopax* Osten Sacken
- scrobiculata** Loew, **Anthrax** LECTOTYPE ♂ 12648
 1869 *Berliner Entomol. Z.* **13**: 24-25 pin
 UNITED STATES: Illinois [no further data]
 Of the two male syntypes of *scrobiculata* in the MCZ, the best of these is here designated *lectotype*.
 Present name: *Villa scrobiculata* (Loew)

seminigra Loew, **Hemipenthes** HOLOTYPE [♂] 12673
 1869 *Berliner Entomol. Z.* **13**: 27-28 pin
 CANADA: Saskatchewan: [no further data] Kennicott
 Head missing; original description incorrectly cites sex of type as "♀"
 Present name: *Hemipenthes seminigra* Loew

semirufus Loew, **Bombylius** LECTOTYPE ♂ 12695
 1872 *Berliner Entomol. Z.* **16**: 78 pin
 HAITI: [Gérémie]: [no date] P.R. Uhler

The location of Gérémie is cited from the label data. It was omitted from the original description. Of the two syntypes of *semirufus* (one male, one female) in the MCZ, the best preserved (the male) is here designated *lectotype*.

Present name: *Heterostylum semirufum* (Loew)

serpentina Osten Sacken, **Dipalta** LECTOTYPE ♀ 12646
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 237

UNITED STATES: California: Mt. Shasta District [no date]
 O. Sacken

Osten Sacken based his description of *serpentina* on one male and two female syntypes. The best preserved of these (a female) is here designated *lectotype*.

shawii Johnson, **Anthrax** HOLOTYPE ♂ 7549
 1908 *Psyche* **15**: 14-15 pin
 UNITED STATES: New Hampshire: Hampton 27.VIII. 1906
 S.A. Snow

The holotype also carries a type label reading "holotype no. 599".¹

Present name: *Villa shawii* (Johnson)

sima Osten Sacken, **Exoprosopa** LECTOTYPE [♂] 12628
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. **3**: 231-33

UNITED STATES: Nevada: Humboldt Station: Central Pacific Railroad [no further data]

Osten Sacken's original description of *sima* incorrectly cites the sex of the three syntypes as female. They are, in fact, all males. The best preserved is here designated *lectotype*.

¹This number probably pertains to Johnson's personal collection prior to MCZ accession (Woodley, personal communication).

slossonae Johnson, **Spogostylum** HOLOTYPE ♂ 7546
1913 *Bull. Am. Mus. Nat. Hist.* pin

32: 55

UNITED STATES: Kentucky: Cumberland Gap VII.1876 G.

Dimmock

Present name: *Anthrax aterrimus* (Bigot)

sordida Loew, **Exoprosopa** SYNTYPES [2♀] 12642
1869 *Berliner Entomol. Z.* 13: 14 pin

MEXICO: 1 ♀, Tamaulipas: [no further data]; 1 ♀, [Tamaulipas]; Matamoros [no further data]

Loew's original description of *sordida* cites an unspecified number of males and females. Only two males were found in the MCZ; label data cites locality of the latter syntype as "Matamoros." These specimens are left here as syntypes pending generic revision.

stellans Loew, **Argyromoeba** HOLOTYPE [♀] 12676
1869 *Berliner Entomol. Z.* 13: 28-29 pin

UNITED STATES: Oregon [no further data]

Right wing broken; original description incorrectly cites sex of type as "♂".

Present name: *Anthrax stellans* (Loew)

stenozona Loew, **Anthrax** LECTOTYPE ♀ 12649
1869 *Berliner Entomol. Z.* 13: 25 pin

UNITED STATES: Illinois [no further data]

A lectotype is here designated for the one female in MCZ as Loew's description cites a range of measurements, implying a series of specimens.

Present name: *Villa stenozona* (Loew)

subauratus Loew, **Geron** SYNTYPES 2 ♂, 1 ♀ 12714
1863 *Berliner Entomol. Z.* 7: 304-05 pin

UNITED STATES: Pennsylvania: [no further data] Osten

Sacken

The specimens are left here as syntypes until the genus is revised.

subvarius Johnson, **Bombylius** LECTOTYPE ♀ 7551
1907 *Psyche* 14: 98-99 pin

UNITED STATES: Pennsylvania: Lehigh Gap 26.VI.1901

H.L. Viereck

Lectotype female designated herein.

Present name: *Bombylius atriceps* Loew

- sulphurea** Loew, **Phthiria** HOLOTYPE ♀ 12705
 1863 *Berliner Entomol. Z.* 7: 113 pin
 UNITED STATES: New Jersey: [no further data] Glover
 Present name: *Phthiria (Poecilognathus) sulphurea* Loew
- titubans** Osten Sacken, **Exoprosopa** HOLOTYPE [♂] 12633
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 233-34
 UNITED STATES: [Colorado]: Denver [no date] O. Sacken
 Original description incorrectly states sex of type as "♀".
- trabalis** Loew, **Exoprosopa** HOLOTYPE ♀ 12638
 1869 *Berliner Entomol. Z.* 13: 13-14 pin
 MEXICO: [Veracruz]: Jalapa [no further data]
 Present name: *Exoprosopa anthracoides* Jaenicke
- validus** Loew, **Bombylius** LECTOTYPE ♂ 12689
 1863 *Berliner Entomol. Z.* 7: 300 - pin
 UNITED STATES: Virginia: [no further data] Osten Sacken
 Lectotype designated by Evenhuis *in* Hall and Evenhuis (1980: 90).
- virgata** Osten Sacken, **Toxophora** SYNTYPES 1 ♂, 1 ♀ 12727
 1877 *Bull. U.S. Geol. Geogr. Surv.* pin
Terr. 3: 266-67
 UNITED STATES: Georgia [no further data]
 Osten Sacken based his description of *virgata* on two males and two females from Georgia and Texas. A male and a female from Georgia are in the MCZ. The Texas specimens have not been located. These specimens are left here as syntypes pending generic revision.
- vitripennis** Loew, **Geron** SYNTYPES 2 ♂ 12713
 1869 *Berliner Entomol. Z.* 13: 173 pin
 UNITED STATES: "Middle States" [no further data]
 No locality labels on type specimens. Until the genus is revised they are left as syntypes.
- vulgaris** Loew, **Systoechus** LECTOTYPE ♂ 12717
 1863 *Berliner Entomol. Z.* 7: 302-03 pin
 UNITED STATES: Nebraska: [no further data] [F. V. Hayden]
 Lectotype designated by Hall *in* Hall and Evenhuis (1981: 151); original description incorrectly states collector as "Osten Sacken." Osten Sacken (1903: 95) gives the correct collector.

- webberi** Johnson, *Villa* HOLOTYPE ♂ 12680
 1919 *Psyche* 26: 11 pin
 UNITED STATES: Massachusetts: Lunenburg 3.VI.1914 [no
 collector]
 Present name: *Hemipenthes webberi* (Johnson)
- willistoni** Osten Sacken, *Pantarbes* HOLOTYPE ♂ 12722
 1887 *Biologia Centrali-Americana* pin
 1: 153
 UNITED STATES: Arizona: [no further data] O. Sacken
- xanthomeros** Marston, *Anthrax* HOLOTYPE ♀ 32555
 1970 *Smithson. Contrib. Zool.* pin
 43: 52-53 Pl. 3g
 BRITISH HONDURAS: Benque Viejo [no date] Father
 Stanton

GENUS-GROUP INVENTORY
 (indexed by present combination)

- Anastoechus: barbatus
 Anthrax: bigradata, contigua, delila, euplanes, fur, obsoleta, occi-
 dentalis, pauper, slossonae, stellans, xanthomeros
 Aphoebantus: cervinus, mus mus
 Bombylius (Bombylius): albicapillus, atriceps, aurifer, cachinnans,
 fraudulentus, lancifer, metopium, pulchellus, subvarius, validus
 Bombylius (Zephyrectes): incanus, ravus
 Chrysanthrax: lepidotoides
 Conophorus: amabilis, atratulus, fenestratus, limbatus, nigripennis,
 obesulus, rufulus
 Dipalta: banksi, serpentina
 Epacmus: modestus
 Exoprosopa: agassizi, bifurca, cubana, decora, dodrans, dorcadion,
 doris, eremita, nubifera, sima, sordida, titubens, trabalis
 Geron: albidipennis, calvus, johnsoni, macropterus, subauratus,
 vitripennis
 Hemipenthes: curta, sagata, seminigra, webberi
 Heterostylum: haemorrhoidicum, semirufum
 Lepidanthrax: proboscideus

Ligyra: gazophylax
Lordotus: gibbus, planus
Neodiplocampta (Neodiplocampta): parva
Oligodranes: quinquenotata
Pantarbes: capito, willistoni
Paravilla: diagonalis, palliata
Paracosmus: edwardsii
Phthiria (Phthiria): egerminans, humilis
Phthiria (Poecilognathus): aldrichi, borealis, coquilletti, cyanoceps,
loewi, scolopax, sulphurea
Poecilanthrax: alpha, ceyx, flaviceps, fuliginosus
Rhynchanthrax: parvicornis
Sparnopolius: brevicornis
Systoechus: candidulus, oreas, vulgaris
Systropus: arizonicus, macer
Thevenemyia: canuta, harrisi, luctifera, magna, marginata
Thyridanthrax: pertusa
Toxophora: virgata
Villa: adjusta, lateralis arenicola, molitor, mucorea, fulviana nigri-
cauda, scrobiculata, shawii, stenozone

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