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Class I, HEXAPODA.

Order I, HYMENOPTERA.

A LIST OF THE HYMENOPTERA OF THE PHILIPPINE ISLANDS, WITH DESCRIPTIONS OF NEW SPECIES.

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Considering the extent of the Philippine Islands, extending as they do over 1,200 miles of territory, our knowledge of the Hymenopterous fauna is singularly meager. More attention should be given to collecting these important insects. Since the islands came into the possession of the United States much material has been sent to the National Museum, and with the hope that more attention will be given to the collecting and study of this order in the Philippines, I give below a list of the known species, and describe most of the new species now in our collection.

The vast majority of the material, upon which this contribution is based, was received from Dr. P. L. Stangl, U. S. Army, and Father W. A. Stanton, of Manila.

Father Stanton's contributions to the National Museum, not only in this but in other orders, are especially valuable, and he has been eminently successful in discovering many new species in genera not before recorded from the Philippines.

I have arranged the list in systematic order, according to my scheme of classification, and have enumerated all families, whether

represented or not, in order to show how little we really know of the Philippine Hymenopterous fauna, the amount of work still to be done in the order, and to direct attention to collecting material in those families still unrepresented. I am convinced that most of these families will be found to have hundreds of representatives in the islands.

In this list only 183 species are recorded, a ridiculously small number considering the extent of territory covered. A good collector ought to take that number in a couple of days collecting in the Paratitica alone, by using the sweeping net.

Suborder I. HETEROPHAGA.

Superfamily I. APOIDEA.

Family I. APIDÆ.

1. *Apis dorsata* Fabr. Philippine Islands.
2. *Apis mellifera* Linné. Philippines (introduced).
3. *Apis nigrocincta* Smith. Manila (Father W. A. Stanton).
4. *Apis zonata* Smith. Bacoor, P. I. A single ♂ received from Dr. P. L. Stangl.
5. *Apis unicolor* Latr. Luzon, Cagayán, Alcalá.

Family II. BOMBIDÆ.

None.

Family III. EUGLOSSIDÆ.

None.

Family IV. PSITHYRIDÆ.

None.

Family V. ANTHOPHORIDÆ.

6. *Anthophora cingulata* Fabr. Philippines.
7. *Anthophora zonata* Linné. Manila (M. L. Bobb).

Family VI. NOMADIDÆ.

8. *Crocisa lamprosoma* Boisd. Luzon, Manila, Bulacan, Lolomboy. Philippines.
9. *Crocisa nitidula* Latr. Philippines. Cape Eugeno.
10. *Nomada iusca* Smith. Manila. One ♂ specimen received from W. A. Stanton.

Family VII. CERATINIDÆ.

11. *Ceratina compacta* Smith. Philippines.
12. *Ceratina hieroglyphica* Smith. Philippines.
13. *Ceratina philippinensis*, new species.

♀. Length 6.5 to 7 mm. Black, punctate, the head with a slight æneous tinge in certain lights, more coarsely and closely punctate, especially on the vertex, marked with yellow as follows: A long stripe on temples back of eyes, two oblique, nearly confluent, spots on the forehead in front of the ocelli, a hat-shaped mark (■) on the face, a transverse line above this mark, and a band along the inner orbits, narrowed posteriorly and extending to beyond the insertion of the antennæ, yellow; labrum, a faint spot near middle of the mandibles, the scape, except a black spot above, and the palpi, pale yellow; the upper margin of the pronotum, the tubercles, the tegulæ, two longitudinal lines on the disk of the mesonotum, and a stripe at the sides next the tegulæ, yellowish-white; the scutellum and bands at apex of abdominal segments 1 to 5 are yellow; the band on the third segment is broadly interrupted medially, that on the fourth very slightly interrupted by a slender median black line or at least is incised medially; the bands on segments 2 to 4 are broadly sinuated from near the middle and broadened towards the lateral margin; the ventral segments 1 to 4 are yellow at apex, the last being wholly black; the front femora, except a black band at base, the middle and hind femora at apex, and all the tibiæ except a stripe on the hind tibiæ within, and the tarsi, are pale yellowish or yellowish-white. Wings hyaline, the stigma and veins dark brown or brown-black; the second and third cubital cells each receive a recurrent nervure.

Type.—No. 7692, U. S. National Museum.

Manila. Described from four specimens received from Father W. A. Stanton.

Family VIII. XYLOCOPIDÆ.

14. *Xylocopa æstnans* Linné. Luzon, Cagán, Alcalá.
15. *Xylocopa bryorum* Fab. Luzon.
16. *Xylocopa bombiformis* Smith. Manila (Father W. A. Stanton).
17. *Xylocopa collaris* Lepel. Luzon.
18. *Xylocopa dissimilis* Lepel. Manila (Father W. A. Stanton).
19. *Xylocopa ghilianii* Grib.
20. *Xylocopa iridipennis* Lepel.
21. *Xylocopa leucocephala* Rits.
22. *Xylocopa philippinensis* Smith. Manila (Father W. A. Stanton). Fr. Casto de Elera in his "Catalogo de toda la Fauna Filipinas" records also *X. violacea* Fabr., a European species.
23. *Xylocopa sororina* Smith.
24. *Xylocopa trifasciata* Grib.
25. *Platynopoda latipes* Drury. Philippine Islands.
26. *Platynopoda tenuiscape* Westw. Philippine Islands.

Family IX. MEGACHILIDÆ.

27. *Megachile atrata* Smith.
28. *Megachile clotho* Smith. Luzon, Cape Eugeno.

29. *Megachile lachesis* Smith. Luzon.
 30. *Megachile laticeps* Smith.
 31. *Megachile* sp. ? Manila (M. L. Robb).

Family X. STELIDIDÆ.

32. *Cœlioxys philippensis* Bingh. Luzon, Cape Eugeno.

Family XI. PANURGIDÆ.

None.

Family XII. ANDRENIDÆ.

Hoplonomia, new genus.

This genus on account of the abdomen being banded is allied to *Paranomia* Friese, but is readily separated from it and *Nomia*, *sens. str.* by the post-scutellum in both sexes, being armed with two straight spines, the scutellum with a median depression and with the hind angles ending in a small tubercle.

Nomia elliotii Smith and *N. westwoodii* Grib. described from India, belong to this genus.

33. *Hoplonomia quadrifasciata*, new species.

♀. Length 9 mm. Black, closely punctate, the apical margins of the abdominal segments 2 to 5 depressed, smooth and shining, fasciate with yellow or greenish-yellow; face anteriorly from the insertion of the antennæ, the cheeks, the pronotum above and on each side including the tubercles, a line at base of scutellum, the post-scutellum, and the metapleura, clothed with a dense whitish or yellowish-white pubescence; legs black, the hind tibiæ, except a large black spot behind, and the basal joint of hind tarsi, except at apex, yellowish; the hind femora are much swollen; wings hyaline, the apical margins subfuscous; the second cubital cell small, quadrate, a little higher than long, and receiving the recurrent nervure a little beyond the middle.

♂. Length 8 mm. Agrees well with the ♀, except that the abdomen is narrower, the terminal ventral plate and the genitalia being wholly honey-yellow, while only the apex of the hind tibiæ is yellow. The basal joint of the hind tarsi is entirely black.

Type. — No. 7720, U. S. National Museum.

Manila. Described from a ♂ and ♀ specimen received from Father W. A. Stanton.

34. *Paranomia stantoni*, new species.

♂. Length 8 mm. Black, the head below the antennæ and the depressed apical margins of the abdominal segments 2 to 6, white, the mesonotum and the scutellum clothed with a dense fulvous pubescence, the face, cheeks, temples, sides of thorax, legs, and the venter with a whitish pubescence; mandibles black; second

and third joints of the flagellum about equal in length, not quite twice as long as the first which is the shortest joint; legs black, the inner apical angle of the hind tibiæ, which is triangularly produced, and the basal half, or a little more, of the claws, honey-yellow; the hind femora are much swollen. Wings hyaline, faintly tinted, the tegulæ and costal vein pale yellowish, the subcostal vein and the stigma brown-black, the internal veins brownish, the first branch of the basal nervure is curved inwardly much as in *Halictus*, the first and third cubital cells are long, about equal, the second small, wider than long, about one third the length of the first.

The abdomen is smooth and shining, the first segment is closely finely punctate, clothed with a whitish pubescence, but with a smooth, shining, impunctate space at the anterior middle, the following segments all smooth, almost impunctate, with some black, sparse hairs, the apical white margins with some white hairs.

Type. — No. 7693, U. S. National Museum.

Manila. Described from a single specimen received from Father W. A. Stanton, in honor of whom the species is named.

Family XIII. COLLETIDÆ.

This family is well represented in India and should have many representatives in the Philippines.

Family XIV. PROSOPIDÆ.

35. *Prosopis philippinensis*, new species.

♀. Length 6 to 6.5 mm. Black, polished, impunctate, except the labrum and the apex of the clypeus which are sparsely punctate, and the abdominal segments 3 to 6 which are shagreened. The face is depressed and there is a broad yellow band that extends from a little below the insertion of the antennæ to the labrum; the tarsi, except the basal joint, and the extreme apical margin of abdominal segments 2 to 5, are honey-yellow; claws pale with the teeth black. Wings hyaline, the tegulæ yellowish-white, the stigma, except the outer edge, and the veins, brown.

Type. — No. 7694, U. S. National Museum.

Manila. Described from 2 ♀ specimens taken by Father W. A. Stanton.

This is not a genuine *Prosopis* but the material is too limited for me to dissect and study the trophi to make certain of its position.

Superfamily II. SPHECOIDEA.

Family XV. OXYBELIDÆ.

None recorded from the Philippines, but the family surely has representatives there.

Family XVI. CRABRONIDÆ.

Should be found in the Philippines.

Family XVII. PEMPHREDONIDÆ.

No species yet recorded from the Philippines.

Family XVIII. BEMBICIDÆ.

This family should be well represented.

Family XIX. LARRIDÆ.

36. *Notogonia laboriosa* Smith. Philippines.

Family XX. PHILANTHIDÆ.

37. *Cerceris vafra* Bingh. Luzon.

Family XXI. TRYPOXYLIDÆ.

None are yet known from the Philippines.

Family XXII. MELLINIDÆ.

Not known in the Philippines.

Family XXIII. NYSSONIDÆ.

This family should be represented in the islands.

Family XXIV. STIZIDÆ.

Should be well represented, but no species is yet recorded.

Family XXV. SPHECIDÆ.

- 38. *Sphex argentata* Dahlb. Manila (Father W. A. Stanton).
- 39. *Sphex aurulentus* Fabr. Philippines.
- 40. *Sphex maurus* Smith. Luzon.
- 41. *Sphex morosus* Smith. Luzon.
- 42. *Sphex serica* Fabr. Manila (Father W. A. Stanton).
- 43. *Sphex umbrosus* Christ. Philippines.
- 44. *Chlorion lobatum* Fabr. Manila.
- 45. *Sceliphron bengalensis* Dahlb. San Rafael, P. I. (A. P. Ashby).
- 46. *Sceliphron madraspatanum* Fabr. Philippines. Bay Laguna Prov. (Dr. P. L. Stangl).
- 47. *Sceliphron violaceum* Dahlb. Philippines. Fr. Casto de Elera has included in his "Catalogo de toda la Fauna Filipinas" *Ammophila subulosa* Fabr., a European species.
- 48. *Ammophila superciliaris* Saussure. Philippines.

Family XXVI. AMPULICIDÆ.

- 49.
- Ampulex compressa*
- Fabr. Philippines.

Superfamily III. VESPOIDEA.

Family XXVII. CEROPALIDÆ.

50. *Salius bipartitus* Lepel. Philippines.
 51. *Salius flavus* Fabr. Philippines.
 52. *Salius fulgidipennis* Sauss. Philippines.
 53. *Salius peregrinus* Smith. Luzon.
 54. *Salius sericosoma* Smith. Philippines.
 55. *Macomeris violacea* Lepel. Luzon.
 56. *Pseudagenia unifasciata*, new species.

♀. Length 8 mm. Black, clothed with a fine glittering, silvery white pubescence, the head and thorax very finely closely punctate or shagreened; mandibles toward apex reddish but with black teeth; palpi and the middle and front tarsi brownish. Wings hyaline, the front wings with a fuscous fascia from the apex of the stigma that reaches two thirds across; its base originates at the base of the marginal cell; the stigma and veins are black; the transverse median nervure is interstitial with basal nervure, the median and submedian cells therefore of an equal length.

Type. — No. 7721, U. S. National Museum.

Manila. Described from one specimen taken by Father W. A. Stanton. The species comes evidently close to *P. veda* Cameron, described from India.

Family XXVIII. VESPIDÆ.

57. *Provespa dorylloides* Sauss. Philippines.
 58. *Vespa deusta* Lepel. Bacoor (Dr. P. L. Stangl).
 59. *Vespa luctuosa* Sauss. Bacoor (Dr. P. L. Stangl).
 60. *Vespa nigripennis* Sauss. Philippines.
 61. *Vespa philippinensis* Sauss. Balinag, P. I. (A. P. Ashby).
 Fr. Casto de Elera records *V. vulgaris* Fabr. and *V. crabro* Fabr., in his "Catalogo de toda la Filipinas."

62. *Polistes chinensis* Fabr.
 63. *Polistes dubius* Sauss. Manila (Father W. A. Stanton).
 64. *Polistes hebraeus* Fabr. Philippine Islands.
 65. *Polistes manillensis* Sauss. Manila.

This, according to Saussure, is the smallest *Polistes* known.

66. *Polistes philippinensis* Sauss. Philippine Islands.

The European *P. gallica* Fabr. is included by Fr. Casto de Elera, probably correctly as I have it from Japan.

67. *Icaria philippinensis* Sauss. Bay Laguna (Dr. P. L. Stangl).

Family XXIX. EUMENIDÆ.

- 68. *Eumenes conica* Fabr. Luzon.
- 69. *Eumenes curvata* Sauss. Manila (Father W. A. Stanton).
- 70. *Eumenes gracilis* Sauss. Manila (Father W. A. Stanton).
- 71. *Eumenes fuleipennis* Smith. Manila (Father W. A. Stanton).
- 72. *Rhynchium atrum* Sauss. Manila (Father W. A. Stanton).
- 73. *Lionotus dyscherus* Sauss. Manila.
- 74. *Lionotus punctum* Sauss. Manila.
- 75. *Odynerus bizonatus* Boisd. Manila.

Family XXX. MASARIDÆ.

None recorded from the Philippines.

Family XXXI. CHRYSIDIDÆ.

- 76. *Stilbum amythystina* Fabr. Manila (Father W. A. Stanton) ; San Rafael (A. P. Ashby) ; Bacoor (Dr. P. L. Stangl).
- 77. *Chrysis fuscipennis* Brullé. Manila.
- 78. *Trichrysis aspera* Brullé. Philippine Islands.

Family XXXII. BETHYLIDÆ.

This family should be well represented in the Philippines.

Family XXXIII. TRIGONALIDÆ.

- 79. *Trigonalys lachrymosa* Westw. Mindanao.

Family XXXIV. SAPYGIDÆ.

Not yet known from the Philippines.

Family XXXV. MYZINIDÆ.

Some of the East Indian species will be found in the Philippines.

Family XXXVI. SCOLIIDÆ.

- 80. *Discolia aureipennis* Lepel. Philippines.
- 81. *Discolia erratica* Smith. Manila.
- 82. *Discolia modesta* Smith. Manila.
- 83. *Scolia capitata* Guér. Manila (Father W. A. Stanton).
- 84. *Scolia procera* Illiger. Manila (Geo. C. Lewis).
- 85. *Scolia whiteheadii* Bingh. Luzon.
- 86. *Scolia manilæ*, new species.

♀. Length 9 mm. Black and shining, with rather coarse sparse punctures, clothed with long glittering white hairs, the face on each side below the antennæ with a dense silvery white pubescence; abdominal segments 1 to 3 with yellow bands at apex, that on the first dilated laterally; the second segment has also a large irregularly quadrate yellow spot on each side that is connected with the apical band; the third segment has an oblique yellow line on each side that extends into the apical band; ventral segments 2 to 4 fringed with long white hairs at apex; wings subhyaline, the costal and marginal cells tinged with yellowish; marginal cell squarely truncate at apex; cubital cells two, the second triangular; discoidal cells *two* only, thus differing from typical forms placed here.

Type. — No. 7722, U. S. National Museum.

Manila. Described from two specimens collected by Father W.

A. Stanton.

- 87. *Liacos analis* Fabr. Manila.
- 88. *Elis annulata* Fabr. Philippines.
- 89. *Elis aureicollis* Smith. Philippines.
- 90. *Elis aurulenta* Smith. Philippines.
- 91. *Elis grossa* Fabr. Philippines.
- 92. *Elis luctuosa* Smith. Manila.
- 93. *Elis lindenii* Lepel. Philippines.

Family XXXVII. TIPHIIDÆ.

- 94. *Tiphia compressa* Smith. Manila.

Family XXXVIII. COSILIDÆ.

None.

Family XXXIX. RHOPALOSOMIDÆ.

None.

Family XL. THYNNIDÆ.

Should have some representatives.

Family XLI. MYRMOSIDÆ.

Probably some of the East Indian species will be found in the Philippines.

Family XLII. MUTILLIDÆ.

- 95. *Mutilla philippinensis* Smith. Philippine Islands.
- 96. *Mutilla maculofasciata* Sauss. Luzon.
- 97. *Mutilla nigra* Smith. Luzon.
- 98. *Mutilla suspiciosa* Smith. Luzon.

Superfamily IV. FORMICOIDEA.

Family XLIII. DORYLIDÆ.

No species is yet recorded.

Family XLIV. PONERIDÆ.

99. *Diacamma versicolor* Smith. Philippine Islands.
 100. *Odontoponera denticulata* Smith. Mindoro, Naujan, Samar.

Family XLV. ODONTOMACHIDÆ.

101. *Odontomachus infandus* Smith. Manila.

Family XLVI. MYRMICIDÆ.

102. *Sima allaborans* Walker. Manila.
 103. *Pheidologiton diversus* Jerdon. Philippines.
 104. *Plagiolepis longipes* Jerdon. Luzon, Bataan, Manila, Orion.
 105. *Tetramorium guinense* Fabr. Luzon, Bulacan, Lolomboy.

Family XLVII. CRYPTOCERIDÆ.

I have a species of this family not yet identified.

Family XLVIII. DOLICHODERIDÆ.

106. *Dolichoderus bituberculata* Mayr. Luzon, Manila, Navotas.
 107. *Technomyrmex albipes* Smith. Luzon, Cavite, Santa Cruz,
 Navic.

Family XLIX. FORMICIDÆ.

108. *Camponotus cinerascens* Fabr. Luzon, Laguna, Los Baños,
 Calaanba.
 109. *Camponotus gigas* Latr. Luzon, Manila, Cavite, Santa Cruz.
 110. *Camponotus pallidus* Smith. Luzon, Mindanao, Bataan, Orion.
 111. *Formica quadrisecta* Smith. Manila.
 112. *Formica ruba* Fabr. Luzon, Manila.
 113. *Polyrhacis aciculata* Smith. Philippines.
 114. *Polyrhacis abdominalis* Smith. Luzon, Orion, Cavite, Santa
 Cruz, Samar, Paramas.
 115. *Polyrhacis armata* Le Guillon. Luzon, Manila, Navotas, La-
 guna, Colamba.
 116. *Polyrhacis bellicosa* Smith. Luzon, Manila, Navotas.
 117. *Polyrhacis bicolor* Smith. Luzon, Manila, Ternate.
 118. *Polyrhacis bihamata* Drury. Luzon, Manila, Navotas, Bataan,
 Orion.
 119. *Polyrhacis cyaniventris* Smith. Manila.
 120. *Polyrhacis dives* Smith. Luzon.
 121. *Polyrhacis maligna* Smith. Manila.

122. *Polyrhacis mayri* Roger. Luzon, Manila, Navotas, Laguna, Los Baños.

123. *Polyrhacis philippinensis* Smith. Manila (W. A. Stanton, collector).

124. *Polyrhacis rastellata* Latr. Paragua, Prov. Princesa, Calamianes, Culion.

125. *Polyrhacis sexspinosa* Latreille. Luzon.

The National Museum has quite a collection of ants from the Philippines, but as yet it has been studied only generically; there are several genera represented not yet noted from these Islands.

Superfamily V. *PROCTOTRYPOIDEA*.

Family L. *PELECINIDÆ*.

None.

Family LI. *HELORIDÆ*.

None.

Family LII. *PROCTOTRYPIDÆ*.

Should occur.

Family LIII. *BELYTIDÆ*.

This family ought to be well represented.

Family LIV. *DIAPRIIDÆ*.

Undoubtedly plentifully represented.

Family LV. *CERAPHRONIDÆ*.

Should be well represented.

Family LVI. *SCELIONIDÆ*.

126. *Hadronotus philippinensis*, new species.

♀. Length 1.3 mm. Black, closely punctate, opaque, the thorax clothed with a fine pubescence; scape, pedicel beneath and at apex, and the legs, light brownish-yellow; funicle brown; club black; mandibles except the teeth yellowish; palpi pale or whitish; wings hyaline, pubescent, the veins brown. The abdomen is opaque, punctate, the first segment about as long as the second, delicately striate, with a narrow depression at apex, the following segments short. The pedicel is obconical, a little longer than the first joint of the funicle, funicle joints 2 and 3 not longer than thick, the others transverse, the club is large, fusiform.

Type. — No. 7718, U. S. National Museum.

Manila. Described from three specimens received from Father W. A. Stanton.

Family LVII. PLATYGASTERIDÆ.

Ought to be well represented.

Superfamily VI. CYNIPOIDEA.

Family LVIII. FIGITIDÆ.

127. *Loboscelidia rufescens* Westw. Sulu Island.

Family LIX. CYNIPIDÆ.

Should be plentifully represented.

Superfamily VII. CHALCIDOIDEA.

Family LX. AGAONIDÆ.

When the fig trees of the Philippines are studied, this family will be found to have many representatives, and probably most of the species described from Java will be found in the Archipelago.

Family LXI. TORYMIDÆ.

This family also should be abundantly represented.

Family LXII. CHALCIDIDÆ.

128. *Leucospis regalis* Westw. Luzon, Camiguin.

129. *Chalcis albotibialis*, new species.

♂. Length 4 to 5 mm. Black, the head and thorax closely punctate, with a sparse whitish pubescence, the metathorax coarsely reticulated; tegulæ, tips of front and middle femora, their tibiæ and tarsi entirely, hind tibiæ outwardly, except at extreme base, and their tarsi yellowish-white, hind femora with a yellow spot at apex above, beneath they are armed with numerous minute teeth. Wings hyaline, the veins brown-black.

Type. — No. 7695, U. S. National Museum.

Manila. Numerous specimens bred by Father W. A. Stanton from a Lepidopteron.

130. *Chalcis argentifrons*, new species.

♀. Length 3.5 to 3.6 mm. Black and shining, the head and thorax, sparsely minutely punctate, with a sparse whitish pubescence, the metathorax coarsely reticulated, the face anteriorly with a dense silvery white pubescence; tegulæ waxy-white; tips of front and middle femora, their tibiæ and tarsi, and the hind tibiæ and tarsi, yellowish-white; last joint of all trochanters yellowish; hind femora reddish, with a dusky or blackish spot outwardly a little beyond the middle, and with their apices yellow above. Wings hyaline, the veins brown-black. The abdomen is subglobose,

shining, but the segments are very minutely shagreened, the sides clothed with a whitish pubescence.

Type. — No. 7696, U. S. National Museum.

Manila. Described from 5 specimens bred by Father W. A. Stanton from a Lepidopteron.

131. *Chalcis pulchripes* Holmgr. Manila.

132. *Haltichella nasuta* Holmgr. Manila.

133. *Haltichella ludlowæ*, new species.

♂. Length 2.5 mm. Black, the head and thorax closely punctate, opaque, the abdomen smooth and highly polished, the petiole very short, the second segment occupying nearly the whole of the basal half of the abdomen; ocelli red; second joint of front and middle trochanters, extreme tips of their tibiae and all tarsi yellowish-white; wings hyaline, the veins brown, the epitegulae testaceous, the tegulae black; hind femora much swollen, minutely denticulate beneath the hind tibiae at base with a pale annulus, where they unite with the femora.

Type. — No. 7697, U. S. National Museum.

Balaan, Luzon. Described from a single specimen taken by Miss C. S. Ludlow.

134. *Haltichella validicornis* Holmgr. This species was originally described from Java, but it has also been taken at Balaan, Luzon, by Miss Ludlow.

135. *Neochalcis tarsalis* Walk. Philippine Islands. Balaan, Luzon (Miss Ludlow).

136. *Dirhinus anthracia* Walk. Philippine Islands.

Family LXIII. EURYTOMIDÆ.

137. *Eurytoma manilensis*, new species.

♀. Length 2 mm. Black, umbilicately punctate; scape and legs reddish-yellow, the tarsi paler, or pale yellowish; pedicel and flagellum brown, the pedicel minute, rounded; first joint of flagellum about one and one half times as long as thick and the longest joint, the following joints suboval, very little longer than thick. Wings hyaline, the veins pale yellowish-white; the marginal vein is a little longer than the stigmal. The abdomen is conic-ovate, subsessile, compressed, smooth and shining, pointed at apex.

♂. Length 1.4 to 1.5 mm. Agrees well with the female in color but differs in antennal and abdominal characters: the flagellum is long, the funicle joints long, pedicellate at apex, the thickened posteriorly portion with whorls or rather long hairs but the hairs are, however, shorter than the joints; the abdomen is longly petiolated, the petiole being as long as the hind coxæ, and cylindrical, smooth and shining, the body of the abdomen is small, seen from the side, triangular in outline, and subcompressed.

Type. — No. 7719, U. S. National Museum.

Manila. Described from one ♀ and two ♂ specimens collected by Father W. A. Stanton.

Family LXIV. PERILAMPIDÆ.

No species known.

Family LXV. EUCHARIDÆ.

138. *Chalcura* (*Eucharis*) *ægineta* Walk. Philippines.

139. *Chalcura* (*Thoracantha*) *nasua* Walk. Philippines.

Family LXVI. MISCOGASTERIDÆ.

This family should be well represented in the Philippines.

Family LXVII. CLEONYMIDÆ.

140. *Epistenia ania* Walk. Philippines.

141. *Epistenia Feretius* Walk. Philippines.

Family LXVIII. ENCYRTIDÆ.

142. *Metapelma gloriosa* Westw. Luzon, Camiguin.

143. *Calosoter anemetus* Walk. Philippines.

144. *Anastatus stantoni*, new species.

♀. Length about 3.5 mm. Blue to blue-green, the head in front and on the vertex gold-green, the middle mesothoracic lobe and the lateral lobes *within* metallic bronze-green; abdomen spatulate black or purplish-black with a white transverse band at apex of the first segment; antennæ, except the scape, black, the scape rufous; legs black, the middle and hind trochanters annulated with white or yellowish-white, the front and hind tarsi, from the basal joint, more or less brownish. Wings with the apical two thirds fuscous, the basal third and a narrow transverse band in the fuscous portion from before the stigmal vein, clear hyaline.

Type. — No. 7698, U. S. National Museum.

Manila. Described from two specimens collected by Father W. A. Stanton.

145. *Coccidencyrtus manilæ*, new species.

♀. Length 7.5 to 8 mm. Coal black, the disk of the mesonotum with a slight æneous tinge; mandibles and palpi yellowish; antennæ brown, the scape black, the pedicel at extreme apex yellowish; funicle joints 1 to 6 transverse-moniliform, gradually increasing in size, the club rather large, two thirds the length of the funicle, 3-jointed; pedicel obconical, about thrice as long as thick at apex; legs black, with the front and middle tibiæ and tarsi, a narrow annulus at base of hind tibiæ and the hind tarsi, pale yellowish. Wings hyaline, the thick marginal vein and the short stigmal vein brown-black.

Type. — No. 7699, U. S. National Museum.

Manila. Described from seven specimens received from Father W. A. Stanton.

146. *Aphidencyrtus pallidipes*, new species.

♀. Length 0.8 mm. Æneous black, the abdomen, above, with a greenish, metallic luster; antennæ light brown, the flagellum thickened towards apex, pubescent; legs, including coxæ, pale yellowish, the femora and tibiæ toward apex faintly brownish. Wings hyaline, the marginal and stigmal veins brown.

Type. — No. 7701, U. S. National Museum.

Manila. Described from two specimens bred by Father W. A. Stanton from an undetermined Aphid.

Exoristobia, new genus.

Allied to *Tachinaphagus* Ashm., but with the post-marginal vein much longer, the stigmal vein slightly curved upwards, the club of the antennæ much larger, as long as the funicle, while the funicle joints are transverse.

147. *Exoristobia philippinensis*, new species.

♀. Length 1 to 1.1. Robust, sparsely, minutely punctate, the head dark blue, the scrobes deeply impressed, metallic green at bottom, the thorax black, with a faint bluish and bronzy tinge in certain lights, the abdomen æneous black; scape brownish-yellow towards tip beneath; flagellum strongly clavate, the funicle joints very short, transverse, the club very large, dilated, as long as the funicle; legs black, with the tibiæ ferruginous, the middle tibiæ toward apex, tibial spurs, and all tarsi, yellowish-white. Wings hyaline, the marginal and stigmal veins dark brown, the stigmal vein slight curved.

Type. — No. 7700, U. S. National Museum.

Manila. Described from five specimens bred by Father W. A. Stanton from a dipterous larva, *Exorista dispar* Macq.

Family LXIX. PTEROMALIDÆ.

None.

Family LXX. ELASMIIDÆ.

None.

Family LXXI. EULOPHIDÆ.

148. *Tetrastichus philippinensis*, new species.

♀. Length 1.6 to 1.8 mm. Dark metallic greenish-blue, the head in front and the abdomen more decidedly bluish; the mesonotum is smooth and impunctate, except some sparse punctures on the middle lobe along the parapsidal furrows; scape, pedicel and legs, except the coxæ, brownish-yellow, the tarsi, except the last joint, yellowish-white; abdomen ovate, shorter than the head and thorax united.

Type. — No. 7702, U. S. National Museum.

Manila. Described from 25 specimens bred by Father W. A. Stanton, from his No. 37, not yet determined.

149. *Euplectrus manilæ*, new species.

♀. Length 1.5 mm. Head and thorax black, shining, with some long, sparse hairs, the mesonotum posteriorly delicately shagreened, but without a median carina posteriorly; mouth parts, scape, pedicel, legs, including coxæ, and the abdomen beneath and a large spot on disk above, yellowish-white, rest of antennæ light brown, the club darker, the petiole of the abdomen and the body of abdomen at the sides and apex black. Wings hyaline, the veins pale or yellowish.

Type. — No. 7703, U. S. National Museum.

Manila. Described from 5 specimens bred by Father W. A. Stanton from his No. 35, *Papilio alphenor* Cram., as identified by Dr. Dyar.

150. *Euplectrus philippinensis*, new species.

♀. Length 1.5 mm. Brownish-yellow, with sparse long hairs, the eyes, the flagellum, and two or three streaks on dorsum of abdomen brown or brown-black; legs yellowish or waxy-white; wings hyaline, the veins pale yellowish.

The brown-black flagellum is pubescent, slightly thickened towards apex, joints 1 and 2 about twice as long as thick, the following a little shorter but thicker. The head is polished, impunctate, while the thorax, except at sides and the metathorax which are smooth, is delicately shagreened.

Type. — No. 7704, U. S. National Museum.

Manila. Described from 3 specimens bred by Father W. A. Stanton from a slug caterpillar.

Family LXXII. TRICHOGRAMMIDÆ.

These are all egg parasites and undoubtedly many will be found in the Philippines.

Family LXXIII. MYMARIDÆ.

This family also will be found plentifully represented.

Superfamily VIII. ICHNEUMONOIDEA.

Family LXXIV. EVANIIDÆ.

151. *Evania appendigaster* Linné. Manila (W. A. Stanton collector).

152. *Evania impressa* Schlett. Manila.

153. *Evania verrucosa* Schlett. Bohol.

Family LXXV. AGRITYPIDÆ.

Representatives should be sought for in the mountain streams in the interior.

Family LXXVI. ICHNEUMONIDÆ.

154. *Cryptus vesticalis* Bingham. Luzon.
 155. *Cryptus præpes* Bingh. Luzon.
 156. *Caryphus apicalis* Holmgr.
 157. *Mesostenoides philippinensis*, new species.

♀. Length 14.5 mm.; ovipositor a little shorter than the abdomen. Black, marked with white as follows: upper orbits, face below the antennæ, the clypeus, mandibles, except the apical two thirds, the cheeks, hind orbits, a line on each side of pronotum above and beneath, the scutellum, except at base, the scutellar ridges, the tegulæ, a line beneath, a band on the middle of the mesopleura, the mesosternum, a \wedge -shaped mark on the metathorax, a spot on the mesopleura, bands at the apex of abdominal segments, those of the 4th, 5th and 6th interrupted medially, and legs mostly yellow; the first joint of the middle trochanters basally, the middle femora above and their tibiæ and tarsi above, a spot at apex of hind coxæ, base of their trochanters, a line on the hind femora *above*, their apices, a line on hind tibiæ in front and behind, their apices, and the fifth joint of their tarsi, all black, rest of hind tarsi yellowish-white; antennæ black, with joints 8 to 13 white.

Type. — No. 7705, U. S. National Museum.

Manila. Described from a single specimen taken by Father W. A. Stanton.

158. *Mesostenoides literatus* Brullé. Philippines.
 159. *Mesostenoides marginatus* Brullé. Philippines.

Fr. Castro de Elera in his "Catalogo de toda la Fauna Filipinas" has incorrectly included *Mesostenus literalis* Brullé, a species described from Cuba.

160. *Pimpla punctum* Brullé. Manila.

Fr. Castro de Elera, in his "Catalogo de toda la Fauna Filipinas," has included *Pimpla instigator* Linné, evidently through an error. He records also *Xylonomus irragator* Fabr., a European species as found in the Philippines, but gives no data. Another species mentioned by him, *Ammophia subulosa* Fabr., I cannot find mentioned in any European work, treating on the *Ichneumonidæ*, nor can I find where this genus was described.

161. *Enicospilus ashbyi*, new species.

♂. Length 18.5 mm. Luteous, the abdomen, except the basal two thirds of the petiole which is white, honey-yellow; eyes black; antennæ reddish-brown; legs yellowish-brown, the coxæ, trochanters, and base of femora luteous; wings hyaline, the veins brown-black, the stigma, base of the radius and the two spots in the marginal cell, the first being rather large and triangular, the second very small, honey-yellow.

Type. — No. 7706, U. S. National Museum.

Bilinag, P. I. Described from a single specimen received from Mr. A. P. Ashby.

162. *Leptopygus stangli*, new species.

♀. Length 9 mm.; ovipositor less than half the length of the abdomen. Black, very minutely punctate, sericeous; the temples, the cheeks, the face below the insertion of the antennæ, the scape and pedicel of the antennæ, and bands at the apex of abdominal segments 3-6 testaceous; flagellum black, brownish beneath; palpi, all coxæ and trochanters, except the hind coxæ at base, front tibiæ toward base and the front and middle tarsi, whitish; rest of legs, except the hind tibiæ which are black or brown-black and their tarsi which are also more or less fuscous or dark brown, red, the tibial spurs white. Wings hyaline, the veins brown-black, the stigma reddish-brown. The metathorax is long, areolated, the areola being twice as long as the petiolar area. The abdomen is fully twice as long as the head and thorax united, compressed, the ovipositor black, not quite half as long as the abdomen.

Type. — No. 7707, U. S. National Museum.

Bacoor, P. I. Described from 3 specimens received from Dr. L. P. Stangl.

163. *Temelucha philippinensis*, new species.

♀. Length 8 mm.; ovipositor not quite the length of the abdomen. Brownish-yellow; a spot on vertex enclosing the ocelli, the abdominal petiole at base, a spot at base of abdominal segments 2 and 3 above, and the ovipositor, black; eyes brown; antennæ basally and beneath light brownish, becoming blackish toward apex. Wings hyaline, the stigma brown, the other veins darker. The abdomen is nearly thrice as long as the head and thorax united, and strongly compressed.

Type. — No. 7708, U. S. National Museum.

Bacoor, P. I. Described from 3 specimens collected by Dr. P. L. Stangl.

Family LXXVIII. BRACONIDÆ.

164. *Bracon deceptor* Smith. Luzon.

165. *Bracon luteifrons* Brullé. Manila.

166. *Bracon nigrifrons* Brullé. Manila.

167. *Meteorus bacoorensis*, new species.

♀. Length 5 mm. Brownish-yellow, the eyes black with a slight purplish tinge, the legs basally on coxæ, trochanters and base of femora, tinged with whitish; sheaths of ovipositor black. Wings hyaline, the stigma, costæ, basal vein, cubitus, and the transverse cubiti, yellow; the recurrent nervure is interstitial with the first transverse cubitus. The first three or four joints of the flagellum are long, about four times as long as thick.

Type. — No. 7709, U. S. National Museum.

Bacoor, P. I. Described from a single specimen received from Dr. P. L. Stangl.

168. *Phanerotoma philippinensis*, new species.

♀. Length 3.5 mm. Uniformly brownish-yellow, but the abdomen with the venter whitish and giving a whitish tinge to the first and second dorsal segments; eyes black; antennæ dusky at tips where they taper off; legs yellowish-white, the hind tibiæ at apex and their tarsi toward apex fuscous. Wings hyaline, the parastigma, the stigma, the nervures forming the second cubital and the marginal cells, and the median vein beyond the basal nervure, all brown.

Type. — No. 7710, U. S. National Museum.

Bacoor, P. I. Described from a single specimen received from Dr. P. L. Stangl.

169. *Apanteles philippinensis*, new species.

♀. Length 1.7 to 1.8 mm. Black, shining, the thorax delicately punctulate, the plate of the first abdominal segment linear, impunctate; palpi white; legs brownish-yellow, the hind-legs, except the basal two thirds of the tibiæ and base of tarsi, black or dark fuscous; ventral segments 1 to 3 yellowish. Wings hyaline, the stigmal and subcostal vein dark brown, the internal veins pale.

Type. — No. 7711, U. S. National Museum.

Manila. Described from 8 specimens received from Father W. A. Stanton.

170. *Apanteles manilæ*, new species.

♀. Length 1.5 to 1.6 mm. Black, the head smooth, impunctate, the thorax delicately, closely punctate, the first and second segments of the abdomen sculptured, the following smooth and shining, the third being as long as the second; palpi white; antennæ wholly black; legs reddish-yellow, the apices of the hind femora and tibiæ, and the middle and the hind tarsi, fuscous or blackish. Wings hyaline, the stigma brown.

Type. — No. 7712, U. S. National Museum.

Manila. Described from 8 specimens received from Father W. A. Stanton.

171. *Urogaster philippinensis*, new species.

♀. Length 1.8 mm.; ovipositor about as long as the hind femur. Black, the thorax minutely punctured, the plate of the first abdominal segment sculptured, the rest of the abdomen smooth, shining; legs reddish-brown, the coxæ, trochanters and base of the femora of the front and middle legs and the hind legs entirely, except basal two thirds of tibiæ and an annulus at base of tarsi, black or very dark fuscous; tibial spurs white. Wings hyaline, the stigma and costæ brown, the internal veins pale.

Type. — No. 7713, U. S. National Museum.

Manila. Described from 3 specimens received from Father W. A. Stanton.

172. *Urogaster stantoni*, new species.

♀. Length 1.6 to 1.8 mm.; ovipositor about the length of the abdomen. Black, the thorax closely, minutely punctate, the head smooth, impunctate, the plate of the first abdominal segment, quadrate, distinctly sculptured; scape yellowish, rest of the antennæ black; palpi white; legs reddish, the coxæ black, the tip of the hind tibiæ and the hind tarsi, except the joints basally, fuscous. Wings hyaline, the stigma black or brown-black.

Type. — No. 7714, U. S. National Museum.

Manila. Described from 14 specimens, received from Father W. A. Stanton, bred from a caterpillar labelled E.

173. *Microplitis manilæ*, new species.

♀. Length 2 mm. Black, the head smooth, the thorax closely punctulate, sericeous, the metathorax finely rugulose, with a median carina, the plate of the first abdominal segment linear, punctate, the rest of the segments smooth, shining, the basal two ventral segments and the sides of the first and second dorsal segments testaceous; palpi yellowish; legs reddish, the coxæ, trochanters, base of femora and the hind legs entirely, except an annulus on tibiæ and the tibial spurs which are white, black; the front and middle tarsi are fuscous. Wings fuscous, the stigma and costæ dark brown.

♂. Length hardly 2 mm. Differs from the ♀ in having the front and middle femora pale at base, not black, the basal half or more of the hind tibiæ white, while the abdomen is shorter, the antennæ longer.

Type. — No. 7715, U. S. National Museum.

Manila. Described from 2 specimens received from Father W. A. Stanton.

174. *Microplitis philippinensis*, new species.

♂. Length 4.5 mm. Black; face in front finely closely punctate, opaque, the thorax above shining, but minutely punctured, the metathorax very coarsely reticulated, with a sharp median carina; palpi, yellowish; legs black or fuscous, the front femora at apex and beneath, their tibiæ and tarsi, and other legs from tip of femora, are yellowish; the hind tibiæ are very stout and are more or less brownish or reddish outwardly from the middle to near the base. Wings with the apical third fuscous, the basal two thirds subhyaline, the stigma and veins black.

Type. — No. 7716, U. S. National Museum.

Manila. Described from two specimens (B) and (F) received from Father W. A. Stanton.

175. *Monolexis manilensis*, new species.

♀. Length 2.5 mm.; ovipositor a little longer than the abdomen. Honey-yellow, smooth and shining, the metathorax feebly rugulose, the mesonotum trilobed, the middle lobe posteriorly depressed and shagreened; legs pale yellowish-white, the tarsi pale. Wings hyaline, the veins pallid, the stigma light brown or testaceous. Abdomen oblong oval, the first segment sculptured, feebly striated, the other segment smooth, impunctate.

♂. Length 0.8 to 1 mm. Agrees well with the female except in being smaller, with the antennæ very long, slender, brown-black, and in having the abdomen much shorter, more narrowed basally, and without the prominent ovipositor.

Type.—No. 7717, U. S. National Museum.

Manila. Described from nine specimens bred by Father W. A. Stanton from a Scolytid.

Family LXXIX. STEPHANIDÆ.

176. *Stephanus coronator* Fabr. Luzon.
 177. *Stephanus nigricaudus* Sichel. Manila.
 178. *Stephanus sulcifrons* Schlett. Philippines.
 179. *Stephanus tarsatus* Schlett. Philippines.
 180. *Stephanus unicolor* Schlett. Philippines.

Suborder II. PHYTOPHAGA.

Superfamily IX. *SIRICOIDEA*.

Family LXXX. ORYSSIDÆ.

181. *Oryssus maculipennis* Westw. Mindanao.

Family LXXXI. SIRICIDÆ.

182. *Tremex rugicollis* Westw. Luzon.

Family LXXXII. XIPHYDRIIDÆ.

Should occur in the Islands.

Family LXXXIII. CEPHIDÆ.

Species in this family ought to be found.

Superfamily X. *TENTHREDINOIDEA*.

Family LXXXIV. XYELIDÆ.

Not known from the islands.

Family LXXXV. LYDIDÆ.

Unknown.

Family LXXXVI. HYLOTOMIDÆ.

Should be well represented.

Family LXXXVII. LOPHYRIDÆ.

Not yet recorded from the archipelago.

Family LXXXVIII. PERRYIIDÆ.

Some representatives should be found.

Family LXXXIX. PTERYGOPHORIDÆ.

Well represented in Australia and some forms should occur in the Philippines.

Family XC. SELANDRIIDÆ.

183. *Senoclia albocerulea* Bingh. Luzon.

This family should have many representatives.

Family XCII. DINEURIDÆ.

Probably not found in the Archipelago.

Family XCIII. TENTHREDINIDÆ.

Fr. Castro de Elera, in his "Catalogo de toda la Fauna Filipinas" includes *Tenthredo variabilis* Kl., *T. neglecta* Kl., and *Dolerus niger* Kl., but gives no definite records.

Family XCIV. CIMBICIDÆ.

I see no reason why this family should not be represented in the islands.

NOTES ON OSMIINÆ WITH DESCRIPTIONS OF NEW GENERA AND SPECIES.

By E. S. G. TITUS,

WASHINGTON, D. C.

Genus ROBERTSONELLA Titus, 1904.

Robertsonella, new genus.

Slender, black, somewhat resembling *Chelostoma* (?) *campanularum* Kirby; clypeus truncate, broad in female, *mandibles tridentate in females*, sharply *bidentate in male*, malar space absent; antennæ normal in both sexes; labial palpi four-jointed, first joint not quite one half as long as second, third and fourth short, lateral, third slightly the broader and longer; *maxillary palpi four-jointed*, first and second equal and longest, fourth shorter, third nearly equal to fourth and over two thirds as long as first, fourth joint distinctly tapering to a rounded point; median nervure interstitial or at most received very slightly before origin of basal nervure, first submarginal cell longer than second, second narrowed one half above; claws cleft in male, simple in female; first dorsal abdominal segment rounded, with a narrow sulcus, male

with last dorsal segment (7), rounded, entire, with a faint trace of lateral angles, first ventral segment with a slight transverse swelling, second and third broad, second with lateral marginal swellings, third sinuate marginally, sides of abdomen very parallel.

Type of genus the following species :

Robertsonella gleasoni, new species.

♀. Length 5.5 mm. Black, shining, finely and rather coarsely punctured ; pubescence glistening silvery white, short and not thick on face, cheeks and mandibles with a fringe of longer hairs, sparse on thorax above, denser and longer on pleura, very short and sparse on abdomen, segments 1 to 5 with a narrow appressed apical fringe, interrupted (or rubbed), on segments 1 and 2, sixth segment densely clothed with short suberect hairs, ventral scopa dense and white, extending well up along sides of abdomen ; femora and tibia with sparse white hair and tarsi with dense slightly embrowned pubescence beneath on first joint, remaining joints moderately pubescent ; tibial spurs pale ; middle tibia not as long as first joint of corresponding tarsi.

♂. Length 5 to 5.5 mm. Closely resembles female ; punctures of head finer and closer, pubescence of face white, dense, appressed, that of clypeus long, very dense and snowy-white, slightly discolored at apical margin, hair fringing cheeks and mandibles longer and moderately dense ; antennæ reaching beyond tegulæ ; scutellum and metathorax with more pubescence than in female, abdominal segments 1 to 3 fasciate only at sides, 4 to 6 fasciate, fourth with white pubescence on disc ; seventh segment slightly flattened, apex of sixth slightly reflexed ; third ventral with a median apical patch of white hair.

Several specimens on *Phacelia purshii* at Grand Tower, Illinois, 9 May, 1902, by H. A. Gleason. 1 ♀ and 1 ♂ deposited in U. S. National Museum.

Type.—No. 6858.

Genus *HERIADES* Spinola, 1808.

Type: *Heriades truncorum* (Linné) 1758.

So far as I have been able to find, Spinola designated no species as the type of his genus ; however, in 1810, Latreille distinctly designates the above species as the type of *Heriades* (Consid. Gen. sur l'Ordre Naturel des Animaux, p. 439). Schenck in 1859 created for *H. truncorum* the genus *Trypetes*. This generic name was not admissible, since in 1836 Schönherr had used it for a coleopterous genus.

Hence Robertson's Trypetini and Trypetoidea will not stand and, for the tribal name, I propose *Heriadini*.

Our *Heriades carinatum* Cresson is congeneric with *H. truncorum* Linné, as also is the following species.