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## SYNONYMY OF THE PROVANCHER COLLECTION OF HEMIPTERA.

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Through the kindness of Rev. A. Huard, of Quebec, I recently had an opportunity to examine the Provancher collection of Hemiptera now deposited in the Museum of Public Instruction in the Parliament Buildings in that city. This collection has been well cared for and is in excellent state of preservation. The main part of the collection seems to represent the exact material used by the Abbé in the preparation of the Hemiptera volume of his *Petite Faune Entomologique du Canada*, practically all the species included in that volume being in the collection in the same order as in the book; the few additional species being in most cases placed between the regular rows of the arrangement. Usually there is but one or at most two specimens of each species and the labels seem to be in Provancher's own handwriting. There are no "types" so indicated nor could I find any trace of the types of his species published in 1872 in Vol. IV of the *NATURALISTE CANADIEN*, and I am convinced that he incorporated this material with his general collection at the time he published the *Petite Faune*, or so much of it as he then possessed, and consequently that it will be impossible definitely to locate all of his earlier species. The *Petite Faune* collection however contains Provancher's determination of most of his 1872 species and so far as these specimens agree with his first descriptions they must be taken as representing the nearest approximation to types of his earlier species now in existence.

When starting for Quebec I took with me a good series from my own collection for comparison, covering all the species of which I felt in doubt, and by this means I was enabled to locate nearly all of the species in the *Petite Faune* and most of those of 1872.

In the following notes I have thought it best to give my determination of each of the *Petite Faune* species, indicating all uncertain forms where I had no material with me for direct comparison and so was obliged to depend upon my memory for the determination. Under each species I give first the page in the *Petite Faune*, followed by the name as there

printed. Where the determination is correct this word follows the name and after it is the name now used for the species where it differs from that employed by Provancher.

20. *Thyreocoris unicolor* P. B., correct.
21. *Thyreocoris pulicarius* Germ., correct.
21. *Homæmus æneifrons* Say, correct.
22. *Eurygaster alternatus* Say, correct.
27. *Canthophorus cinctus* P. B., correct. *Shirus cinctus* P. B.
28. *Pangæus bilineatus* Say, correct.
29. *Podisus cynicus* Say, correct. *Apateticus cynicus* Say.
30. *Podisus modestus* Dall. Under this name is one *Podisus seriventris* Uhl. pinned to the label and one *modestus* at the side.
31. *Podisus spinosus* Dall., correct. *Podisus maculiventris* Say.
32. *Perillus circumcinctus* Stal, correct. *Perilloides circumcinctus* Stal.
33. *Perillus exaptus* Say, correct. *Perilloides exaptus* Say.
34. *Rhacognathus americanus* Stal., not in the collection.
35. *Brochymena annulata* Fabr. is *4pustulata* Fabr. (Under the name *4pustulata* Fabr. is one example of *myops* Stal.)
36. *Euschistus fissilis* Uhler, correct.
36. *Euschistus tristigmus* Say, correct.
38. *Aelia americana* Dall., is *Neottiglossa undata* Say; a dark specimen but not as dark as the western *trilineata* Kirby.
39. *Neottiglossa undata* Say, correct; a pale example. (In the collection is a western specimen of *Thyanta antiguensis* Westw., labelled *Neottiglossa sulcifrons*.)
40. *Hymenarcys nervosa* Say, correct.
40. *Cænus delius* Say, correct.
41. *Lioderma ligata* Say is *Pentatoma persimilis* Horvath.
42. *Thyana custator* Fabr., correct.
43. *Mormidea lugens* Fabr., correct.
44. *Cosmopepla carnifex* Fabr., correct.
46. *Banasa calva* Say; under this name is a pale example of *dimidiata* Say.
46. *Banasa dimidiata* Say, correct.
46. *Banasa euchlora* Stal, not in the collection.
48. *Acanthosoma cruciata* Say. On this label is an example of *Elasmotethus atricornis* Van D., and by it one of *E. cruciata* Say.

In this collection are the following erroneous determinations: *Thyanta custator* labelled *Trichopepla atricornis* Stal.; *Euschistus servus* Say labelled *E. impictiventris* Stal.; *E. fissilis* Uhler labelled *E. variolarius* P. B.; *Apateticus bracteatus* Fh. labelled *Podisus grandis* Dallas; and *Perilloides exaptus* Say labelled *Perillus splendens* Uhler.

53. *Anasa tristis* De G., correct.

55. *Chelinidea vittigera* Uhler. Under this name is one example of *vittigera* Uhler and one of *tabulata* Burm. Judging from the description the former must have been the one stated to have been taken in Quebec.

55. *Alydus eurinus* Say, correct.

56. *Alydus 5-spinosus* Say, correct.

56. *Alydus pluto* Uhler. Under this name are two females of *eurinus* Say.

57. *Tetrarhinus quebecensis* Prov., is *Protenor belfragei* Hagl. In the collection it stands under the correct name showing that Provancher must have corrected his own determination later.

58. *Capys muticus* Say, correct. *Neides muticus* Say.

58. *Jalysus spinosus* Say, correct.

60. *Corizus punctiventris* Dall, correct. *Stictopleurus crassicornis* Linn.

60. *Corizus lateralis* Say, is *nigristernum* Sign. as usually determined.

61. *Harmostes fraterculus* Say. On this label is an example of *Ortholomus longiceps* Stal.

The following are incorrectly determined; *Ceraleptus* sp. determined as *Orsillus scolopax* Say; *Metapodius terminalis* Dall. as *Anisoscelis corculus* Say; *Metapodius femorata* Fabr. as *Anisoscelis declivis* Say; and *Harmostes reflexulus*, pink form, as *H. serratus* Fabr.

69. *Lygæus bistriangularis* Say, correct.

70. *Lygæus turcicus* Fabr. is *L. kalmii* Stal.

70. *Nysius grælandicus* Zett. is *N. thymii* Zett.

71. *Helonotus abbreviatus* Uhl., correct. *Phlegyas abbreviatus* Uhl.

72. *Cymus tabidus* Stal. is *Cymus discors* Horv.

73. *Ædancala crassimana* Fabr. is *O. dorsalis* Say.

74. *Ischnorhynchus didymus* Zett., correct. *I. resedæ* Panz.

75. *Oxycarenus disconotus* Say, correct. *Crophius disconotus* Say.

75. *Ischnodemus falicus* Say is *Peritrechus fraternus* Uhler.

76. *Blissus leucopterus* Say, correct.

77. *Emblethis arenarius* Linn. is *E. vicarius* Horv.

77. *Plociomerus nodosus* Say is *Scolopostethus* sp., probably *diffidens* Horv.

78. *Carpilis ferruginea* Stal, correct.
79. *Ligyrocoris constrictus* Say, correct. *Perigenes constrictus* Say.
80. *Heræus insignis* Uhl. is not in the collection.
81. *Eremocoris ferus* Say, correct.
82. *Trapezonotus nebulosus* Fall., correct.
82. *Pamera bilobata* Say is *Ligyrocoris contractus* Say.
84. *Pterometus canadensis* n. sp. This is the species lately described as *Pseudocnemodus brunneri* by Mr. Barber and must be known as *Pseudocnemodus canadensis* Prov. The following are incorrectly determined: *Oncopeltus fasciatus* Dallas determined as *Lygæus gutta* H. S.; and *Dysdercus mimus* Say as *Lygæus pulchellus* H. S. *Geocoris limbatus* Stal is correctly named. Under the name *Cnemodus mavortius* is an example of the larger dark form which I now consider to be distinct.
85. *Geocoris bullatus* Say, correct.
89. *Anthocoris musculus* Say. This is *A. borealis* Dallas which is probably a synonym of *musculus* Say.
90. *Tetraphleps canadensis* n. sp., correct. *Lyctocoris canadensis* Prov.
91. *Triphleps insidiosus* Say, correct.
102. *Collaria meilleuri* Prov., correct.
103. *Collaria oculata* Reut., correct.
103. *Miris instabilis* Uhler, correct. *Stenodema instabilis* Uhler.
104. *Trigonotylus ruficornis* Fall., correct.
104. *Trigonotylus pulcher* Reut., correct.
104. *Leptopterna dolobrata* Linn., correct. *Miris dolobrata* Linn.
106. *Resthenia insignis* Say. Under this name is the black form with the pronotal collar only fulvous. It pertains to Reuter's genus *Platytyellus*.
- NOTE—Under the name *Resthenia nigricollis* is a large black *Lopidea*, and under the name *Resthenia maculicollis* stands *Lopidea confluens* Say. There is also an *Orthotylus congrex* Uhler under the name *Lomatopleura caesar* Reut., but this placing must have been an accident.
106. *Lopidea confluens* Say, correct.
108. *Phytocoris scrupus* Say is *P. lasiomerus* Reut.
108. *Phytocoris pallicornis* Reut. is *P. tibialis* Reut.
109. *Phytocoris eximius* Reut., correct.
110. *Phytocoris inops* Uhler, correct.
111. *Neurocolpus nubilus* Say, correct.
112. *Compscerochoris annulicornis* Reut. This is not Reuter's species but a large dark coloured *Phytocoris* of the *eximius* group, perhaps still

undescribed. I have taken the same form about Buffalo and Mr. Moore has sent me specimens taken by him at St. Hilaire, Que.

113. *Calocoris rapidus* Say, correct. *Adelphocoris rapidus* Say.

114. *Calocoris bipunctatus* Fabr., correct.

114. *Pycnopterna amæna* n. sp. This is the *Closterocoris ornata* Uhler and must hereafter be known as *Closterocoris amæna* Prov. Its occurrence at Ottawa, if really taken there, was probably accidental. Its range seems to be restricted to the Pacific region.

116. *Camptobrochis grandis* Uhler, correct.

116. *Camptobrochis nebulosus* Uhler, correct.

118. *Coccobaphes sanguinarius* Uhler, correct.

119. *Lygus pratensis* Linn. is *L. convexicollis* Reut.

120. *Lygus flavonotatus* Prov. is *L. pratensis* Linn., var. *lineolaris* P.B.

120. *Lygus belfragei* Reut. is the red variety of *L. pratensis* Linn.

121. *Lygus invitus* Say. Pinned on this label is a *Lygus tenellus* Van D., and next to it is a *L. invitus* Say.

121. *Lygus contaminatus* Fall. is *L. pabulinus* Linn.

122. *Pæilocapsus lineatus* Fabr., correct.

123. *Pæilocapsus affinis* Reut., correct. *Horcias dislocatus affinis* Reut.

123. *Pæilocapsus marginalis* Reut. I did not find this in the collection, but the determination is undoubtedly correct.

123. *Pæilocapsus goniphorus* Say, correct. *Horcias dislocatus goniphorus* Say. With this specimen is pinned an example of var. *nigrita* Reut. of the same species.

124. *Orthops scutellatus* Uhler is *Tropidosteptes amænus* Reut., var. *palmeri* Reut.

125. *Systratiotus venaticus* Uhler, correct. *Pæiloscytus venaticus* Uhler.

127. *Pamerocoris brunneus* Prov. On this label is pinned an example of *Plagiognathus politus* Uhler, but as it does not agree at all well with Provancher's description of 1872 I am inclined to think that the type specimen was lost and the present one substituted by error.

127. *Pæiloscytus sericeus* Uhler. On this label is an *Orthotylus flavosparsus* Fall.

128. *Pæiloscytus basalis* Reut. On this label is a *Sthenarops malinus*. Neither this nor the preceding specimens agree with the descriptions in the Petite Faune and may have been placed there by mistake.

129. *Capsus ater* Fieb., correct. Authority should have been *Zinnæus*.
130. *Monolocoris filicis* Linn., correct.
131. *Pilophorus bifasciatus* Fabr. is *P. clavatus* Linn.
132. *Stiphrosoma stygica* Say, correct.
133. *Trichia punctulata* Reut. This specimen is in poor condition but is undoubtedly a *Tropidosteptes*, perhaps *pettiti* or *palmeri*. With it stands a pale example of *Lygus pratensis* Linn.
134. *Stenarops chloris* Uhler is *Tropidosteptes commissuralis* Reut.
134. *Stenarops malinus* Uhler is a large pale *Lygus pratensis* Linn.
135. *Labops hesperius* Uhler, correct.
136. *Orthocephalus saltator* Hahn. A Capsid new to me but certainly not the European *saltator* Hahn.
137. *Chlamydatus luctuosus* n. sp. On this label is a broken specimen of *Dicyphus agilis*, but it does not agree with the description entirely and may be an error.
138. *Orthotylus dorsalis* Prov. is *O. congrex* Uhler. This specimen agrees in all respects with Provancher's description of 1872 and the name must take precedence over Uhler's published in 1887.
140. *Dicyphus californicus* Stal, correct.
141. *Idolocoris famelicus* Uhler is *Macrolophus separatus* Uhler.
141. *Idolocoris agilis* Uhler is correct.
143. *Hyaliodes vitripennis* Say, correct.
144. *Malacocoris provancheri* Burque is a good species of *Diaphnidia* near *pellucida* Uhler.
146. *Parthenicus psalliodes* Reut. On this label is a very poor specimen of *Ilucora stalii* Reut.
147. *Globiceps flavomaculatus* Fabr. is *Mimoceps gracilis* Uhler.
148. *Oncotylus decolor* Fall., correct. *Lopus decolor* Fall.
148. *Oncotylus pulchellus* Reut. is *Orthotylus flavosparsus* Fall.
149. *Oncotylus punctipes* Reut. Probably correctly determined. Our American species differs from Reuter's description only in wanting the black pubescence on the antennæ and venter and in having the areoles scarcely darker than the rest of the membrane.
150. *Macrocoleus coagulatus* Uhler, probably correct.
150. *Amblytulus 6-guttatus*, n. sp. A distinct and beautiful species belonging to genus *Macrotylus*. I took it at Ottawa.
152. *Psallus delicatus* Uhler is a form of *Plagiognathus obscurus* Uhler.

153. *Plagiognathus fuscus* Prov. Under this name is placed the ordinary form of *P. obscurus* Uhler, but it is not the *fuscus* nor the *dorsalis* of the NAT. CAN., 1872, as quoted by Provancher. The former is very close to if not identical with *P. politus* Uhler.
154. *Plagiognathus rubricans*, n. sp. A good species pertaining to genus *Rhinocapsus* Uhler. It differs from *vanduseei* Uhler in being larger and in having the second antennal joint entirely black. Mrs. Slosson has recently taken this species at Lake Toxaway, N. C.
155. *Agilliaestes associatus* Uhler, correct. NOTE.—Among the Capsids in this collection is a *Garganus fusiformis* Say named *Megocalum signatum* Dist., and a *Ceratocapsus pumilus* determined as *Ceratocapsus lutescens* Reut
155. *Agalliaestes verbasci* H. S., correct. *Chlamydatus* is now used for this genus.
158. *Corythuca ciliata* Say is a variety of *arcuata* Say.
158. *Corythuca juglandis* Fitch is a typical *arcuata* Say.
159. *Leptostyla oblonga* Say. This seems to be a *Leptobyrsa*, probably *explanata*, but unfortunately I had no specimen for comparison.
159. *Gargaphia tiliae* Walsh, correct.
160. *Pysatochila plexa* Say, correct.
160. *Leptophya mutica* Say, correct.
162. *Phymata wolfi* Stal is *erosa pennsylvanica* Händl.
165. *Aradus robustus* Uhler is *4-lineatus* Say.
165. *Aradus aequalis* Say is *robustus* Uhler.
166. *Aradus acutus* Say. On this label was a species still undetermined in my collection but quite distinct from *acutus* Say.
166. *Aradus 4-lineatus* Say. The species under this name was new to me and was quite distinct from either *4-lineatus* or *robustus*.
167. *Aradus similis* Say. This seemed to be *tuberculifer* Kirby as nearly as I can tell without comparing specimens directly.
167. *Aradus rectus* Say, correct. *A. lugubris* Fallen.
167. *Brachyrhynchus granulatus* Say. New to me but not *granulatus* as determined in my collection.
168. *Brachyrhynchus lobates* Say is the *granulatus* of my collection.
169. *Aneurus politus* Say is *septentrionalis* Walker.
169. *Aneurus inconstans* Uhler, correct.
170. *Cimex lectularius* Linn., correct.
175. *Coriscus subcoleoptratus* Kirby, correct.
175. *Coriscus propinquus* Reut. is the young of the preceding species.
175. *Coriscus vicarius* Reut. is the larval form of *Alydus eurinus* Say.

176. *Coriscus inscriptus* Kirby is *C. rufusculus* Reut. The name *Reduviolus* is now used for this genus. NOTE.—In the collection is an *Acholla mutispinosa* De G. labelled *Sinea coronata* Stal, and a *Diplocodus exsanguis* Stal. labelled *Acholla tabida* Stal.
176. *Coriscus ferus* Linn., correct.
180. *Sinea diadema* Fabr., correct.
181. *Diplocodus luridus* Stal. is *Diplocodus luridus* Stal., female.
181. *Darbanus georgiae* Prov. is a worn female specimen of *Diplocodus luridus* Stal.
182. *Darbanus palliatus*, n. sp. is the male of *Diplocodus luridus* Stal.
182. *Evagoras marginata*, n. sp., is *Zelus cervicalis* Stal.
183. *Melanolestes picipes*, H. S., correct.
183. *Melanolestes abdominalis*, H. S., correct. Leconte is authority for this species.
184. *Opsicætus personatus* Linn., correct. An immature specimen is his *Reduvius albosignatus* as suggested by him. The name *Reduvius* is now used for *Opsicætus*.
186. *Emesa longipes* De Geer. Under this name is a *Ploiariola*, probably *errabunda* Say.
186. *Cerascopus errabundus* Say. The insect on this label seems to be a *Barce* but I could not locate the species without material for comparison.
189. *Salda ligata* Say, probably correct.
190. *Salda obscura* Prov. is *littoralis* Linn.
190. *Salda major* Prov. is *deplanata* Uhler which name it must supercede as it has priority by one year.
191. *Salda littoralis* Linn. is *interstitialis* Say.
191. *Salda lugubris* Say. Apparently *pleta* Uhler but I could not be certain without specimens for comparison.
192. *Sciadopteris bouchervillei* Prov. is *coriacea* Uhler which name it must supercede having priority.
193. *Limnobates lineata* Say, correct.
195. *Gerris rufoscutellatus* Latr., correct.
195. *Gerris remigis* Say, correct.
195. *Gerris marginatus* Say, correct.
196. *Gerris canaliculatus* Say. This may be *buenoi* Kirk. It is smaller than *marginatus* and stouter than *canaliculatus* usually is but I

could not be certain of the determination without specimens for direct comparison.

197. *Belostoma grisea* Say, correct. *Benacus grisea* Say.  
 198. *Zaita fluminea* Say, correct. *Belostoma fluminea* Say.  
 199. *Ranatra fusca*, P. B. is *R. americana* Montd.  
 200. *Notonecta irrorata* Uhler, correct.  
 201. *Notonecta undulata* Say, correct.  
 202. *Corisa*, spp. My own material in this genus is still unworked and I did not attempt to locate the Provancher species.  
 204. *Prionosoma villosum*, n. sp. does not differ in any respect from *podopoides* Uhler.  
 204. *Euschistus jugalis*, n. sp. I could not find this in the collection but from the description I am now strongly inclined to consider it the form of *servus* with acute *humerali* although it might be *conspersus* Uhler.  
 205. *Platygaster pacificus*, n. sp., correct.  
 211. *Cicada pruinosus* Say, correct.  
 212. *Cicada septendecim* Linn., correct. *Tibicina septendecim* Linn.  
 213. *Cicada canadensis*, n. sp. This is *rimosa* Say more strongly marked with orange on the base of the elytra and wings than usual. I have an exactly similar specimen which I cannot distinguish from *rimosa*. It belongs to genus *Okanagama* Dist. and not to *Tibicen*, and is not *noveboracensis* Emmons as I had conjectured.  
 214. *Cicada rimosa* Say. The ordinary dark form of this species.  
 217. *Amphiscepa coqueberti* Kirby is *Otiocerus degeeri* Kirby.  
 218. *Hysteropterum semivitreum*, n. sp. This species was a surprise to me and I had taken nothing at all allied to it for comparison. It seems to belong to the Californian group of *Issids* and is very close to *Dictyobia permutata* Uhler. It may be an accidental introduction from the west.  
 219. *Scolops sulcipes* Say, correct.  
 220. *Helicoptera septentrionalis*, n. sp. This is the *Elidiptera* I have been determining as *septentrionalis* Prov.  
 221. *Helicoptera vestita*, n. sp., is *Elidiptera opaca* Say.  
 222. *Cixius stigmatus* Say. This is the *C. stigmatus* of my table published in CAN. ENT., XXXVIII, p. 408, Dec., 1906.  
 223. *Oliarus quinquelineatus* Say, correct.  
 223. *Oliarus cinnamomeus*, n. sp., correct.  
 224. *Delphax unipunctata* Prov. is *Stenocranus dorsalis* Fitch.  
 225. *Delphax furcata* Prov. This seems to be a good species of *Liburnia*.

229. *Enchenopa binotata* Say, correct.
229. *Enchenopa latipes* Say, correct. *Campylenchia latipes* Say.
230. *Archasia canadensis*, n. sp., is *A. belfragei* Stal.
231. *Janthe expansa* Germ, correct. *Antianthe expansa* Germ.
232. *Entyilia sinuata* Germ. is male of *E. bactriana* Germ.
232. *Entyilia carinata* Germ. is female of *E. bactriana* Germ,
233. *Entyilia concava* Germ. is *E. concisa* Walk.
234. *Ceresa diceros* Say, correct.
235. *Ceresa bubalus* Fabr. On the label is *C. taurina*, Fh. and by it a male of *C. bubalus* Fabr.
235. *Ceresa brevicornis* Fitch. On this label is a female *C. basalis* Walk., and next it is a female *bubalus* Fabr.
235. *Ceresa semicrema* Say. Under this name is a dark male and female of *Ceresa basalis* Walk.
237. *Stictocephala inermis* Fabr., correct.
237. *Stictocephala festina* Say is *lutea* Walk.
238. *Cyrtosia vau* Say is probably correct. This specimen has no cloud at apex of the elytra and is larger and darker than usual.
239. *Cyrtosia trilineata* Say, correct.
239. *Cyrtosia fenestrata* Fitch. Under this name is a dark male of *vau* Say.
240. *Cyrtosia ornata*, n. sp., is the male of *C. cinereus* Emmons.
241. *Thelia univittata* Harr. is *godingi* Van D.
242. *Thelia bimaculata* Fabr., correct.
243. *Telamona scalaris* Fairm., correct. *Heliria scalaris* Fairm.
243. *Telamona tristis* Fitch, correct.
244. *Telamona unicolor* Fitch, correct.
144. *Telamona fasciata* Fitch, correct. Male of *unicolor* Fh.
244. *Telamona reclinata* Fitch, correct.
245. *Publilia concava* Say, correct.
246. *Carynota mera* Say, correct.
246. *Carynota picta*, n. sp., is *C. porphyrea* Fairm.
247. *Ophiderma marmorata* Say is *Carynota stupida* Walk. (*muskokensis* Godg.).
248. *Ophiderma inornata* Say is *flava* Godg., a little clouded with reddish.
248. *Tragopa brunnea* Prov. is *Acutalis semicrema* Say.
250. *Platycotis 4-vittata* Say, correct.

251. *Platycotis nigromaculata*, n. sp., is *P. sagittata* Germ.  
 [Under the name *Telamona querci* Fh. is a species I cannot distinguish from *obsoleta* Ball (from memory only) but it is certainly not *querci*.]
253. *Bruchomorpha oculata* Newm., correct.
254. *Embolonia tricarinata*, n. gen. et. sp., is the *macropterous* form of *Bruchomorpha oculata* Newm.
255. *Aphrophora parallela* Say, correct.
256. *Aphrophora 4-notata* Say, correct.
256. *Aphrophora quadrangularis* Say, correct. *Lepyronia id.*
257. *Philænus spumarius* Linn., correct.
258. *Philænus lineatus* Linn., correct.
258. *Philænus albiceps* Prov., is *spumarius* var. *leucocephala* Linn.
259. *Clastoptera obtusa* Say, correct.
260. *Clastoptera proteus* Fitch is *obtusa* var. *tristis* Van D.
260. *Clastoptera saint-cyri* Prov. is the variety of *proteus* later named subspecies *flava* by Ball.
263. *Tettigonia viridis* Fabr. This is the European *viridis* Linn. As there seems to be no reason to question Provancher's statement that this specimen was taken in Quebec we must add the species to our list of North American *Hemiptera*.
263. *Tettigonia tripunctata* Sign is *Kolla tripunctata* Fitch.
265. *Proconia undata* Fabr., correct.
265. *Proconia costalis* Fabr., correct.
266. *Diedrocephala mollipes* Say is *Dræculacephala noveboracensis* Fitch,
267. *Diedrocephala coccinea* Forst., correct.
267. *Diedrocephala hieroglyphica* Say is *Tettigoniella gothica* Sign.
268. *Helochara communis* Fitch, correct.
268. *Acopsis viridis* Linn. is *Dræculacephala mollipes* Say.
269. *Gypona quebecensis* Prov. Under this name is straight *cana* Burm. It is not the species formerly sent to me by Provancher as *quebecensis* which was smaller and of a deeper green color.
269. *Gypona hullensis*, n. sp., is *pectoralis* Spangb.
270. *Eucanthus orbitalis* Fitch. Dr. Ball now places this as a synonym of *E. acuminatus* Fabr.
270. *Penthimia picta* Prov. The specimen is missing from this label but there can be no question that it is the male of *americana* Fitch.
275. *Platymetopius acutus* Say, correct.

275. *Platymetopius magdalensis*, n. sp. This is the species later described by Prof. Osborn as *obscurus*.
276. *Scaphoideus immistus* Say, correct.
277. *Scaphoideus auronitens*, n. sp., correct.
278. *Deltocephalus curtisii* Fh., correct. *Athysanus curtisii* Fh.
278. *Deltocephalus inimicus* Say, correct.
279. *Deltocephalus citronellus* Prov. The insect on this label is a *Thamnotettix* probably still undescribed. It is not the form described in the NAT. CAN., p. 378.
279. *Deltocephalus minkii* Fieb., correct.
280. *Deltocephalus sayi* Fitch, correct.
280. *Selenocephalus placidus*, n. sp. This is an *Acucephalus* new to me. It has a dark shade under the sharp lunately rounded anterior margin of the vertex and the apex of the elytra are coarsely alternated with fuscous points which are not properly indicated in Provancher's description. It may be one of the European species already recognized from this country.
281. *Athysanus obsoletus* Kirsch. is now known as *relativus* Gill. & Baker.
282. *Athysanus plutonius* Uhler. This has more recently been separated out as a distinct species under the name *uhleri* Ball.
282. *Acocephalus circumflexus*, n. sp., is the male of *albifrons* Linn.
283. *Thamnotettix citronellus* Prov. Under this name is a very pale specimen of *eburata* Van D., but it does not answer to the description in the NAT. CAN., p. 378, and cannot be that insect.
284. *Thamnotettix clitellarius* Say, correct.
284. *Thamnotettix subcupræus* Prov., correct.
284. *Thamnotettix melanogaster* Prov., correct.
285. *Thamnotettix decipiens*, n. sp. The only specimen on this label is much paler than this species is generally found in the east.
285. *Thamnotettix seminudus* Say, correct. *Eutettix seminuda* Say.
286. *Jassus unicolor* Fh., correct. *Chlorotettix unicolor* Fh.
286. *Allygus irroratus* Say, correct. *Phlepsius irroratus* Say.
287. *Cicadula 6-notata* Fall., correct.
288. *Bythoscopus clitellarius* Fitch is *Idiocerus provancheri* Van D.
289. *Bythoscopus fenestratus* Fh. is a pale form of *Oncopsis nigrinasi* Fh.
289. *Bythoscopus variegatus* Fh., correct. *Oncopsis variegatus* Fh.
290. *Bythoscopus pruni* n. sp., correct. *Oncopsis pruni* Prov.
291. *Idiocerus pallidus* Fitch, correct.

292. *Idiocerus verticis* Say. I was not able to locate this nearer than to place it in the *alternatus* group. It is not the western *verticis*.
292. *Idiocerus duzeii*, n. sp., correct.
292. *Idiocerus subbifasciatus* Say is *lachrymalis* Fitch.
293. *Idiocerus alternatus* Fitch, correct.
293. *Idiocerus novellus* Say, correct. *Agallia novella* Say.
294. *Pediopsis viridis* Fitch, correct.
295. *Pediopsis basalis* Van D., correct.
295. *Pediopsis insignis* Van D., correct. Now known as *trimaculata* Fitch. This genus must be known as *Macropsis*.
295. *Pediopsis flavescens* Prov. A small female of *Oncopsis nigrinasi* Fh.
296. *Agallia sanguinolenta* Prov., correct.
296. *Agallia 4-punctata* Prov., correct.
298. *Erythroneura mali*, n. sp., is *Dicraneura communis* and must be known as *Dicraneura mali* Prov.
298. *Erythroneura vitis* Harris, correct.
299. *Erythroneura vitifex* Fitch, correct.
299. *Erythroneura vulnerata* Fitch, correct.
299. *Erythroneura rosæ* Linn., correct. These are now placed in *Typhlocyba*.
300. *Typhlocyba jocosa* Prov. A reddish form of *Balclutha punctata* Thunb.
301. *Typhlocyba punctata* Thunb. is the common green form of that species.
335. *Cymus angustatus* Stal., correct.
336. *Aradus abbas* Bergr., correct.
336. *Coriscus flavo-marginatus* Scholz., correct.
337. *Delphax bifasciatus*, n. sp., is *Stobaera tricarinata* Say, a little faded.
338. *Ceresa subulata* Say is *constans* Walk.
338. *Helochara bifida* Say, correct. *Kolla bifida* Say.
339. *Deltocephalus chlamydatus*, n. sp. is an *Athysanus* later described as *infusata* by Gillette and Baker.
339. *Deltocephalus superbus*, n. sp., is a *Xestocephalus* later described by me as *fulvocapitatus*.
340. *Erythroneura obliqua* Say, correct. *Typhlocyba obliqua* Say.
340. *Typhlocyba unica*, n. sp., is an *Empoasca* later described as *splendida* by Gillette.

## ON SOME UNDESCRIBED FORMS OF FLORIDA COLEOPTERA.

BY W. S. BLATCHLEY, INDIANAPOLIS, INDIANA.

In 1911 I spent the time from January 8th to April 17th in Central and Southern Florida, and while there collected insects in a number of localities, notably near Sanford, St. Petersburg, Sarasota, Ft. Myers, Little River, and Ormond. The time of year was not the best for the most successful collecting, as the insects of Florida hibernate in much the same manner as they do farther north, many of them being represented there, as here, during the winter months in the egg, larval and pupal stages. However, about 500 species of Coleoptera were taken, and also many Orthoptera, Hemiptera and butterflies. It is at present my intention to again visit Florida in January, 1913, and, perhaps, stay later in the spring, making collections in the same orders, and then publish notes on the "catch" of the two seasons. Meanwhile, a few forms of Coleoptera, which have apparently hitherto escaped observation, are herewith described.

*Calambus marginipennis*, sp. nov.

Short, rounded, oval, subdepressed above, moderately convex beneath. Head, thorax, under surface, femora and tibiae reddish brown; elytra piceous-black, shining, with narrow side margins, broadening into a rounded lobe at middle, reddish brown, tarsi and apical fourth of antennae dusky. Clypeus broadly rounded, distinctly margined. Head and thorax finely, evenly but not densely punctate; the elytra more coarsely, densely and rather shallowly punctate. Meso- and meta-sterna coarsely, rather sparsely and deeply punctate, the punctures of abdomen finer and more shallow. Length 2.5—2.8 mm.

Frequent in shallow brackish ponds, one to two miles inland, near Sarasota, Florida. March 1—3. This beetle has the form of *C. acaroides* Lec., but the elytra are differently coloured, and without the carinae of that species. It is a little larger, more rounded, and much more coarsely punctate than *C. farctus* Lec. In a few specimens the elytra are mostly wholly piceous, but in the great majority the paler side margins broaden at middle to form a rounded lobe.

*Aphodius campestris*, sp. nov.

Elongate-oblong, convex. Head and thorax reddish or pale chestnut brown, shining, the latter with front margin darker; elytra, under surface

November, 1912

and legs brownish yellow. Head very finely and sparsely punctate, not tuberculate; clypeus broadly and shallowly emarginate at middle, the sides curved. Thorax not narrowed in front, sides broadly curved, hind angles obtusely rounded; base very distinctly margined, disk finely and sparsely punctate. Elytra equal in width to thorax, finely striate, the striæ finely and indistinctly punctate; intervals feebly convex, smooth. Front tibiæ stout, broad, distinctly punctate in front, strongly 3-toothed. Hind tibiæ rather slender; first joint of hind tarsi as long as the next three together. Length 3 mm.

Two specimens from beneath dry cow-dung in company with *A. vestiarius* Horn, near Sarasota, February 17th. Closely related to *A. rubeolus* Beauv., but smaller, more slender, with paler elytra, longer basal joint of hind tarsus, and with base of thorax distinctly margined. One of the types is in the collection of F. Blanchard, Tyngsboro, Massachusetts.

*Hymenorus granulatus*, sp. nov.

Oblong-parallel, subdepressed, sparsely pubescent with fine recumbent grayish hairs. Black, shining; palpi and mandibles reddish brown, tarsi piceous. Eyes large, separated by about one-half their own diameters; antennæ stout, half the length of the body, the joints flattened, triangular, the third twice as long as second, half the length of fourth. Thorax at base one-third wider than long, sides broadly rounded into the front margin, base slightly sinuate each side near middle; disk strongly declivent in the region near the front angles, obsoletely foveate each side of middle at base, very densely and coarsely punctate, the punctures feebly separated or in part confluent. Elytra slightly wider than base of thorax, their sides parallel to apical fourth; disk striate, the intervals convex, densely granulate-punctate. Basal joint of hind tarsi slightly curved, one-half longer than the remaining joints together. Length 7—7.5 mm.

Described from four specimens beaten from scrub-oak foliage near Sanford, March 28—29. The dense punctuation of thorax and elytra, taken in connection with the uniform shining black color, readily distinguishes this from all other described species of *Hymenorus*.

*Andrimus confusus*, sp. nov.

Elongate-oval, sparsely clothed with short, suberect yellowish hairs. Head, thorax, under surface and legs reddish brown; elytra and antennæ dark chestnut brown. Head transversely sulcate in front of eyes, finely and rather closely punctate, alutaceous between the punctures; eyes large,

separated by nearly their own width; antennæ slender, one-half the length of body, the joints obconical, the third more than twice the length of second, one-half the length of fourth. Thorax three-fourths as long as wide, sides parallel from base two-thirds their length, then broadly rounded into the front margin; disk evenly convex, very finely alutaceous, finely and sparsely punctate, without trace of median line or basal foveæ. Elytra one-fourth wider than thorax, their sides parallel to apical fourth then rounded to a blunt apex; disk striate, the striæ with rows of close-set punctures; intervals feebly convex, each with two rows of minute punctures. Abdomen smooth. Basal joint of hind tarsi equal in length to the other three combined. Length 9 mm. Two species beaten from live oak near Sanford. March 29.

*Diaperis maculata floridana*, var. nov.

This variety differs from typical *maculata* (*hydni* Fab.) in the colour of the elytra, the elongate submarginal dark spot near the humeral angle of *maculata* being absent and the large irregular black spot on apical third here uniting with the sutural black stripe to form a common cross-bar.

Frequent beneath bark of fungus-covered oak log near Sarasota. Feb. 28. Horn in his remarks on *D. maculata*\* states, "This species is remarkably uniform in its system of elytral coloration."

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Mr. F. W. L. Sladen, F. E. S., has been appointed Assistant Entomologist for Apiculture in the Division of Entomology, Ottawa. Up to the time of his appointment, Mr. Sladen devoted his whole time to Apiculture in England, where he possessed a large apiary and made a special study of queen-rearing according to scientific methods. His writings on the subject include "Queen-rearing in England", "Breeding the British Golden Bee", and several articles on the collection of pollen, etc. His studies of the *Bombi* are recorded in "The Humble Bee", reviewed in the present number of this Journal. As he has travelled in Europe, India and North America his knowledge of Apiculture and native bees is unusually wide and his appointment will prove an additional source of strength to the Division of Entomology, where he will have charge of the apicultural work. He will also study the Canadian *Bombi* and native bees.

C. G. H.

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\*Trans. Amer. Philosophical Soc., XIV, 379.

NEW SPECIES OF *FURCOMYIA* (*TIPULIDÆ*).BY CHAS. P. ALEXANDER, ITHACA, N. Y.<sup>1</sup>

The crane-flies herein characterized as new are, with one exception, Neotropical forms. There have been described by previous writers 15 species of South American *Limnobiini* that I have no hesitation in referring to the genus *Furcomyia* (= *Dicranomyia* of authors). With the single exception of *F. muscosa* End. (Ecuador), the forms are Chilian or Patagonian, and are species named by Macquart,<sup>2</sup> Blanchard,<sup>3</sup> Philippi<sup>4</sup> and Bigot.<sup>5</sup> No species have been mentioned from the various countries of Middle America, and it is probably because of this fact that so many of the forms received proved to be novelties.

The material included is the property of Eastern Museums, as follows : U. S. National Museum, received through Mr. Frederick Knab, and the American Museum of Natural History, received through Mr. J. A. Grossbeck. I express my sincere gratitude to both of these gentlemen for their kind help in this respect.

*A Key to the spotted-winged Furcomyiæ.*

(South America (northern portion), Central America and the Antilles.)

1. Sc short, ending before, or opposite, or only slightly beyond, the origin of Rs. .... 2.  
Sc long, ending far beyond the origin of Rs. .... 5.
2. Wing-marking abundant, forming a network. .... 3.  
Wing-marking scanty, confined to the neighbourhood of veins. .... 4.
3. Legs with the femora uniform brown apically ; wing pattern  
regular ..... *reticulata*, sp. n.  
(Cuba)  
Legs with the femora yellowish apically with a broad gray subapical ring ; wing pattern irregular. .... *muscosa* Enderl.  
(Ecuador)
4. Legs black, a reddish annulus far before the tip of the femur ; no supernumerary cross-vein in cell R<sub>3</sub> ; seam on cord of wing, dark brown, narrow ; antennæ dark except at base. .... *osterhouti*, sp. n.  
(Panama)

1. Contribution from the Entomological Laboratory, Cornell University.

2. Macquart, Pierre Justin; Dipt. Exot., Vol. I, pt. 1, p. 72 (1838).

3. Blanchard, Emile; in Historia fisica y politica de Chili Zoología, Tome 7, pp. 337-344, esp. pp. 340-343 (1852).

4. Philippi, Rodolfo; Verhand. zoöl-bot. gesells. Wien., Vol. 15, pp. 597, 598, 602-617, 780, 781; esp. 612-614 (1865).

5. Bigot, Jacques; Mission Scientifique du Cap Horn, 1882-1883; Tome 6, 2nd part, pp. 5-10; esp. pp. 8, 9, pl. 2, fig. 2 (1888).

- Legs with the femora dark brown at the tip with an indistinct sub-apical ring; a cross-vein in cell  $R_3$ ; seam on cord pale brown, broad; antennæ pale.....*translucida*, sp. n.  
(Panama)
5. Wings with an abundant pattern in the cells.....*gloriosa*, sp. n.  
(Guatemala)
- Wings with the markings scanty and more or less confined to the neighbourhood of veins.....6.
6. Wing hyaline, with the markings brown; pleuræ with a brown band; tibïæ and tarsi uniform dark.....*eiseni*, sp. n.  
(Guatemala)
- Wing dusky, with the markings dark brown; no pleural band; tibïæ at tip, and tarsi, orange brown.....*lutszi*, sp. n.  
(Brit. Guiana)

*Furcomyia reticulata*, sp. n.

Antennæ brown; thorax yellow, with an irregular brown median stripe; legs yellow, darkening to brown apically; wings hyaline, reticulated with brown marks.

♀.—Length, 4.5–6 mm; wing, 5.3–5.4 mm.

♀.—Head: rostrum yellowish brown; palpi dark brownish black. Antennæ, basal segments pale, whitish; flagellum light brown, the segments rounded, becoming oval and then elongated toward the tip of the antennæ. Front, vertex and occiput dull yellow, the vertex and occiput prolonged caudad, with two brown stripes above and brown on the sides.

Thorax: pronotum brown, thickly yellow pollinose; a small brown median spot at the caudal margin of the scutum. Mesonotum, præscutum dull yellow sericeous, a broad, light brown median stripe, overlain by a dark brown stripe, whose margins are very irregular; two interrupted brown stripes on either side of the median mark, the outermost very pale on the margin of the sclerite; scutum dull brown, with four brown stripes, continuations of the lateral præscutal vittæ; the two stripes on each side unite at the caudal margin of the sclerite and run half across the scutellum; scutellum very pale, whitish yellow, sending a median prolongation cephalad onto the scutum; postnotum brown. Pleuræ light brown, thickly pale yellowish pollinose. Halteres very pale yellow, the knob brown. Legs: coxæ, trochanters and femora dull yellow, the femora darkening to brown apically; extreme base of the tibïæ whitish, rest of tibïæ and the tarsi dark brown. Wings, veins brown, except costa, which is light yellow and black alternated; membrane hyaline, costal cell with

small, equally-spaced brown marks; from the base to the tip of  $R_1$  about 19, these marks a trifle narrower than the hyaline interspaces; five large brown blotches along the radial cells, the first at the base of vein  $M$ ; second in middle of cell  $R$ ; third just before the origin of  $R_s$ ; fourth over the fork of  $R_s$ , and the last at the tip of  $R_{2+3}$ , irregular; all the cells with narrow brown marks across them producing a net-work. Venation (see fig. p):  $Sc$  short,  $Sc_1$  ending before the origin of  $R_s$ ,  $Sc_2$  about opposite it;  $Sc_2$  longer than  $Sc_1$ ;  $R_s$  angular at base; basal deflection of  $M_{1+2}$  long, so that the inner end of cell 1st  $M_2$  is almost on a level with cell  $R_s$ ; basal deflection of  $Cu_1$  before fork of  $M$ , sometime; far before; cross-vein  $m$  far out, so that the deflection of  $M_s$  is much longer than  $m$ .

Abdomen, tergum, segments brown, darkest on caudal margin, paler on the sides; sternum dull yellow; a dark brown median spot on caudal margin of each sclerite.

Holotype, ♀.—Pinar del Rio, Cuba; 1900 (Palmer and Riley).

Paratype, ♀.—Type locality, March 27, 1900 (Palmer and Riley).

Types in U. S. Nat. Mus. coll. (No. 15,133).

*Furcomyia osterhouti*, sp. n.

Whitish; mesothoracic præscutum with a broad median stripe and two short lateral ones; femora black, with a postmedian reddish annulus; wings with brown spots, bands and seams.

♀.—Length, 6.5 mm (about); wing, 5.7 mm.

♀.—Head: rostrum and palpi dark brownish black. Antennæ, basal segments yellowish brown, flagellum very dark brown, almost black. Front, vertex and occiput pale, whitish, tinged with brown.

Thorax: pronotum dark brown above, abruptly pale, yellowish white on the sides. Mesonotum pale yellowish white, the median stripe broad, dark brown; the lateral stripes appear on the hind margin of the præscutum and run back across the scutum and scutellum; at the caudal end of the latter sclerite they unite and form a very broad median band, which occupies the dorsum of the postnotum. Pleuræ pale, whitish. Halteres, knob and most of the stem dark brown. Legs: coxæ and trochanters yellowish brown; femora black, with a distinct reddish annulus at about three-fourths the length; tibiæ reddish at base, rest of tibiæ and tarsi shiny black. Wing with a slight yellowish tinge, especially in the cephalic cells; a very narrow brown mark from  $h$  caudad; a brown mark from the tip of  $Sc_1$  down beyond  $R_s$ ; a brown mark at tip of  $R_1$  and on  $r$ ; a narrow seam along the cord; outer end of cell 1st  $M_2$  seamed with brown; most

of the veins seamed with brown; apical portions of the radial cells suffused with brown. Venation: (See fig. q.) Sc ends beyond origin of Rs, Sc<sub>2</sub> at its tip; cross-vein *r* at tip of R<sub>1</sub>; Rs arcuated at origin; basal deflection of Cu<sub>1</sub> before the fork of M.

Abdomen, tergum yellowish, the apex of each sclerite brown, with a narrow brown median band; sternum, markings less clearly defined.

Holotype, ♀.—Bocas d'Toro, Panama; Sept. 28, 1903. (P. Osterhout, coll.)

Type in U. S. Nat. Mus. coll. (No. 15,130.)

*Furcomyia translucida*, sp. n.

Whitish; mesothoracic præscutum with a narrow median brown stripe; femora darkened at the tip, pale subapically; wings with brown spots and bands; a supernumerary cross-vein in cell R<sub>3</sub>.

♂.—Length, 5.8 mm.; wing, 6.9 mm.; middle leg, femur, 5.7 mm.; tibia, 5.2 mm.

♂.—Head: rostrum and palpi dark brown. Antennæ, basal segments brown, flagellum yellowish, the terminal three or four segments brown; segments of the flagellum short, globular, the apical segments more elongated. Front, vertex and occiput light yellow, the vertex with a large brown spot in the centre.

Thorax: pronotum dark brown, becoming paler, yellowish white on the sides; mesonotum, præscutum very pale, almost white, with a clearly-defined dark brown median stripe, rather narrow, ending at the suture; scutum and scutellum pale, whitish, with a dark brown stripe on each lobe, running backward and meeting on the caudal margin of the scutellum; postnotum with a very broad brown median mark resulting from the confluence of the scutellar stripes. Pleuræ very pale, whitish; a brownish mark on the propleuræ above the fore coxa. Halteres pale, knob dark brown. Legs: coxæ and trochanters whitish; femora yellowish brown; a clearer yellow subapical ring, tip broadly brown, the extreme apex again rather lightened; tibiæ and tarsi brown, gradually increasing to dark brown. Wings: subhyaline or very faintly yellowish; a brown mark at the humeral cross-vein extending down across the arculus; a second mark at tip of Sc<sub>1</sub> and down across Rs almost to M; a third, extending into a cross-band, from the stigma, where it is darkest, unbroken across the cord; a brown seam on the supernumerary cross-vein in cell R<sub>3</sub>; outer end of cell 1st M<sub>2</sub> seamed with brown. Venation: (See fig. r.) Sc short, ending just beyond the origin of Rs; Sc<sub>2</sub> just opposite origin of Rs; R<sub>1</sub> extending beyond cross-vein *r-m*, *r* at its tip. Rs square at its origin and

spurred, in a line with  $R_{2+3}$ ; a strong cross-vein in cell  $R_3$  at about two-thirds of the length of the cell; cell 1st  $M_2$  rather elongate; basal deflection of  $Cu_1$  at the fork of  $M$ .

Abdomen: tergum pale yellowish white, apical fourth dark brown; apex sternum similar, but the dark apex not so clearly defined.

Holotype.—♂. Bocas d'Toro, Panama; Sept. 28, 1903. (P. Osterhout, coll.)

Type in U. S. Nat. Mus. coll. (No. 15,129)

*Furcomyia gloriosa* sp. n.

Antennæ brown; thorax gray, dorsum striped with darker; legs, femora dark on apical half, with a subterminal yellow ring; wing spotted and suffused with brown.

♀.—Length about 6.5 mm.; wing, 8.4 mm.

♀.—Head: rostrum and palpi dark brown. Antennæ, basal segments very dark brown; basal five flagellar segments lighter brown, apical segments dark brown. Front, vertex and occiput dull gray, with a black mark on vertex along inner margin of the eye.

Thorax: pronotum dull greenish gray pollinose, with a broad black stripe on the side of the scutum. Mesonotum, præscutum dark brown, thickly grayish pollinose, with a black stripe on either side of the narrow median gray line, running from the anterior margin of the sclerite almost to the suture. Lateral stripes short, broad, beginning behind the pseudosutural fovea, running across the suture and covering most of the scutum; scutum in middle and along the caudal margin dark brown; scutellum and postnotum dark brown. Pleuræ black, greenish gray pollinose. Halteres, stem pale yellowish brown, knob dark brown. Legs, coxæ and trochanters dark brown, the former gray pollinose; femora light yellow, the apical quarter dark brown, with a subapical yellow ring. Wings hyaline or nearly so; costal cell with four brown marks, the last at  $Sc$ , the 3rd over the origin of  $R_s$ ; a large square mark at the tip of  $R_1$  (stigmal) extending down over the fork of  $R_s$ ; cells 2nd  $R_1$  and  $R_3$  with large brown spots filling most of the cells; cells  $R_3$  to  $Cu_1$  suffused with lighter grayish brown and with hyaline spots; basal and anal cells with smaller brown spots; a series of about four in cell 1st  $A$ . Ends of veins  $Cu_2$ , 1st and 2nd  $A$ , with broad, grayish brown suffusions. Veins brown;  $Sc$  and  $R$  yellow, except where located in the brown markings, where they are black. Venation: (See fig. j.)  $Sc$  long, ending far beyond the origin of  $R_s$ , but slightly before its middle;  $R_s$  long; basal deflection of  $Cu_1$  far before the fork of  $M$ .

Abdomen, tergum dark brown; sternum lighter brown, extreme caudal margins of the sclerites light yellow.

Holotype.—♀. Tonicipan, Guatemala, Cent. Am., 1902. (Dr. G. Eisen.)

Type in U. S. Nat. Mus. coll. (No. 15,132.)

This insect agrees superficially with *muscosa* End.\* of Ecuador, but has *Sc* much longer, legs very different in colour, and is a much smaller species. *Muscosa* has a supernumerary cross-vein in cell  $R_3$ , but this may not be normal, as it is not mentioned in the specific description.

*Furcomyia eiseni*, sp. n.

Antennæ black throughout; body yellow; legs, femora yellow, passing into brown on the tibiæ and tarsi; wings hyaline, with six brown spots along costa, the second, largest, at origin of  $R_s$ .

♂.—Length, from 4.5–5 mm.; wing, 6.3–7.5 mm.

♀.—Length, from 4.5–6 mm.; wing, 5.7–7 mm.

Head: rostrum and palpi black. Antennæ black throughout in the ♂, with conspicuous long hairs, not so noticeable in the ♀. Front, vertex and occiput blackish, grayish pollinose in front.

Thorax: pronotum dull yellow; mesonotum dull reddish yellow, with a very indistinct darker median stripe and darker lateral stripes which are brownish, these continued back on the scutum, where they cover the lobes; scutellum and postnotum brownish. Pleuræ yellow, with a more or less conspicuous dark brown stripe running from the cervical sclerites to the postnotum. Halteres yellow at base; apical half of the stem and the knob brown. Legs: coxæ and trochanters light yellow; femora yellow at base, passing into brown; tibiæ and tarsi darker brown. Wings hyaline; cells *C* and *Sc* slightly yellowish; six brown marks along the costal margin on the cross-veins, as follows: A brown mark at the wing base; a large brown rectangular mark at the origin of  $R_s$ ; a third at the tip of *Sc*, where it is continued down over the fork of  $R_s$ , here meeting the fourth blotch, located at the tip of  $R_1$ ; the marks continuing across the cord; wing subapically largely dark; outer end of cell 1st  $M_2$  seamed with brown; a brown mark in the end of cell 2nd  $R_1$  and cell  $R_3$ ; ends of veins  $Cu_1$ ,  $Cu_2$  and 1st *A*, with small brown clouds; a large spot at end of 2nd *A*. Venation: (See fig. s.) *Sc* long, ending just before the fork of  $R_s$ ,  $Sc_2$  at its tip;  $Ks$  square at its origin; base of cell 1st  $M_2$  arcuated, nearly on a level with the inner end of cell  $R_3$  (as in *stulta* O. S.);

\*1912. Zool. Jahrbuch.; pt. 1, pp. 75, 76; fig. W<sup>1</sup>. (*Dicranomyia*.)

basal deflection of  $Cu_1$  just beyond the fork of  $M$ ;  $Cu_2$  generally shorter than the deflection of  $Cu_1$ .

Abdomen, tergum dark brown, the bases of the sclerites somewhat paler; sternum light yellow, the caudal and lateral margins conspicuously dark brown.

Holotype.—♂. Aguna, Guatemala, Cent. Am. (2,000 ft.); Sept., 1902. (Dr. G. Eisen, coll.)

Allotype.—♀. With the type.

Paratypes.—5, ♂ ♀. With the type.

Types in U. S. Nat. Mus. coll. (No. 15,131), except one paratype in author's collection.

*Lutznayi lutzii*, sp. n.

Antennæ black; body orange; abdomen brown; legs black, tip of tibiæ and the tarsi pale, orange yellow; wings dusky, with brown marks.

♀.—Length about 6 mm.; wing, 7.3 mm.; middle leg, femur, 5.4 mm.; tibia, 5.8 mm.

Head: rostrum and palpi dark brownish black. Antennæ dark brownish black. Front thickly gray pollinose; vertex and occiput dark orange brown, brighter orange on the occiput.

Thorax: pronotum and mesonotal præscutum and scutum deep orange; scutellum and postnotum much lighter coloured, yellowish orange. Pleuræ orange yellow, lighter coloured ventrally. Halteres, stem yellowish basally, darkening to the blackish knob. Legs: coxæ and trochanters orange yellow, extreme base of femora yellow; remainder of femora and most of the tibiæ dark brownish black; tibiæ with the apical eight pale orange brown; tarsi orange brown. Wings suffused with dark brown, costal and subcostal cells and the radial cells very dark; dark brown spots arranged as follows: a rounded mark at the origin of  $R_s$ ; one at fork of  $R_s$ , continued down the cord as a broken seam; a round spot at end of  $R_1$ ; outer end of cell 1st  $M_2$  seamed with dark brown. Venation:  $Sc$  long, ending nearer to the fork of  $R_s$  than to the origin,  $Sc_2$  at tip of  $Sc_1$ . Cross-vein  $r$  at the tip of  $R_s$ ; deflection of  $R_{4+5}$  long; basal deflection of  $Cu_1$  far before the fork of  $M$ .

Abdomen, tergum, segments dark brown; sternum light yellow.

Holotype.—♀. Tukeit, British Guiana; July 19, 1911. (F. E. Lutz, coll.)

Type in American Museum of Natural History.

*Furcomyia omissa*, sp. n.

Small; dark brown; wings dark, stigma present;  $Sc_1$  short,  $Sc_2$  apparently lacking.

♀.—Length, 3.7–4 mm.; wing, 4–4.2 mm.

♀.—Head: rostrum and palpi dark brownish black. Antennæ brownish black. Front, vertex and occiput brown.

Thorax: mesonotum, præscutum with a thick brownish pollen, becoming grayish on the sides of the sclerite; a dark brown median stripe beginning near the anterior end of the sclerite, becoming narrower and finally obsolete before the suture; scutum, scutellum and postnotum dark brown. Pleuræ dark brown, with a sparse gray bloom on the middle of the thorax. Halteres dark brown; remainder of femora, tibiæ and tarsi dark brown. Wings somewhat suffused with darker; a small oval brown stigma. Venation: (See fig. o.)  $Sc$  short, ending far before the origin of  $Rs$ ,  $Sc_2$  not evident.  $Rs$  rather short, about one and one-half times the length of the deflection of  $R_{4+5}$ ; cross-vein  $m$  present in the type, absent in the paratype.

Abdomen dark brown.

Holotype.—♀. Aguna, Guatemala, Cent. Am. (Dr. G. Eisen.)

Paratype.—♀. Same as the type.

Types in U. S. Nat. Mus. coll. (No. 15,139.)

*Furcomyia knabi* sp. n.

Like *liberta* O. S., but ventral lobe of ♂ hypopygium produced entrad in a long slender arm.

♂.—Length, 6.5–7 mm.; wing, 8.8–9.8 mm.

♀.—Length, 7 mm.; wing, 9 mm.

Head: rostrum and palpi dark brownish black; antennæ black. Front, vertex and occiput clear gray.

Thorax: dorsum of the mesonotal præscutum suffused with brown, general colour brownish gray, much browner than the clear gray of the head; stripes on thoracic dorsum ill-defined; scutum dull gray, the scutellum very light gray; postnotum gray. Pleuræ grayish. Halteres yellow, knob brown. Legs: coxæ and trochanters brown; femora, tibiæ and tarsi dark brown. Wings almost as in *liberta* O. S., not pallid at base; a faint stigma at the tip of  $R_1$ . Venation: (See fig. m.)

Abdomen gray. Hypopygium: (See fig. w.) Dorsal aspect, 9th sternite very convex, ending in a small knob deeply bifid; pleuræ long, cylindrical, bearing two apical lobes; the dorsal lobe slender, chitinized, ending in an acute point; ventral lobe yellow; produced entrad

into a long arm chitinized, its apex blunt but slightly notched. Ventral aspect, 9th tergite almost straight on caudal margin; pleuræ short, the inner caudal angle produced into a long appendage, which is tufted with yellow hairs at its tip; guard of the penis long, enlarged basally, projecting slightly beyond the apices of the pleural appendage; ventrad of the pleural arm is a slender acicular appendage.

Holotype.—♂. Totonicipan, Guatemala, 1902. (Dr. G. Eisen.)

Allotype.—♀. Antigua, Guatemala. (Dr. G. Eisen.)

Paratypes.—♂♂. Totonicipan, Guatemala. (Dr. G. Eisen.)

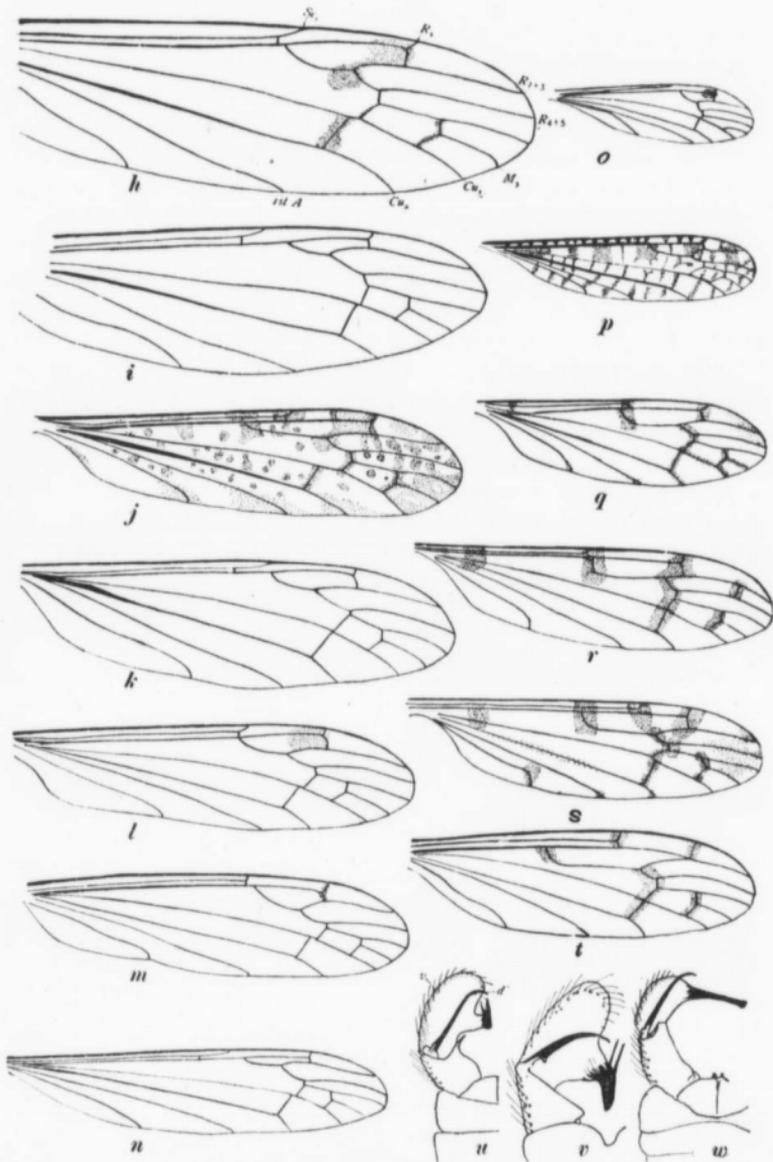
Types in U. S. Nat. Mus. coll. (No. 15,135). One paratype in author's collection.

Like *liberta* O. S. (Proc. Acad. Nat. Sci. Phil., 1859, p. 209; Monograph Dipt. N. Am., Vol. 4, p. 69), of the Eastern U. S., but larger, the mesothoracic præscutum browner and the stripes indistinct. In *liberta* the ♂ genitalia (fig. u) consists of short pleuræ, the swollen ventral lobes produced entad in a blunt knob, which bears two conspicuous caudad-projecting spines at its tip, the ventral one very stout, spine-like, the dorsal one more slender. In *knabi* the pleuræ are longer, the lobes short, the ventral one produced into a long arm, which is slightly notched apically.

#### EXPLANATION OF PLATE XI.

Fig. h.	Wing of	<i>Furcomyia andicola</i> ,	sp. n.
" i.	"	<i>F.</i>	<i>insignifica</i> , sp. n.
" j.	"	<i>F.</i>	<i>gloriosa</i> , sp. n.
" k.	"	<i>F.</i>	<i>argentina</i> , sp. n.
" l.	"	<i>F.</i>	<i>liberoides</i> , sp. n.
" m.	"	<i>F.</i>	<i>knabi</i> , sp. n.
" n.	"	<i>F.</i>	<i>simillima</i> , sp. n.
" o.	"	<i>F.</i>	<i>omissa</i> , sp. n.
" p.	"	<i>F.</i>	<i>reticulata</i> , sp. n.
" q.	"	<i>F.</i>	<i>osterhouti</i> , sp. n.
" r.	"	<i>F.</i>	<i>translucida</i> , sp. n.
" s.	"	<i>F.</i>	<i>eiseni</i> , sp. n.
" t.	"	? <i>F.</i>	<i>fumosa</i> , sp. n.
" u.	Hypopygium of <i>F. liberta</i> Osten Sacken.		
	v = ventral apical appendage.		
	d = dorsal apical appendage.		
" v.	Hypopygium of <i>F. liberoides</i> , sp. n.		
" w.	" <i>F. knabi</i> , sp. n.		

(To be continued.)



FURCOMYIA (TIPULIDAE, DIPT.).

## THE INTERNATIONAL CONGRESS OF ENTOMOLOGY.

The Second International Congress of Entomology was held at Oxford (England), from August 5th to 15th, the first Congress having been held at Brussels in 1910. It was attended by representative entomologists from Australia, Belgium, Canada, Borneo, British East Africa, Chili, Egypt, France, Germany, Holland, Hungary, Luxenbourg, Sandwich Islands, Spain, Sweden, Switzerland, Turkey and the United States, besides a large number from Great Britain and Ireland.

As representative of the Canadian Government and a delegate from the Entomological Society of Ontario, I sailed from Quebec on July 26th, but an unfortunate collision at sea necessitated my return and re-embarkation from New York, and on this account I missed the proceedings of the first day, during which the President, Prof. E. B. Poulton, F.R.S., delivered his presidential address.

In welcoming the entomologists of all nations, the President alluded to the suitability of Oxford as the meeting place of such a gathering, and referred to the celebrated meeting of the British Association in 1860 in the same place, when Huxley made his celebrated and crushing retort to Wilberforce's attempt to throw ridicule on the evolutionary doctrines recently set forth by Darwin and valiantly championed by Huxley. Prof. Poulton traced the history of the Hope Department of Entomology at Oxford, of which he has charge, and referred to the great work of Prof. Westwood, his predecessor and former teacher. He described a splendid exhibit of the polymorphic African *Papilio dardanus*. Tracing its geographical variations and illustrating the gradual development of mimicry by the female, the polymorphism of the same sex and the proportions of the different mimetic forms hatching out from the eggs of a single female.

The meetings of the Congress were general and sectional. At the various sectional meetings, which were usually held at the same time, economic and medical entomology, evolution and bionomics, mimicry and distribution, systematic entomology and nomenclature and morphology were discussed. It was naturally impossible for one to attend all the sections or to hear all the papers which one would have wished to hear. On this account, therefore, I shall refer only to certain of the papers which I was able to hear. In any case, space would forbid the writing of a more lengthy account, which will be given in the official reports of the Congress.

Mr. G. T. Bethune-Baker and Rev. G. Wheeler brought forward and discussed a proposal from the Entomological Society of London for the formation of the International and National Committees to deal with the

vexed and complicated question of nomenclature. The matter was wisely referred to the Executive Committee of the Congress for consideration and report. As a result of the Committee's report, the Congress decided upon the formation of an International Committee on nomenclature and of National Committees to be elected by the entomological societies. It was also resolved to request better representation for entomology on the International Committee on Zoological Nomenclature. In reply to a question as to what would be the result of a disagreement of the part of the newly-established International Committee on Entomological Nomenclature with the International Committee on Zoological Nomenclature, I was pleased to receive from Dr. Jordan, the General Secretary, the assurance that the finding of the Entomological Committee would prevail and would be accepted.

In the case of such a meeting, presided over by Prof. Poulton, and held in the Hope Department, which might well be called the home of the study of mimicry, it was natural that in the section on evolution and bionomics there should be presented some most interesting and valuable papers on mimetic resemblances, their evolution and distribution. Prof. Poulton described the researches of Mr. C. A. Wiggins and Dr. C. H. Carpenter on the forest inhabiting *Pseudacraea* of Uganda. The polymorphic character of the mimetic species has led to the creation of a number of species. Breeding experiments are throwing considerable light as to the relationships of the different forms. On the same subject Prof. Punnett read a very suggestive paper by Mr. J. C. F. Fryer, who is attempting to work out the polymorphism of *Papilio polytes* on Mendelian lines. Dr. R. C. L. Perkins discussed the colour groups of the Hawaiian wasps, in which the influence of a well-protected intruder upon the superficial aspect of the members of a native fauna is shown.

In the morphological section, Dr. F. A. Dixey read a paper on "The scent organs in the Lepidoptera." The specialized scales which serve to distribute scent in many species may be either generally scattered over the wing surface or collected in patches. In the latter case there is a special supply of air tubes to the sockets of the scales. Prof. G. H. Carpenter described the presence of maxillulae, small-paired appendages connected with the hypopharynx in certain beetle larvæ. Papers by Dr. G. Horvath (Budapest), Padre L. Navas (Barcelona), and Prof. J. Van Bemmelen (Gröningen), dealt with the morphology and phylogeny of insect wings. Mr. L. Doncaster (Cambridge), gave an account of his investigations on the question of sex-limited inheritance of characters in insects.

Papers on the geographical distribution of insects were read by Dr. Anton Handlirsch (Vienna), who ranged over the whole field of fossil insects, and Dr. P. Speiser (Lapes), Baron von Rosen (München), discussed the forest Termites, while Prof. Calvert gave an exceedingly interesting review of the advance which has been made in the knowledge of the dragon-flies since 1895.

Among the papers on insect bionomics which were read, three may be specially mentioned, on account of their exceptional interest. Dr. W. M. Wheeler (Harvard), gave an account of his recent investigations in Central America in ten Acacia-inhabiting ants. His results do not confirm the popular idea as to the adaptation of the acacias for the purpose of encouraging ants with a view to protecting themselves against the leaf-cutting ants. The ants merely frequent the convenient hollow places in the acacias because it suits their convenience so to do. Dr. A. Seitz (Darmstadt), described the results of an interesting experiment which he devised to test the sense of sight of insects, in this case butterflies. The character of this sense may be judged from the fact that the male butterflies of the species observed were found to be so short-sighted that they attempted to copulate with paper-coloured replicas of the females mounted on pins. A masterly and extremely suggestive paper on the Mallophaga was read by Prof. Vernon L. Kellogg. It was demonstrated that the association between these parasitic insects and their avian hosts was of a most remarkable character, tending to show that the parasites had become associated with their present hosts before the latter had become divided into separate species. They showed to an extraordinary degree the effect of isolation brought about by specific association.

Before the sections for economic and medical entomology many valuable and important papers were read. Sir Daniel Morris read a paper by Mr. W. A. Ballou (Government Entomologist for the West Indies), on the more important insects of the West Indies and the methods adopted for their control. Prof. J. Jablonowski (Budapest), contributed two papers, one of which on the methods of fighting the locust, *Stauronotus maroccanus*, in Hungary was of unusual interest and importance from the Canadian point of view. Mr. A. G. L. Rogers (Board of Agriculture and Fisheries, England), contributed a paper on the necessary investigation with relation to insect pests preliminary to legislation. While the ideas set forth by the author were in the main sound, he made many assertions which were not borne out by facts. This was shown in the subsequent discussion, which proved so interesting that it was postponed until the following day, when a resolution was passed, and subsequently submitted

to and passed unanimously by the Congress, supporting the proposed formation of an International Commission by the International Institute of Agriculture at Rome to deal with the problems connected with the spread of insect pests. Prof. F. V. Theobald gave an account of his investigations in the Aphid genus *Macrosiphum*, a most valuable piece of work both to the systematist and to the economic worker. In the medical section, Prof. S. A. Forbes (Illinois), read a paper on *Simulium* and Pellagra in Illinois. The results of his enquiry do not, so far, lend support to the theory that this disease is transmitted by *Simulium* flies. A paper on the methods of combating *Musca domestica* led to a discussion on the subject, but no new facts were brought forward.

The social side of the Congress was not the least enjoyable feature of the meeting nor the least important. In the garden of Wadham College a private café was installed, where luncheon, tea and light refreshments were served. Here delegates from all lands were able to meet. The members of the Congress were entertained most hospitably at Nunham by the Rt. Hon. L. V. Harcourt, M. P., Secretary of State for the Colonies, and by the President and Fellows of St. John's College at Bagleywood, on August 7th. A banquet was held in the hall of Wadham College on August 8th, at which many but short felicitous speeches were made. On August 15th the members made a visit to Tring Park, where they were entertained by the Hon. Walter Rothschild and shown over his celebrated zoological museum and entomological collections.

The next Congress will be held in Vienna, in 1915, under the presidency of Dr. Anton Handlirsch, who will undoubtedly prove a most genial host.

Mr. Henry H. Lyman, of Montreal, also represented the Entomological Society of Ontario. Dr. E. M. Walker was elected an additional member of the Permanent Committee of the Congress.

C. GORDON HEWITT.

Dr. R. Matheson has been appointed Provincial Entomologist for Nova Scotia. The recent appointment of Mr. L. Caesar as Provincial Entomologist for Ontario and the appointment of Mr. W. H. Britton as Plant Pathologist and Entomologist for British Columbia are pleasing evidences of the fact that the Provincial Governments are realising the importance of applied entomology.

Dr. Matheson is a native of Nova Scotia and after studying at the

Provincial Agricultural College at Truro, N. S., he graduated at Cornell University, Ithaca, N. Y. Later he was appointed State Entomologist and Professor of Entomology at the Agricultural College for South Dakota. Two years ago he returned to Cornell University where he assisted on the staff of the entomological department, taking his doctor's degree last year. Dr. Matheson's training makes him well qualified for the position he now holds, and with the recent introduction of the San José scale, the presence of the Brown-tail moth and the occurrence of several other serious insect pests in Nova Scotia, he will find problems of importance and interest awaiting him.

C. G. H.

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### BOOK NOTICE

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THE HUMBLE-BEE.—Its life-history and how to domesticate it, with descriptions of all the British species of *Bombus* and *Psithyrus*. By F. W. L. Sladen. 13-283 pp., 34 figs., 5 coloured plates (Macmillan). \$2.50.

"Everybody knows the burly, good-natured bumble-bee," the author states in his opening sentence, and while this is true, the author has shown, in giving us the results up to date of what has been a life-study, how little even the entomologist knows of these people of the hedgerows, whose homes he no doubt laid waste when a boy.

Roughly speaking, the book can be divided into three parts. In the first part the life-histories and habits of *Bombus* and of the parasitic usurper *Psithyrus* are described in full and in a fascinating manner, a manner which makes the general reader feel the intense interest of the real naturalist. We see the queen in her solitude anxiously choosing the site of the future nest and brooding over her eggs and young; then the gradual development of the little community. Some of the author's descriptions are the best we have read in entomological literature; one of these is the description of the death of the queen: "In the case of *B. pratorum*, and probably of the other species whose colonies end their existence in the height of summer, the aged queen often spends the evening of her life very pleasantly with her little band of worn-out workers. They sit together on two or three cells on the top of the ruined edifice, and make no attempt to rear any more brood. The exhausting work of bearing done, the queen's body shrinks to its original size, and she becomes quite active and youthful-looking again. This well earned rest lasts for about a week, and death, when at last it comes, brings with it no discomfort. One night, a little cooler than usual, finding her food supply exhausted, the queen grows torpid, as she has done many a time before in

the early part of her career ; but on this occasion, her life-work finished, there is no awakening."

The interesting and important discoveries which the author made as to the parasitic nature of the *Psithyrus* form a valuable portion of the first part of the work. We are told how the *Psithyrus* queen, protected by her coat of mail, impervious to the attacks of the *Bombus* queen, enters the home of the latter, and, after treacherously killing her, makes slaves of the workers, as she herself neither produces workers nor is provided with the pollen-collecting baskets in her hind legs.

The second part of the book describes the author's experiments in domesticating the *Bombi*, in which many types of domiciles were used. This section will prove of great value to future workers on the same lines. We should point out, in passing, that there is undoubtedly an important field of investigation in the encouragement of the *Bombi*. The economic significance of the presence of these insects where clovers are grown is now more generally appreciated, but we are not aware of any efforts having been made for the encouragement of these fertilizing agents. It is proposed to carry out in Canada investigations of the nature indicated.

In the third section of the book all the British species of *Bombus* and *Psithyrus* are described. Not only is a clear description of the queen, worker and male of each species given, and a brief description of their habits as observed by the author, but coloured illustrations render the identification of the species possible to anyone. The coloured figures, and there are five plates of them, are photographed direct from the specimens, and are undoubtedly the finest specimens of this kind of work which we have seen. The work is further enriched by the author's own drawings and photographs. The author has demonstrated, we believe for the first time, the importance of the structure of the male genitalia in separating the species and groups of species. The great variations in colour render such a method of separation of greater importance and significance. Illustrations are given of the male genitalia of the British species.

Although the author has confined himself to specific descriptions of the British forms, the book is none the less valuable to entomologists on this side of the Atlantic. From a monographic standpoint alone it is a work which should find a place on the bookshelf of every entomologist whose desires are not confined to the killing bottle and cabinet, but sit, like the fairies, astride the velvet-backed bumble bee and sail along the hedgerow, over field and forest and into every nook where insect creeps.

G. GORDON HEWITT.

Mailed November 8th, 1812.