NOTES ON THE CLASSIFICATION AND NOMENCLATURE OF THE HEMIPTEROUS SUPERFAMILY MIROIDEA.

BY G. W. KIRKALDY, HONOLULU, H. I.

Since the final impression of my "List of the genera of the Pagiopodous Hemiptera Heteroptera," etc. (a), I have received from my friend, Dr. O. M. Reuter, a very valuable summary of his most recent thoughts on the Classification of the Miridæ (b).

Dr. Reuter's polemic has been evoked by the Hemipterous work of Mr. Distant, particularly that dealing with the Miridæ (or "Capsidæ") in the Biologia Centrali-Americana, Heteroptera, Vol. I, and the Fauna of British India, Rhynchota, Vol. II. In the latter Mr. Distant avers that Reuter's classification of the Miridæ "is more reflective of personal opinion, and contrived for the purposes of entomological arrangement, than exhibiting an evolutionary or philosophical conception" (pp. 412–3), and thereupon divides the Miridæ into two subfamilies, characterized by the presence or absence of "a longitudinal incision or sulcation on the upper surface" of the head (!).

Reuter declares that this emphatic judgment is as unjustified as it is untrue, and that it is, at least, unseemly for an author whose studies on Hemipterous systematics are so superficial as are those of Mr. Distant, to pass so judicial a sentence.

The learned Finlander proceeds to refute Mr. Distant in great detail, first tracing the evolution of our knowledge of the classification, from Fieber, in 1858, onwards; he next discusses, at considerable length, various salient points in the characteristic structure of the family, and presents two new synopses, and a genealogical tree, of the divisions. This "Classification" is without doubt one of the most important of the Heteropterous memoirs that has appeared for a long time, and represents the almost mature fruits of Dr. Reuter's many years of assiduous devotion to his favourite family. It is impossible to summarize here the fifty-eight pages, further than to reproduce, in English, the analytical table of the accepted divisions; the form of the table has been altered, while preserving its matter. The tribe Lygæoscytini (c) and the genus

(a) Tr. Amer. Ent. Soc., XXXII, 117–56 (1906).

(b) "Hemipterologische Spekulationen, I, Die Klassifikation der Capsiden," Festschr. für Palmén, No. 1, pp. 1–58, and a genealogical Table. [Dated 1905, at Helsingfors, but probably not issued till 1906.]

(c) I prefer the ending "*ini*" to "*aria*," as more in line with general nomenclature.

Oligobiella are not yet sufficiently studied. I have not at the moment any examples of *Sulamita* before me, and therefore cannot add to Reuter's remarks on the Sulamitini.

1. Third segment of tarsi linear (very rarely—in *Hypselœcini* slightly thickened towards the apex). Apical margin of pronotum neither hood-like nor cystiformly elevated ..... 2.

1a. Third segment of tarsi thickened towards the apex, or apical margin of pronotum hood-like or cystiformly widened. First segment of tarsi deeply sulcate. Tibiæ always unarmed. Wing cell without hook. Prosternal-xyphus margined ..... 14.

2. Prosternal-xyphus swollen, rarely with two impressions *(Boopidocorini)*. Wing-cell usually with a hook. Pronotum without apical constriction. Lorœ narrow, sharply separated above and below ..... 3.

2a. Prosternal-xyphus margined (d) ..... 6.

3. Arolia fused with the claws, sometimes very small or absent ..... 4.

3a. Arolia free, inwardly arched. Genæ high. Wing-cell with hook ..... 4, *Hypselœcini.*

3b. Arolia wanting or very delicate. Wing-cell with or without hook. Apical margin of pronotum with an impressed, more or less wide (never swollen and smooth) margin .. 5, *Camptotylini* (Exæretaria).

4. Wing-cell with hook ..... 5.

4a. Wing cell without hook ....3, *Cremnorrhinini.*

5. Pronotum not, or very finely, punctured ..... 1, *Chlamydatini* (Plagiognatharia).

5a. Pronotum coarsely punctured. Tarsi very long. Eyes very large. Vertical margin keeled ..... 2, *Boopidocorini.*

6. Arolia fused with the claws, or at least approximate to these, sometimes rudimentary. Wing-cell with hook. Lorœ narrow, above and below sharply separated. Pronotum without apical constriction ..... 6, *Xenocorini* (Oncotylaria) and *Nasocorini.*

6a. Arolia free, converging towards the apex or parallel, sometimes absent (rarely in some *Macrolophini* fused with the claws) ...7.

6b. Arolia always present, free, diverging towards the apex, and slightly widened ..... 12.

(d). Only in the aberrant *Stethoconus*, Flor. *(Campyloneurini)*, and *Histriocoris*, Reuter *(Capsini)*, strongly convex.

7. Arolia free, converging towards the apex. Wing-cell without a hook. Pronotum without apical constriction. Genæ very rarely high. Loræ sometimes separated also beneath. Eyes inwardly mostly emarginate. Tibiæ slender, typically without punctures ..... 7, *Heterotomini* (Cyllocoraria).

7a. Arolia free, converging towards the apex or wanting. Wing-cell very rarely without a hook. Pronotum with apical constriction (which is sometimes hidden under the posterior margin of the posteriorly-produced hind margin of the vertex). Loræ narrow, sharply separated above and beneath ..... 8, *Pilophorini.*

7b. Arolia very delicate, or absent (sometimes clearer in some *Macrolophini*, but fused with the short claws). [Wing cell without hook. Pronotum with apical constriction (e)] ..... 8.

7c. Arolia free, converging towards the apex, or parallel. Wing-cell very rarely with hook. Pronotum without apical constriction. Vertex wide. Genæ high. Rostrum strong ..... 11.

8. Head elongate, feebly declivous. Loræ sharply separated above and beneath, narrow. Tarsi very slender. Sides of pronotum acute, at least posteriorly ..... 9, *Fulviini.*

8a. Head vertical ..... 9.

9. Head not strongly elongate ventrally. Clypeus not humpily swollen in the middle ..... 10.

9a. Head ventrally strongly elongate. Clypeus humpily swollen in the middle. Genæ very high. Neck very short. Tarsi slender, first segment long ..... 14, *Cylopini.*

10. Arolia very delicate, or fused with the short claws. Loræ sharply separated above and below, narrow ..... 10, *Macrolophini* (Dicypharia).

10a. Arolia absent. Loræ only separated above, arched .. 11, *Garganini.*

11. Body generally robust, never constricted in the middle. Loræ generally separated above and below, but wide. Tibiæ often robust. Membrane with two cells ... 12, *Halticini* (Laboparia).

11a. Body generally narrow, constricted in the middle. Loræ separated only above. Tegmina wings usually very rudimentary. Membrane of macropterous form without cells, with irregular nerves ..... 13, *Myrmecophyini.*

(e) Added in MS. by Dr. Reuter.

12. Wing-cell with or without a hook. Pronotum with thick apical constriction. Callosities limiting the constriction posteriorly, as long as the latter. Head vertical, genæ high ....15, *Resthenniini.*

12a. Wing-cell always without a hook. Pronotum without an apical constriction or with a "spurious stricture." Sides acute, at least anteriorly. First segment of antennæ and tarsi long..16, *Mirini.*

12b. Wing-cell always without a hook. Pronotum with a true apical constriction (sometimes not clear in brachypterous forms), sides rarely acute anteriorly..... 13.

13. Body oval or parallel, very rarely narrow and constricted medially. Labrum narrow. Genæ rarely high. Loræ separated only above.....17, *Capsini.*

13a. Body elongate, constricted medianly. Labrum very wide, crescentic. Genæ very high. Neck very long. Loræ wide, but also separated from below ..... 18, *Myrmecorini.*

14. Third segment of tarsi linear or very little thickened. Arolia very delicate, free. Loræ above and below sharply separated, narrow. Apical margin of pronotum hood-shaped or strongly swollen .....19, *Ambraciini* (Clivinemaria).

14a. Third segment of tarsi thickened towards the apex. Arolia large, very closely approximated to the claws, often fused with these. Loræ separated only above. Membrane mostly unicellular.....20, *Bryocorini.*

II.

The following additions and emendations to my "List" are necessary. I regret that Reuter's "Classification" was not published earlier, but although some shifting of the group constituents of my list will take place, the references to type fixations will remain practically unchanged, so that its prime purpose is fulfilled. The chief disturbances are in tribe 13. in which Reuter leaves only *Cylapus* and *Vannius*, removing almost all the rest to the Bryocorini.

P. 119, gen. 1, for "*Dolichomerius*" read "*—merus.*"

P. 120, gen. 15, is dated 1871.

P. 121; gen. 29, add "(*Odontobrachis*, Reuter, 1884, A. S. S. Fenn., xiv, 203").

P. 121, gen. 31, after "Mulsant" add "and Rey."

P. 122, for "Plagiogastharia" read "Plagiognatharia."

P. 123, gen. 18, the correct citation is "Reuter, 1875, Bih. Vet. Ak. Handl., iii, 57, type *onustus* (Fieber), Reut., 1878, A. S. S. Fenn., xiii, pt. 1, Pl. 4, f. 3, and Pl. 1, f. 2."

P. 124, gen. 32, make this a synonym of *Reuteroscopus*, Kirkaldy, 1905, Wien. Ent. Zeit., xxiv, 268.

P. 124, gen. 36 belongs to the Capsini.

P. 124, add "44" before "*Phylus*."

P. 125, for "Oncotylini" read "Xenocorini."

P. 126, gen. 16, read "*Malthacosoma*."

P. 127, gen. 11, add as synonym, No. 51, on p. 138.

P. 128, gen. 24, for "Bull. Soc. Nat., Moscou (sep. ?)" read "Mel. Ent., ii p."

P. 128, gen. 28, add as synonym "*Schistonotellus*, Reuter, 1905, Oefv. Vet. Förh., xlvii, No. 20, p. 32" (*dromedarius*, f. 15a).

P. 128, gen. 32, remove to tribe 6 Cremnorrhinini (p. 129).

P. 129, for "Campyloneurini" read "Macrolophini," and for "Cremnorrhini" read "Cremnorrhinini."

P. 130, add genera 17, 18 and 20, on pp. 136–7, to the Halticini.

P. 130, note 5, line 4, for "260" read 206." N. B.—Pp. 1–190, or the second half, of Reuter's "Rev. Crit. Caps.," appear to be a reprint of the Hem. Gymn. Scand," without the Plate.

P. 131, gen. 17, Reuter removes this to the Bryocorini.

P. 132, line 14, for "*oschanini*" read "*oschannini*."

P. 132, gen. 6, for "?" read 10," and delete "(separate ?)."

P. 133, gen. 11, Reuter considers that this is probably a Heterotomine.

P. 133, gen. 26 and 28, remove to Capsini.

P. 133, gen 29, for *albofasciatus* read *unifasciatus*.

P. 134, tribe Cylapini; Reuter removes 3 to the Capsini, retains 1 and 4 in the Cylapini, and most (or all) of the rest to the Bryocorini. I regret I cannot altogether follow him in that.

P. 134, gen. 7, add as a synonym, gen. 24 (p. 146).

P. 134, gen. 18. The following is appended to render valid the genus *Sahlbergella:* "Closely allied to *Deimatostages*, Kuhlgatz, but the pronotum and scutellum are not tuberculate, the head is more declivous, and the form of the pronotum and scutellum in profile is different."

P. 134, gen. 19, for *Odoniella*, "Haglund," read "Reuter, 1905, Oefv. Finsk. Förh., xlvii, No. 10, p. 2, type *Reuteri* (Haglund), Reuter.

P. 136, gen. 10, add ("*Dyoncus*, Fieber, 1860, Eur. Hem., 67").

P. 136, gen. 13, read "*Resthenia*, Spin., etc., subgenus 1, *Platytylus*, Fieber, etc., = *Callichila*, Reuter, etc." Reuter forms a division (Resthenini) from this and *Mimoncopeltus* (= *Lygdus*).

P. 136, gen. 5, to *Lopistus*, add as synonym, †"*Capsodes*, Dahlbom, 1851. K. Vet. Ak. Handl. (for 1850), 214 (not descr.)"

Pp. 136–7, remove gen. 17, 18 and 20 to Halticini.

P. 137, gen. 30. Reuter thinks this may belong to the Pilophorini.

P. 137, gen. 31. Reuter forms a division (Garganini) from this.

P. 138, gen. 44. According to Reuter (1905) *Pantiliodes* (p. 136, gen. 6) is a synonym of *Creontiades*.

P. 139, add as 68a *Liozoridia*, Reuter, 1903, Oefv. Finsk. Vet. Förh., xlv., No. 16, p. 13 (= *Liocoridea*, Reuter, 1906, Yezh. Zool. Mus. Imp. Nauk., Peterb., X, 51), type *Mutabilis*, Reuter, Pl. 2, f. 4, = *Gismunda*, Distant, p. 140 (gen. 91).

P. 140, gen. 80, read "*Charagochilus*."

P. 141, gen. 101, remove to Macrolophini (p. 129).

P. 141, gen. 98, for "n.n." read "1906 (June), T. N. Zealand Inst., xxxviii, 62." [The Tr. Am. Ent. Soc., xxxii, p. 141, is dated "May," but was not published till at least August.]

P. 142, gen 113. read "*Thyrillus*."

P. 142, gen. 119 and 120, *Callicratides*, Distant, is a synonym of *Hyalopeplus*, Stal.

P. 143, gen. 131, add "fig. 2."

P. 143, gen. 139, read "Costa, 1841, A. S. E., France, X, 294, type *italicum*. Costa, 1855 (?), Atti Nap., 251, Pl. 2, f. 1 = *Gryllocoris*," etc.

P. 145, add gen. 24, *Saturniomiris*, Kirkaldy, 1992, T. E. S., London, 268, type *tristis* (Walker), Kirk.

P. 145, gen. 5. Reuter places this in the Pilophorini.

P. 145, the date of "*Heidemannia*" is 1891.

P. 146. Reuter places *Thaumastomiris* and *Perissobasis* in the Bryocorini

P. 146. *Ambracius* is placed in the Clivinemini (p. 135) by Reuter, who incorrectly spells it *ambrocius* and *ambrosius*. *Opellus* (No. 7) belongs there also. Genus 8 should be deleted. The date of Stal's genera in K. Sv. Ak. Handl., 2, pt. 7, is 1860.

P. 146, gen. 15, the preoccupied name *Lygdus* should be superseded by *Mimoncopeltus*, nov.

P. 146, gen. 16 and 17 are placed by Reuter in the Bryocorini, 18 and 19 in the Macrolophini.

P. 147, add "Family 3a, Polyctenidæ.

"Genus 1. *Polyctenes*, Giglioli, 1854, Q. Journ. Micr. Sci., IV, 25, type *molossus*, Gigl., Pl. Ib., figs. 13–14.

"Genus 2. *Euroctenes*, gen. nov., type *lyræ* (C. O. Waterh., 1879, T. E. S, London, Pl. IX, figs 1–2).

"Genus 3. *Eoctenes*, gen. nov., type *spasmæ* (C. O. W., op. c., figs. 3–4).

"Genus 4. *Hesperoctenes*, gen. nov., type *fumarius* (Westw., 1874, Thesaurus Ent. Oxon., Pl. 38)."

The characters of these four genera have been indicated by various authors, but only one, *Polyctenes*, has been named:

1. Palæogæic forms; posterior legs comparatively short and stout, about half the length of the bug; the claws unequal, one nearly simple, the other large and bent, its basal tubercle nearly as long as the simple claw ....2.

1a. Neogæic forms; posterior legs as long as the bug; claws nearly equal, with a small tooth at the base .....1, *Hesperoctenes*, mihi.

2. Antennæ long, the third segment almost (or more than) as long as the fourth .....3.

2a. Antennæ shorter, third and fourth segments about equally long..... .....4, *Eoctenes*, mihi.

3. Head medianly wider than long. Pronotum transverse..... .....3, *Polyctenes*, Gigl.

3a. Head medianly longer than wider. Pronotum elongate .... 2, *Euroctenes*, mihi.

P. 147, delete entry (on p. 147 only) of Family 5, and read: "Family 5, Dipsocoridæ (Monogr., as *Ceratocombidæ*, Reuter, 1891, Act. Soc. Sci., Fenn., XIX, No. 6, pp. 1–28, Pl.).

Subfamily 1, Dipsocorinæ.

"Genus 1. *Lichenobia*, Bærensprung, 1857, Berlin Ent Zeit., I, 165 (= *Ceratocombus*, Fieber, 1860), Wien. Ent. Mon., IV, 267, type *muscorum*, Fall. (= *Coleoptrata*, Zett.), type *ferruginea*, Baer. (= *Coleoptrata*, Zett.), fig., Signoret, 1852, A. S. E., France (2) X. Pl. 16, f. 3, as *Astemma Mulsanti*."

N. B.—*Ceratocombus* was only named, not described, by Signoret.

P. 148, line 3, read "*Trichotonaunus*."

P. 148, date of footnote 20 is 1836.

P. 126, gen. 28, make this a synonym of *Lopus*, Hahn, 1833, Wanz. Ins., I, 143, Pl. 1, f. 4, type *Chrysanthemi*, Hahn (=*decolor*, Fall).

P. 146. add Tribe 27, Lygæoscytini.

Genus 1. *Lygæoscytus*, Reuter, 1893, E. M. M., xxix, 151, type *cimicoides*, Reuter, fig.

P. S.—I have just received the 3rd volume of Distant's "Fauna of British India, Rhynchota" (1906), wherein his doubtful Anthocorid genera are figured as follows:

Ostorodias, f. 1; *Arnulphus*, f. 2; *Amphiareus*, f. 3; *Lippomanus*, f. 4; *Sesellius*, f. 6. *Euspudæus*, Reuter, is also figured (f. 5), also the following Water-bugs: *Cheirochela feana* (16), *Gestroiella* (17), *Heleocoris strabus* (19), and *Ctenipocoris* (20). I find I omitted from my list the Naucorid *Thurselinus*, Distant, 1904, Entom., xxxvii, 259, type *Greeni* (figured F. B. I., f. 21).

QUEBEC BRANCH—ENTOMOLOGICAL SOCIETY OF ONTARIO.

The Ninth Annual Meeting of the Quebec Branch was held at the house of the President, Rev. Dr. Fyles, Levis, P. Q., on Oct. 13, 1906—twelve present.

Dr. Fyles described an excursion that he had made through the border townships which had been ravaged some years ago by the Larch Saw-fly, *Nematus Erichsonii*, Hart. He found that in all that section of the country there was not a first-growth tamarack left, and that most of those of a later growth were also destroyed; their places were now taken by a new growth of balsam, poplar, spruce and birch, varying with the nature of the soil. He also exhibited a fine nest of the wasp *Vespa arenaria*, Fab., which he had found in an open field, an inch or so from the ground, supported by some grass stems and that of an aster. It resembled a round stone or a large puff-ball, and contained a surprisingly large number of cells. A female emerged from one of the cells on Sept. 9.

Miss Freeman exhibited a number of beautiful and interesting specimens taken at Lorette, P. Q., and mentioned having found about a dozen butterflies, *Eugonia J-album*, in an unoccupied room, where they evidently intended to pass the winter.

Lt.-Colonel Lindsay gave an interesting account of a Caddis-fly, frequenting lakes and streams, which he found very abundant in August. It is preyed upon by both trout and insectivorous birds, so that between the crop of the bird and the maw of the fish—its Scylla and Charybdis—the unlucky insect finds it difficult to steer its course.

The following officers were elected for the coming year: President, Rev. Dr. Fyles; Vice-President, Mrs. Richard Turner; Secretary-Treasurer, Lt.-Colonel Crawford Lindsay; Council, Hon. Richard Turner, Mr. J. H. Simmons, Miss Bickell, Miss Freeman, and Miss Hedge.