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TINGIDAE: DESCRIPTIONS AND SYNONYMIC DATA (Hemiptera)

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This present paper contains the descriptions of new species, new synonymies and the transfer of several species of Tingidae to different genera. The measurements are such that 80 units equal one milli meter. The types have been deposited as stated beneath the descriptions.

CERATINODERMA FORNICATA Stal

Ceratinoderma fornicata Stal, Enum. Hem., 3:117. 1873.
Ceratinoderma fornicata Distant, Ann. Mus. S. Afr., 2(9):240, 1 fig. 1902.

The following notes are based on the type, female, Caffaria, South Africa, (antennae missing), in the Naturhistoriska Riksmuseum, Stockholm. This is the only known specimen of the species.

Head short, rather broad, black, unarmed. Rostrum fuscous, darker at apex, reaching to base of mesosternum; laminae high on mesosternum, lower and more widely separated on metasternum. Bucculae broad, areolate, closed in front. Orifice not visible. Legs short, with femora incrassate, dark fuscous. Pronotum black, coarsely punctate, almost reticoseous, truncate in front, triangularly produced behind, with median carina barely distinct, concave, with collar and hind process both gradually elevated; paranota represented by a slight carina. Elytra (jointly with hind pronotal process) considerably arched longitudinally, with outer sides very strongly deflexed and thus entirely covering sides of abdomen, without trace of boundary veins separating subcostal, discoidal and sutural areas, without costal area; hypocostal laminae moderately wide, mostly uniseriate, a little wider at base, there two areolae deep, the areolae small; elytra dark fuscous, the areolae rounded; pronotum, head and femora lightly coated with grayish blue pruinose.

The longitudinally concave pronotum, longitudinally arched elytra (sides very strongly deflexed), feebly unicarinate pronotum and indistinct orifice separate this genus from *Serenthia* Spinola. *Coleopteroides* Philippi has a tricarinate pronotum and less arched elytra; orifice is also indistinct. *Lullius* Distant is more closely related to *Serenthia*.

PLESIONEMA **ETEOSA** Drake, n. sp.

Broadly ovate, testaceous with head pale brown and eyes reddish brown. Body beneath reddish fuscous with median part of venter testaceous. Head longly produced in front of eyes, moderately convex above, armed with nine rather long erect spines—a pair of spines just behind the inner hind margin of each eye, a spine at the centre of the vertex between the eyes, a pair a little in front of the eyes, a median spine in front of the latter, a third pair scarcely in front of the second median spine, and third median or anterior spine in front of the third pair (hind or first pair of spines more widely separated from each other than other two pairs). Antenniferous tubercles long, slightly divergent with tips a little bent outwardly, slightly shorter than first antennal segment; first antennal segment short, stouter and almost twice as long as second, both testaceous, last two segments missing. Rostrum very long, testaceous with apex embrowned, extending on second segment of venter. Bucculae long, testaceous, with ends contiguous in front. Orifice not visible. Hypocostal laminae long, composed of one complete row of small areolae.

Pronotum short, reticaceous, flat, truncate behind, unicarinate; median carina moderately elevated, extending entire length of pronotum and collar, composed of one row of small areolae; collar long, raised anteriorly, areolate, about one half as long as the main part of pronotum; paranota wide, slightly reflexed, mostly five areolae deep, with outer margin slightly roundly narrowed anteriorly, with a large spine on each antero-lateral angle. Elytra very little longer than abdomen, broadly ovate, with clear areolae; costal area wide, slightly turned up, almost entirely quadriseriate, slightly wider anteriorly; subcostal area very wide, subvertical, largely eight areolae deep; discoidal area long, with outer boundary more raised and rounded, with a transversely raised vein just in front of middle, six areolae deep in widest part; clavus small, with outer boundary not very clearly defined.

TYPE (*male*), Cape Recife, South Africa, 1942, Drake Collection.

On account of the armature of the head (armed with nine spines), it seems advisable to place this species in the genus *Plesionema* Drake, although the pronotum is unicarinate and the boundary veins of discoidal and adventitious veins of both subcostal and discoidal areas are scarcely raised. In *P. humeralis* (Distant), the pronotum is tricarinate, the paranota very differently shaped and the adventitious veins of elytra strongly elevated, areolate and quite numerous.

PARACOPIUM GIGANTOS Drake, n. sp.

Very large, fuscous-black with collar, median carina in front, paranota and widest part of costal area (veinlets of five areolae, the cells clear) reddish fuscous. Legs short, with femora moderately incrassate, blackish with apical half to three-fourths of tibiae and entire tarsi (including claws) reddish fuscous. Rostrum long, brown, almost reaching to end of sulcus; laminae testaceous, uniseriate. Orifice furnished with a long narrow sulcus with sides elevated. Bucculae closed in front. Antennae moderately long, stout; segment III distinctly gradually enlarged apically; III very long, thick, evenly enlarged, only slightly bent, on the same axis as III, longer than III, measurements—I, 32; II, 21; III, 48; IV, 55. Head blackish, eyes black; anterior spines thick, somewhat conical, turned inwardly with tips touching, resting on the surface of the head; median spines represented by a raised tubercle; hind spines long, slender, appressed, brownish testaceous, reaching to middle of eyes. Body beneath dark fuscous, more blackish on sterna.

Pronotum moderately convex, reticulous; carinae about equally elevated, each composed of one row of small areolae, the lateral pair slightly convex within in front of disc; paranota narrow behind; slightly wider in front, uniseriate along humeri, with a few extra cells in wider part opposite calli; hood raised, areolate; hind projection very long, areolate. Elytra long, with sides subparallel; costal area narrow, the transparent areolae with brownish veinlets in widest part larger; subcostal area wide, with four rows of small areolae, discoidal area large, extending beyond the middle, narrowed at both ends, widest at middle, there seven or eight cells deep, the areolae slightly larger than in subcostal; sutural area with areolae a little larger.

LENGTH, 6.25 mm.; width, 1.90 mm.

TYPE (*female*), Perinel, Province of Analamasotra, Madagascar, in Drake Collection. PARATYPE; 1 specimen, labeled 'Madagascar' collected by Grandidier, in 1874, Paris Museum.

The large size, color and markings, and the long fourth antennal segment (longer than the third) separate this insect from other African species of *Paracopium* Distant. The shortly pilose antennae as well as the shape and attachment of the fourth segment places this species in *Paracopium* rather than *Copium*.

NEW COMBINATIONS: A study of the types (in Congo Belge Museum, Tevuren, Belgium) of *Copium antennatum* Schouteden (Rev. Zool. Afr., 11:5, 1923), *C. bequaerti* Schouteden (p. 5), *C. ghesquierei* Schouteden (p. 6-7) and *C. lupakense* Schouteden (p. 7) show that these species are typical members of the genus *Paracopium* and are here so transferred.

Catoplatus burgeoni Schouteden (*loc. cit.*, p. 8) also belongs to the genus *Paracopium*, and has nothing to do with the genus *Catoplatus* Spinola. It is somewhat atypical of *Paracopium*, but fits better here than in any other genus. The antennae are very long, slender, shortly pilose, measurements—I, 30; II, 17; III, 172; IV, 45. The elytra are broad; costal area wide, mostly biseriate, triseriate in widest part.

DICONOCORIS **DISTANTI** Drake, n. sp.

Elasmognathus greeni Distant (not Kirby), Fauna Brit. India, Rhynch., 2:142, fig. 105 (in part). 1902.

Head black, armed with five long spines; anterior spines black, upright, divergent laterally with inner sides concave; median spines upright, black; posterior pair appressed, black, sometimes brownish apically. Eyes black. Antennae long, very slender, pale testaceous with first (save narrow apex) and apical three-fourths of fourth segments black, measurements—I, 18; II, 12; III, 82. IV, 55. Bucculae broad, areolate, closed in front, black, sometimes with inferior and hind margins brownish. Rostrum brown, reaching to middle of metasternum; laminae high, uniseriate, black, often with inferior margin brownish. Orifice not visible.

Pronotum strongly convex, very coarsely punctate, areolate on hind projection, tricarinate; median carinae moderately elevated, uniseriate; lateral carinae concealed by large paranota, save on triangular projection, there short and parallel; under paranotum (right removed)—strongly archly elevated, divergent anteriorly, terminating some distance behind calli, composed of one row of very high areolae; hood brown, moderately high, not very wide; paranota enormously developed, very high, finger-like shaped, reflexed, with rounded base resting on pronotum, with outer edge not quite extending to median carina; projecting obliquely laterally upward (two divergent laterally), with crest rounded behind, with anterior side constricted at the middle so that the top protrudes, about twice as high as basal length. Elytra black or fuscous-black with costal area (save transverse band and apical part) pale testaceous, slightly concavely widened to median band, deeply constricted behind band; costal area wide, mostly triseriate with clear areolae (four cells deep and fuscous-black in median band, also in darkened apical part); subcostal area much narrower, biseriate, discoidal area large, extending beyond middle of elytra, with outer boundary vein slightly concave within, narrowed at both ends, widest near middle, there seven areolae deep; sutural area with areolae deeply clouded with black-fuscous, save three or four cells on apical margin. Hypocostal laminae uniseriate. Body beneath black.

LENGTH, 5.50-6.20 mm.; width, 1.00-1.20 mm.

TYPE (male) and ALLOTYPE (female), Peradeniya, Ceylon, 1911, taken by J. C. F. Fryer, British Museum. Paratypes: 6 specimens taken with type and 6 specimens, Henaratgoda, Ceylon, Nov. 11, 1902, Dr. Uzel.

This species was very finely but wrongly illustrated by Distant (*loc. cit.*, p. 142, fig. 105) as *E. greeni* Kirby. *E. distanti* (= *greeni* Distant, *nec.* Kirby) is wider, longer (black) first antennal segment, larger and taller finger-like paranotal processes of pronotum and a much wider, triseriate costal area of elytra. The true *E. greeni* Kirby is very closely related to *E. hewetti* (Distant).

CYSTEOCHILA **WECHINAI** Drake, new name

Cysteochila chianiana Drake, Proc. Biol. Soc. Wash., 67:5-6. 1954.

As the specific name *chianiana* was used by the writer in 1942

for a species of *Cysteochila* from China, the name *wechinai* is here proposed for species cited above from Philipines.

LEPTOPHARSA MILLERI Drake, n. sp.

Small, slender, oblong, pale testaceous with a few fuscous or black-fuscous markings as described in structural characters. Head fuscous, shining, with five, long, slender, pale testaceous spines; median spine erect, longer than front pair; hind pair longest, appressed; eyes large, fuscous. Bucculae pale testaceous, closed in front. Rostrum testaceous, dark at apex, barely reaching metasternum; laminae pale testaceous, meeting behind, not constricted on mesosternum, more widely separated on metasternum, uniseriate, the areolae moderately large. Orifice with a pale testaceous channel. Antennae long, slender, indistinctly setose; segments I and II moderately swollen, black-fuscous, shining; III very long, pale testaceous; IV dark fuscous, shortly pilose, measurements—I, 15; II, 9; III, 86, IV, 33.

Pronotum pale stramineous, moderately convex, punctate, tricarinate; collar testaceous, raised anteriorly; paranota moderately wide, pale testaceous, uniseriate, the areolae moderately large and clear; calli deeply impressed, blackish; carinae moderately elevated, each composed of one row of moderately large areolae, the median becoming slightly lower posteriorly; lateral carinae distinctly divergent anteriorly; hind process pale, areolate. Elytra narrow, with tips partly overlapping and jointly rounded behind; pale testaceous, with areolae of discoidal, vein between discoidal and sutural areas and veinlets in subcostal bordering darkened part of discoidal and some veinlets in sutural area infuscate; costal area moderately wide, uniseriate; subcostal area narrower, biseriate; discoidal area extending a little beyond middle of elytra, three cells deep in widest part at middle. Wings whitish, nearly as long as elytra. Body beneath stramineous.

LENGTH, 2.80 mm., width, 0.95 mm.

TYPE (*female*). Salisbury, South Rhodesia, Africa, Feb. 4, 1953, on "Polony tree," in Brit. Mus. Paratypes: 14 specimens, males and females, same locality as type, Jan., 1954.

This species is quite typical of the genus *Leptopharsa* Stal, and is much smaller than other African species described in the genus.

LEPTOPHARSA QUADRATA Drake, n. sp.

Small, oblong, brownish fuscous with costal area, paranota, legs and antennae (last segment brown) pale testaceous; areolae in paranota and costal area very clear. Pronotum, subcostal, discoidal and sutural areas sparsely clothed with very short golden pubescence. Head black, with some grayish pubescence; median and anterior spines rather short, stout, blunt, testaceous, turned downward; hind spines greatly reduced, brownish. Bucculae short, broad, areolate, closed in front. Antennae shortly pilose, with last segment subclavate, measurements—I, 7; II, 6; III, 37; IV, 17. Rostrum short, with apex between fore coxae; laminae widely separated and slightly divergent posteriorly on mesosternum, more widely separated and cordate on metasternum, with ends meeting behind. Orifice with a pale, raised sulcus. Hypocostal laminae narrow, composed of one row of tiny areolae.

Pronotum slightly convex, punctate, strongly narrowed anteriorly, tricarinate; lateral carinae long, extending anteriorly on calli, slightly convex and divergent in front of disc, all carinae without areolae; collar broad, areolate, raised anteriorly, without hood; paranota rather narrow, wider in front, uniseriate opposite humeri, much wider and biseriate opposite calli and collar. Elytra slowly narrowed posteriorly from middle, with apices jointly rounded behind; costal area moderately wide, thin, composed of one row of largely quadrate or rectangular cells (mostly a little wider than long); subcostal area composed of four rows of very small cells, about as wide as costal; discoidal area narrow, extending beyond middle of elytra, acutely angular at both ends, widest at middle, there four cells deep; sutural area with a little larger areolae.

LENGTH, 2.12 mm.; width, 0.90 mm.

TYPE (female) Durban, Natal, May 20, 1951, Drake Collection.

The large, clear, quadrate cells of the costal area separate this species at once from all described species in the genus.

GALEATUS SCROPHICUS Saunders

Galeatus scrophicus Saunders, Ent. Monthl. Mag., 13:103. 1876.

Galeatus semilucidus Jakovlef, Revue mens. d'Ent., 1:121. 1884.

Galeatus scrophicus Horvath, Ann. Mus. Nat. Hist. Hung., 4:52. 1906.

Cademilus retairius Distant, Ann. Soc. Belg., 53:114. 1910.

Cademilus retairius Distant, Fauna Brit. India, Rhynch., 5:107-108. 1910.

A study of the types and other specimens of *Galeatus scrophicus* Saunders and *G. retairius* Distant show that these two names apply to the same species, and the latter is here placed in synonymy (new synonymy). *G. scrophicus* is recorded in the literature from south-eastern Europe and northern Africa. Distant described *retairius* from India and lists the food plant as Chrysanthemums. Many specimens, taken on sunflowers, have been examined from Egyptian Sudan (Khartoum), northern Transvaal (Njelele river) and South-west Africa (Okhandja). Several specimens, Senegal (Bombey, April 27, 1943. Risbec) were collected on "saldades."

GENUS BAKO Schouteden

Bako Schouteden, Rev. Zool. Afr., 11:10. 1923.

Galeotingis Drake, Bol. Mus. Nat., Rio de Janeiro, no. 81, p. 1-2. 1947.

Through the kindness of Dr. H. Schouteden, Belgium Congo Museum, Bruxelles. I have been able to study the type of the genus Bako (*B. lebruni* Schout.) and find that the genus *Galeotingis* Drake is inseparable from it (new synonymy). *G. malayana* Drake and *G. usumburana* Drake are here transferred to the genus Bako. A comparison of specimens of *B. lebruni* and *usumbrana* may make it necessary to place the latter in synonymy.

XENOTINGIS LUZONANA Drake, n. sp.

Slender, testaceous with veinlets of large paranota more brownish, the areolae hyaline. Head brown, largely concealed (apex visible) from above by hood, unarmed. Antennae with first two segments short, brown, others wanting. Rostrum concealed by cardboard point. Legs slender, long, testaceous. Bucculae testaceous, closed in front. Orifice distinct. Hypocostal laminae rather narrow, uniseriate. Body beneath black, the thorax brown.

Pronotum concealed from dorsal aspect by the extremely large, semiglobose, reflexed, upright paranota which meet within above median carina, moderately convex, tricarinate; carinae thin, moderately elevated, with areolae not plainly visible; hood rather high, compressed laterally, covering basal part of head; paranota very large, longer than high (105:65), extending from near the front margin of collar posteriorly to end of hind pronotal process, with large areolae. Elytra much longer than abdomen, rather narrow, with apices overlapping and jointly rounded behind; costal area wide,

biseriate, with very large areolae, with outer row of areolae almost completely reflexed, with outer edge resting on elytral surface on boundary between discoidal and subcostal areas, the two surfaces almost in contact and at most only slightly separated; discoidal area almost reaching to middle of elytra, narrowed at both ends, two cells deep at middle; sutural area with fairly large areolae. Wings not visible.

LENGTH, 3.25 mm.; width, 1.00 mm.

TYPE (female), Mt. Makiling, Luzon, Philippines, C. F. Baker, Drake Collection.

This species is very much smaller than *X. horni* and other described species. It is about the same size and very similar in general appearance as the new species described below.

XENOTINGIS PAPUANA Drake, n. sp.

Small, slender, brownish testaceous with veinlets and areolate structures of pronotum dark fuscous. Body beneath dark fuscous with the thorax more brownish. Head fuscous; median and hind spines short, brown, appressed. Rostrum long, with tip near end of sulcus, dark brown: laminae testaceous, uniseriate. Orifice with large channel. Bucculae contiguous in front. Legs long, slender, testaceous. Hypocostal laminae narrow, uniseriate.

Pronotum concealed dorsally by very large, reflexed paranota (only anterior part of hood visible); hood very large, inflated, unusually long, covering basal part of head and then extending posteriorly to base of posterior process of pronotum, a little compressed laterally, twice as long as high; median carina short, sharply raised anteriorly; lateral carinae extremely high, almost as high and half as long as hood, clouded with dark fuscous, semicircular in outline, nearly twice as high as long (65:38), with upper margin quite evenly rounded, composed of one row of very high cells; paranota extending from near front margin of collar posterior to middle of hind pronotal process, much longer than high (102:64), with the basal row of cells rather small and then the second row on the sides extremely high. Elytra much longer than abdomen, rather narrow, with moderately large, clear areolae; costal area wide, triseriate, with outer row of cells large, quadrate and completely reflexed so

that the outer edge rests on the boundary between subcostal and discoidal areas, the two inner or non-reflexed rows smaller and together not wider than outer; subcostal area very narrow; sutural area large, with areolae moderately large and not very regularly arranged; discoidal area large, reaching a little beyond middle of elytra, acutely angulate at both ends, widest at middle, there five cells deep. Wings atrophied.

LENGTH, 3.35 mm.; width, 1.0 mm.

TYPE (male), Kokoda, Papua, elevation 1,200 feet, June, 1933, Miss L. E. Cheesman, British Museum.

The size and general appearance allies this species with *X. luzonana* n. sp. but it can be readily distinguished by the extremely long hood, extremely high and semicircular lateral carinae, infuscate areolate structures of the pronotum, larger discoidal area and tri-seriate costal area. These same characters as well as the much smaller size distinguish *papuana* from the larger species of the genus.