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NOTES ON SOUTH AMERICAN HEMIPTERA-HETEROPTERA.*

HERBERT OSBORN.

The following notes are based mainly upon collections made in Peru and Bolivia by William J. Gerhard during the years 1898-1899, and purchased by the writer from Mr. Weeks of Boston, the package having been entirely undisturbed, and a collection made at Bartica, British Guiana by Mr. H. S. Parrish during the spring of 1900. Collections by these parties are entered without further reference. Other material has been secured from various sources but recorded here so as to make the notes as complete as possible based upon the material in the author's collection. The collection made by Mr. Parrish in Guiana was made at the same time and in practically the same localities as those furnished by Mr. Crew and reported upon by Mr. Van Duzee. (Trans. Ent. Soc., Vol. 27, p. 343, 352, Dec., 1901.)

Very many species therefore in Mr. Van Duzee's list and mine are similar and I have avoided repetition of data included in his paper and in some instances the species. Some additional species however, are to be noted and in some cases variations worthy of note have been observed. The arrangement is practically that of Lethierry and Severin in the "Catalogue General des Hemipteres." The types of the new species described are in the author's collection.

* Contributions from the Department of Zoology and Entomology, O. S. U., No. 20.

CORIMELÆNIDÆ.

- Corimelæna notatipennis** Stal-? Numerous specimens, Bartica Br. Guiana. Has broad yellowish spot on base of corium, no distinct spot at apex. Scutellum as long as abdomen. Van Duzee doubts the reference to this species and lists it under *Corimelæna* spp.
- Corimelæna schmidti** Fab. One specimen, Bartica Br. Guiana, May 12, 1902

SCUTELLERIDÆ.

- Polytes velutinus** Dall. A number of specimens from Cochabamba; two from Coroica Yungas and one specimen from Yungas de la Paz, Bolivia, the latter kindly given me by Mr. E. P. Van Duzee. This is a handsome velvety green insect with a reddish border to pronotum, base of elytra and abdomen and apical portion of scutellum. When the velvety surface is lost the ground color is deep brown thickly punctured with metallic green.
- Polytes lineolatus** Dall. Bolivia, Yungas de la Paz. Two specimens for which I am indebted to Mr. E. P. Van Duzee, who is also to be credited with this determination, also one specimen from Cochabamba, Bolivia, Aug. and Sept., 1899, and one from Coroica Yungas Bolivia, April, 1899.
- Polytes obscurus** Dall. Seven specimens from Coroica Yungas, April, 1899.
- Symphylus ramivitta** Walk. Yungas de la Paz, Bolivia. From Mr. Van Duzee by whom determination is made.
- Camirus conicus** Germ. Bartica Br. Guiana. Evidently common as a number of examples are in the collection taken during April, May and July. Larvæ for April and May are included.

PENTATOMIDÆ.

- Discocephala umbraculata** Fab. Bartica Br. Guiana. March and April. Three specimens.
- Mormidea geographica** Fab. Bartica Br. Guiana. Two specimens April and May. (Det. Van Duzee).
- Mormidea ypsilon** Linn. Bartica Br. Guiana. Taken in abundance March to July. Cochabamba, Bolivia, one mutilated specimen which is almost certainly this species
- Mormidea angulosa** Stal. A specimen from Yungas de la Paz, Bolivia has been sent to me by Mr. Van Duzee, also one from Trinidad.
- Galedanta myops** Fab.* One specimen Bartica, Br. Guiana.
- Sibara armata** Dall. Numerous examples from Bartica, Br. Guiana where it must be a very abundant species.
- Euschistus acutus** Dall.* Evidently quite abundant at Bartica, Br. Guiana.

- Thyanta patruelis** Stal. Three specimens from Arequipa, Peru agree closely with Stal's description for this species.
- Loxa flavicollis** Drury. One specimen Coroica Yungas, Bolivia.
- Murgantia fasciata** H. S.* Two species from Yungas de la Paz, Bolivia from Mr. Van Duzee.
- Arocera apta** Walk.* A single specimen of this handsome species from Bartica, Br. Guiana.
- Nezara marginata** P. B. Santiago Chili. One specimen collected by Prof. J. C. Hambleton is referred here. It agrees with specimens of this species from San Rafæl and Jicultepec, V. C., Mexico. The apex of scutellum is faintly luteous. There are no traces of the black dots on thorax said to distinguish *læta* Stal.
- Banasa alboapicata** Stal.* One specimen Bartica, Br. Guiana.
- Arvelius albopunctatus** De Geer. Bartica Br. Guiana.
- Taurocerus edessoides** Spin. Four specimens Bartica, Br. Guiana.
- Edessa discors** Erich.* Bartica, Br. Guiana. Two specimens.
- Edessa quadridens** Fab.* Numerous specimens Bartica, Br. Guiana.
- Edessa jugata** Westw.* Coroica Yungas, Bolivia, April, 1899.
- Edessa moschas** Erich.* Four specimens Bartica, Br. Guiana.
- Edessa rufo-marginata** De Geer. Cochabamba and Cholumani, Bolivia.
- Discocera ochrocyanea** Lep. My specimen from Bartica, Br. Guiana agrees closely with the description of Amyot and Serville.
- Piezosternum subulatum** Thunb. Two specimens from Cochabamba, Bolivia, Aug. and Sept., 1899.
- Oplomus tripustulatus** Fabr. One specimen from Yungas de la Paz, Bolivia, kindly sent me by Mr. Van Duzee.

COREIDÆ.

- Spathophara biclavata** Fab. Bartica Br. Guiana. Several specimens of this large and striking species.
- Molchina compressicornis** Fab. Bartica Br. Guiana. One specimen—April.
- Pachylis laticornis** Fab. Cholumani, Bolivia. One male taken in Nov., 1898. A female probably this species from Bartica, lacks antennæ.
- Melucha lineatella** Fab. Bartica Br. Guiana, March 20–30, 1901. Several specimens—evidently an abundant form.
- Melucha phyllocnemis** Burm. Coroica Yungas, Bolivia. April, 1899.
- Nematopus indus** Linn. Bartica, Br. Guiana—collected in large numbers.

* Determined or verified by Mr. E. P. Van Duzee.

- Nematopus fasciatus** Westw. Bartica, Br. Guiana, March 29, 1901. A single very handsome specimen of this species. It is dark steel blue above, a bright orange red band across front part of pronotum, the corium lined with yellow, beneath testaceous, apex of femora steel blue. Mentioned and described by Van Duzee.
- Crinocerus sanctus** Fab. Coroica Yungas, Bolivia. One specimen agrees perfectly with original description. It has length of 15 mm. Body is rufous. Elytra and membrane black, the former with broad light rufous stripes starting at base converging but not quite meeting at tip of clavus then diverging to apex of corium, giving an elongate cruciate figure, spines and tubercles of hind femora black.
- Acanthocerus clavipes** Fab. Bolivia, Coroica Yungas, April and Cochabamba, Aug., 1899.
- Acanthocephala declivis** Say. var. *guianensis*, n. var. Differs from the typical forms of *declivis* in having the angles of the pronotum much larger, much elevated and directed somewhat forward. The antennæ are very long, the terminal joint especially elongated, segments measuring 9, 7, 6, and 13 mm. respectively. The tibiæ are more dilated than in typical *declivis* but less so than in *guatemalena* Dist., the expanded part of tibia measuring 15 mm. long, the basal part 5 mm. and the apical portion 3 mm. wide. Length of body 30 mm. Width of humeral angles 16 mm. I do not have access to the description of *fulvitarsa* H. S. and *equalis* Westw. but this specimen seems properly associated with *declivis* especially if the intermediate varieties *guatemalena* and *panamensis* of Distant be compared.
- Acanthocephala latipes**. Drury. Bartica Br. Guiana, listed also by Van Duzee.
- Acanthocephala femorata**, var. Bartica Br. Guiana. A rather small variety apparently closely related to *femorata* but with joints of antennæ all pallid.
- Petalops thoracicus** Fab. Bartica Br. Guiana. Also listed by Van Duzee.
- Holymeria rubescens** A. & S. Bartica Br. Guiana. Mr. Van Duzee records *H. intermedia* from the same locality from which species this is easily separated by the uniformly rufous color of thorax, scutellum and most of under surface. The antennal joints are black except basal half of fourth.
- Leptoglossus chilensis** Spin. Santiago, Chili, J. C. Hambleton. One female, varies from Signoret's description in having less yellow on tibiæ.

- Leptoscelis bipustulatus** Linn. Bartica Br. Guiana. Evidently an abundant species as the collection from Mr. Parrish included several dozen specimens and Mr. Van Duzee also lists it.
- Leptoscelis nigripes** Stal. Cochabamba, Bolivia, Aug., 1899. One specimen, differs from Stal's description in being slightly larger, 18 mm. instead of 16 mm.
- Pthia cyanea** Sign. Cochabamba, Bolivia. A very beautiful species, brilliant iridescent blue-green with an orange-red band on the pronotum. (Absent in two of the nine specimens).
- Spartocera fusca** Thunb. Cochabamba, Bolivia, Aug., 1899.
- Spartocera denticulata** Stal. Cochabamba, Bolivia. In some points this agrees better with *granulata*, but in structural details of genitalia it appears to belong here.
- Spartocera alternata** Dall. Coroica Yungas, Bolivia. Picture of *diffusa* Say to which it must be closely related.
- Plapigus foliaceatus** Blanch. Coroica Yungas, April, 1899. Two specimens which are dark fuscous rather than black and have the anterior border of the pronotum, three longitudinal stripes, the scutellum, costal border of elytra, dull ferruginous brown, otherwise agrees well with Stal's description.
- Margus** sp. "Quillota" Chili. An undetermined, possibly undescribed species received from Prof. J. C. Hambleton.
- Margus pectoralis** Stal? Puno, Peru, Nov., 1898. A number of the specimens of this species were received. They seem to agree better here than with any other described species.
- Zicca nigropunctata** De Geer. Cochabamba, Bolivia. Aug. and Sept., 1899.
- Zicca rubricator** Fab. Cochabamba, Bolivia, Aug. and Sept., 1899.
- Hypselonotus concinnus** var. Coroica Yungas, Bolivia, April, 1899. Resembles *atratus* Dist. exactly for upper side except scutellum has border and central line testaceous. Beneath lacks central black line of meso- and meta-sternum; legs marked somewhat with testaceous.
- Hypselonotus linea** Fab. Bartica Br. Guiana, March 21, 1901. Agrees perfectly with Fabricius' description.
- Hypselonotus fuscus** n. sp. Coroica Yungas, Bolivia, April, 1899. Pattern of *linea* above but light lines narrower, black areas have luteous or ochreous ground so thickly covered with black punctures as to appear dark fuscous where *linea* is black. Antennæ black. Beneath yellow testaceous, spotted with black, spots round or oval in the two series each side, legs densely annulate and spotted with black. Length, 12 mm.
- Paryphes lætus** Fab. Five specimens from Bartica, Br. Guiana, March and April.

Paryphes splendidus Dist? Coroica Yungas, Bolivia, April, 1899.

A very handsome species, the size and general picture of *lætus* but the color is a rich orange-red for the encircling band and the femora, while the general color is a lighter, more brilliant and metallic green. The band is narrower especially beneath. Length, 17 mm. Referred here with some doubt.

Trachelium tessellatum Dist..Bartica, Br. Guiana.

Cydamus adpersipes Stal, Bartica, Br. Guiana.

Cydamus trispinosus De Geer. Bartica, Br. Guiana.

Leptocorisa filiformis Fab. Bartica, Br. Guiana, May. Two specimens.

Leptocorisa tipuloides Fab. Bartica, Br. Guiana. Two specimens

Hyalymenus dentatus Fab. Bartica, Br. Guiana, May. One specimen. This, like the other members of the genus, has very well marked characters which appear from agreement with descriptions to be very constant. It is perhaps worthy of note that out of sixteen specimens received from this locality there are representatives of eight well marked species.

Hyalymenus dubius Dall. Bartica, Br. Guiana. One specimen only.

Hyalymenus gracilispinus Stal. Bartica, Br. Guiana. Two specimens June and August.

Hyalymenus pulcher Stal. Bartica, Br. Guiana. Three specimens March, June and August, 1901. Two have hind legs entirely black. One specimen is lighter, hind tibiæ only, black, otherwise apparently identical.

Hyalymenus puncticeps Dall. Bartica, Br. Guiana. Two specimens, March and April.

Hyalymenus sinuatis Fab. Bartica, Br. Guiana. Two specimens March and May.

Hyalymenus tarsatus Fab. Bartica, Br. Guiana. Two specimens, March and May.

Hyalymenus vespiformis Fab. Bartica, Br. Guiana. Three specimens, April and July.

Jadera sanguinolenta Fab. Bartica, Br. Guiana. April and May

LYGÆIDÆ.

Lygæus sulcatus n. sp. This species appears to be closely related to *obsoletus* Stal and *interstinctus* Distant, but cannot be referred to any of the variations of these species since there are differences in the plan of coloration. The pronotal sulci are deep, curved, and with prominent margins.

Head ferruginous with a fuscous central stripe widest at occiput narrowing and becoming obscure on tylus. Antennæ dull fuscous with apex of 1st and 3d joints yellow. Pronotum fuscous with the lateral margins, a central carinate line and the margins of the transverse sulci

ochreous or light ferruginous. Margins of sulci are much swollen, and a short carina extends from their posterior borders parallel with central carina. Scutellum with strong central carina and transverse elevations which are ochreous. Elytra with veins and costa, commissural line and apex of corium indistinctly ochreous, membrane light fuscous, the apical portion smoky hyaline, the veins blackish. Beneath light fuscous with margins of pleuræ, acetabulæ, orifices and most of the ventral segments, especially on the disk, pallid. Legs mostly fuscous with coxæ, trochanters, base and apex of femora and central part of tibiæ pallid. Length 5 to 5.5 mm., width 1.5 mm.

Three specimens from Bartica Br. Guiana, March, April and May, collected by H. S. Parrish.

Were it not for generic differences this might be considered as the female of *Acroleucus maurus* as the coloration is of a similar pattern, the strong ochreous and ferruginous markings here being obsolete or obscured in *maurus*. The membrane, however, is subhyaline with fuscous veins. Observations on the possible relationship of the two forms are desirable.

Lygæus variegatus De G. Bartica, Br. Guiana. Two specimens. March and April. Mr. Van Duzee listed specimens for June.

Oedancala notata Stal. Bartica, Br. Guiana. Numerous specimens. March and May.

Heræus cincticornis Stal. Cochabamba, Bolivia. August. One specimen agreeing perfectly with Stal's description.

Pamera globiceps Stal. Bartica, Br. Guiana. Four specimens. March and April.

Pamera vicinialis Dall. Bartica, Br. Guiana. July 14, 1901. One specimen.

Pamera Dallasi Dist. Bartica, Br. Guiana. Two specimens. March and May.

Pamera consuta Dall. Bartica, Br. Guiana. One specimen. April.

Pamera costalis Stal. Bartica, Br. Guiana. March, April, and May, 1901.

Pamera parvula Dall. Bartica, Br. Guiana. Two specimens. Agrees with Dallas' description but anterior femora are black except at base and apex, not mentioned by Dallas.

Pamera tineodes Burm. Bartica, Br. Guiana. Three specimens. April, May and August, 1901.

Pamera serripes Fab. Bartica, Br. Guiana. Three specimens. August, 1901.

Pamera tuberculata n. sp. General shape of *costalis*, the pronotum with two distinct conical tubercles within impunctate, circular areas. Length of female, 7.5 mm.

Head large, ocelli elevated, a little nearer the eyes than to each other. Antennæ, first joint rather thick extending about half the length beyond the apex of the head, second joint long, slender, longer than third, third enlarging at tip, fourth about as long as third, a little thicker. Pronotum deeply constricted, the anterior lobe but little longer than posterior; a rather broad granulate collar, two conspicuous conical tubercles about as far apart as the eyes and situated within naked, impunctate areas; a median stripe and lateral lines scantily clothed with minute golden hair, posterior lobe distinctly punctate, the lateral margins orange and two slightly divergent rather diffuse orange stripes on the disk. Scutellum with fine golden hair, apex ochreous. Elytra brown, the clavus nearly black, margined to beyond its middle with ochreous. Corium with a blackish diffused spot towards the base, a black band across the centre extending forward in an angle. Apex black, the extreme base, a line next to claval suture and most of costa yellowish. Membrane fuscous with subhyaline, large spots next to corium at its apex and on the middle of the apical line. Beneath black, the disk of the abdomen slightly reddish, border of fourth segment yellowish, middle portion of the margin light yellow. Legs yellow, the anterior femora and tibiæ and outer portion of the femora and tibiæ of the intermediate and hind legs suffused with fuscous, anterior tibiæ distinctly enlarged at apex. One specimen from Bartica, Br. Guiana collected April 18. It is at once distinguished from any of the other members of the genus by the peculiar nipple-like tubercles on the anterior lobe of pro-thorax.

Erlacda arhapseoides Sign. Quillota Chili, J. C. Hambleton. Has ocelli small but well developed. Signoret says, "No ocelli" ("Pas d'ocelles") but in other respects, both generic and specific description agrees perfectly.

Petizius assimilandus Dist. Bartica, Br. Guiana. May, 1901. Distant described the species from Guatemala.

Gonatas divergens Dist. Two specimens from Bartica, Br. Guiana, agree so closely with this species that I refer them here though previous records place it in Guatemala and Panama only.

PYRRHOCORIDÆ.

Dysdercus ruficollis L. Coroica Yungas Bolivia. April.

CAPSIDÆ.

Lygus cuneatus Dist. Bartica, Br. Guiana. Two specimens. In these the apices of femora and tibiæ are touched with vermilion or rose and the cuneus is bordered only in part with ochraceous.

ARADIDÆ.

Hesus sp. I have one specimen from Bartica, Br. Guiana, which is doubtless the same as Mr. Van Duzee refers to *cordatus* or *acuminatus*. Not having specimens of the three species in hand comparisons with descriptions are unsatisfactory, especially as the available descriptions are indefinite in some important details.

REDUVIIDÆ.

- Pothea frontalis** Lep. Bartica, Br. Guiana. Two specimens
Ectrichodia immarginata Stal. Bartica, Br. Guiana. Two specimens.
Apiomerus pilipes Fab. Numerous specimens of this large hairy rather coarse species from Bartica, Br. Guiana.
Apiomerus sp. Bolivia. A small jet black species with a small rose red spot on disk of corium.
Micrauchenus lineola Fab. Bartica, Br. Guiana. Numerous specimens.
Callicopius nigripes Linn. Bartica, Br. Guiana. A fine series of this species.
Heniartes flavicans Fab. Bartica, Br. Guiana. A large number included in the collection. The extreme amount of adhesive secretion on the legs played havoc with many other specimens.
Conorrhinus renggeri Stal. One specimen from Santiago Chili, collected by Prof. J. C. Hambleton.

SERIDENTUS, nov gen.

Quite similar to *Shaumannia*, head slightly elongate and broad, anterior portion widening before the eyes, spinous laterally, tylus deeply cleft, antenna with basal joint thick, thicker than second but of equal length, 3d and 4th together about equal to second, ocelli placed in line with hind border of eyes, margin of head and pronotum denticulate, elytra shorter and narrower than abdomen, abdomen behind broadly widened into mucronate lobes, margin minutely denticulate, legs slender, anterior femora somewhat swollen, rather sparsely denticulate. Prothorax with strong anteriorly projecting spines.

Seridentus denticulatus, n. sp. Body widening posteriorly, head, thraox, abdomen, rows along the pleura beneath and the femora denticulate. Length 19 mm., width of prothorax 2.3 mm. posterior segment of abdomen 3.5 mm.

Eyes large, globose, coarsely granulate; lateral lobes in front of eyes prominent, terminating in coarse spur; tylus directed upward and forward, deeply cleft; antennæ, second joint equal to or slightly longer than first but more slender, third and fourth together nearly as long as second, fourth little shorter than third, all joints thickly pilose; hinder border of head below set with a row of four strong

spines, prothorax narrowing from base to head, lateral margins denticulate, elytra reaching onto base of sixth segment, nearly as wide as the abdomen; abdomen with a small denticulate spine behind border of each segment from first to fifth, sixth segment expanded at the posterior margin into a broad mucronate lobe; beneath, prothorax bears numerous denticulations arranged in somewhat regular lines.

Color light yellowish, head above and a broad stripe on the cheek, a broad annulation on each segment of beak, pronotum, scutellum except two basal spots, costal areas, most of clavus and discal cell and a large part of the two apical cells blotched, with most of the exposed portion of the abdomen, lateral stripes on thorax and median line from prothorax to tip of abdomen, irregular annulations and blotches on anterior and middle legs, dark fuscous or black. A conspicuous black dot occurs on the dorsal margin of fore and middle femora.

Described from five males collected in British Guiana by Messrs. Parrish and Crew, April and May, 1901. Mr. Van Duzee has kindly placed three which were received in his collection at my disposal. The species is a striking one and while presenting characters that ally it closely to *Shaumannia* is evidently representative of a different genus.

VELIADÆ.

Velia brunnea n. sp. Near *vivida*, Buch. White. A rich chocolate brown with hind border of pronotum yellow and the elytra nearly black. Length, 8 mm.

Head rather long, projecting nearly half its length in front of eyes, strongly deflexed, antennæ long, first joint longest, second and fourth nearly equal, third shortest, beak reaching base of middle coxæ. Pronotum with prominent humeri, hind border broadly bisinuate the margin elevated. Posterior femora without spines.

Head, basal joint of antennæ, prothorax, except hind margin, femora, border and disk of abdomen below, rich chocolate brown, hind border of prothorax yellow, elytra velvet black; three outer joints of antennæ, beak, tibiæ, tarsi, and most of under surface black. A fine short velvety pile covers the body except on posterior border of prothorax.

Seven specimens from Coroica Yungas, Bolivia, April, 1899.

This seems to agree pretty closely with *vivida* White, but is separated at once by absence of femoral spines.