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Viaggio del Dr. Enrico Festa nell'Ecuador e regioni vicine.

XIX.

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AQUATIC RHYNCHOTA

1. *Gerris* sp. nov.

A single macropterous ♂ of a new species of the subgenus *Limnometra*, from Valle del Zamora; I have not described it as the antennae are missing.

2. *Gerris* sp. ?

A single nymph (probably representing a new species) of the subgenus *Limnometra* from Gualaquiza.

3. *Gerris hyalinus* Fabr.

(subg. *Limnogonus*). Macropterous ♂♀; apterous ♂. — Gualaquiza.

4. *Gerris* sp. ?

Nymphs of one or two species from Foreste Rio Peripa.

5. *Gerris flavolineatus* Champion.

Gualaquiza; Harro; Foreste Rio Peripa.

6. *Potamobates bidentatus* Champion.

Apterous, ♂♀, — Gualaquiza.

I must admit that this species has puzzled me very considerably, and that I am now by no means satisfied as to my conclusions.

2 ♂ & 1 ♀ from Gualaquiza seem to me to be undoubtedly *P. bidentatus* Champion, though the details of colouring & the proportions of the antennae by no means agree with Champion's account. Four other examples (all ♀) from foreste Rio Peripa, may possibly be *P. unidentatus*, although not accordant with the original description; they seem to be distinct specifically from the 3 from Gualaquiza.

A

In this species & in a new Gerris (*G. perseus*, presently to be described), I have encountered an amount of individual variation in the proportions of antennae, tarsi etc., for which I was entirely unprepared.

Champion (1) separates his two species as follows:

« Pronotum with a large triangular ochraceous patch on the anterior lobe; antennae with joints » [segments] « 2 and 3 subequal in length; first genital segment unidentate on the right side at the apex beneath in the ♂. *Unidentatus*, n. sp.

« Pronotum with a narrow ochraceous median line; antennae with joint » [segment] « 2 longer than 3; first genital segment bidentate on the right side at the apex in the ♂. *Bidentatus*, n. sp. »

The colour - characters, at least, here given are far from constant, and the species are evidently remarkably variable, so much so that until an opportunity of examining a large series of both sexes occurs, I must decline to do more than identify 3 of the 7 as *P. bidentatus*. The following table may, however, be of interest:

			antennal proportions
(α) no 1 ♂	from Gualaquiza.		40 : 14 : 14 : 20
» 2 ♂	do		antennae broken
» 3 ♀	do		37 : 14 : ? ?
» 4 ♀	Rio Peripa		26 : 11 : 8 : 16
» 5 ♀	do		28 : 12 : 8 : 16
» 6 ♀	do		30 : 12 : 8 : 19
» 7 ♀	do		32 : 11 : 11 : 19

(β) Nos 1, 2, 3 & 7 have a large triangular ochraceous patch on the pronotum; Nos 4-6 have a somewhat narrow central stripe of the same colour, on the pronotum. Nos 1-2 have 3 narrow, longitudinal, more or less entire ochraceous stripes on the mesonotum, 4 & 5 have a short, narrow stripe about the centre of the mesonotum, while 6 & 7 are immaculate.

Therefore, according to (α), 1 & 7 ought to be *unidentatus*, 4-6 *bidentatus*; according to (β), 1-3 & 7 ought to be *unidentatus*, 4-6 *bidentatus*.

Nos 1 & 2, however, are unmistakably *bidentatus*, judging by the structure of the genital segments; & I believe 3 to be the female of the same species. Nos 4-7 I have labelled « *Potamobates* sp.?, probably not *bidentatus* ».

In the 5 ♀, the 6 segment of the connexivum is produced on both sides considerably beyond the apex of the abdomen; this prolongation is rounded & blunt, and densely hairy, It is noteworthy that an appen-

(1) Biologia Centr. Amer., Zool., Hemipt. Heteropt. II, pp. 154-5. Pl. ix, figs 20-2.

dage of somewhat similar appearance, though from a different source, is present in the ♀ of *Thaumastometra Montandoni* Kirk.

7. *Brachymetra Kleopatra* sp. nov.

Macropterous. Head & pronotum very smooth & polished.

First segment of the antennae shorter than the second and third together, first segment rather more than twice as long as the second, second and fourth subequal, third one-third longer than second. Rostrum reaching beyond apex of mesosternum. Pronotum with a shallow horse-shoe-shaped impression in the middle anteriorly; posterior to this, rather feebly carinate longitudinally, widely reflexed laterally and posteriorly (f. 1); lateral margins raised up (anterior sixth part excepted) and obtuse-angled about the middle, base acutely triangularly produced. Metasternum rather obsoletely tuberculate. Anterior tibia one-fourth longer than the femur, three and a quarter times longer than tarsus, second segment of the latter two-thirds longer than the first. Intermediate femur slightly shorter than tibia, which is three-and-a quarter times longer than tarsus, first segment of the latter about five times longer than the second. Posterior femur about one-half longer than tibia, which is two-thirds longer than tarsus, first tarsal segment $2\frac{3}{4}$ times longer than the second. Posterior femur much longer than intermediate femur, intermediate tibia much longer than posterior tibia.

♂ Apical margin of 6th (7th?) ventral segment roundly, somewhat profoundly emarginate. [fig. 2].

♀ apical margin of same segment almost straight.

♂♀ Connexivum not produced into spines.

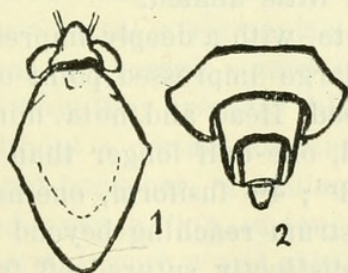


Fig. 1. — Pronotum etc. of *Brachymetra Kleopatra* Kirk. ♂

Fig. 2. — Apical segments of venter of the same.

Length to apex of abdomen $8\frac{1}{2}$ - $8\frac{3}{4}$ mill., to apex of elytra $9\frac{3}{4}$ mill., breadth $2\frac{1}{2}$ mill. — Valle Santiago.

Pallid castaneous, ventrally luteous. Dorsum of abdomen paler than pronotum. Antennae and ventral parts of anterior femora subfuscous, intermediate and posterior femora, tibiae and tarsi obscure purple-brown;

anterior tarsi blackish. Eyes wine-red. A large conspicuous silvery spot at the apical margins of the intermediate and posterior ambulacra.

Apparently closely allied to *B. fuscinervis* Berg, but differs in the proportions of the antennae, the form of the pronotum etc.

8. *Paravelia inveruglas* sp. n.

Apterous. Very hairy. Head narrowly sulcate longitudinally in the centre: first segment of the antennae incrassate, curved, $\frac{1}{7}$ th longer than the second, which is $\frac{1}{6}$ longer than the third, the fourth fusiform, $\frac{1}{4}$ longer than the 3rd. Rostrum reaching to the base of the mesosternum. Pronotum subcarinate longitudinally, rather coarsely punctured; slightly constricted about the middle at the lateral margins, base rounded. Anterior tibia $\frac{1}{10}$ longer than the femur, and twice as long as the second, which is twice as long as the first. Intermediate tibia $\frac{1}{5}$ th longer than the femur and $\frac{1}{4}$ th longer than the tarsus, third tarsal segment $\frac{1}{2}$ longer than the second, the latter $3\frac{1}{2}$ times longer than the first. Posterior tibia $\frac{1}{2}$ longer than the femur, and $2\frac{1}{3}$ longer than the tarsus, second and third tarsal segments subequal, each about $4\frac{1}{2}$ times as long as the first.

♂ Apical margin of the 6th ventral segment roundly, somewhat profoundly emarginate.

Length $7\frac{1}{4}$ mill., breadth 2 mill.

Pun; Tulcan. Nymph from Harro.

Blackish; antennae, rostrum (except black apical segment) and legs reddish-black; pronotum pale violet-brown, margins reddish-violet.

Closely allied to *P. boliviana* Breddin, but larger and differing in the proportions of the appendages.

9. *Rhagovelia Festae* sp. n.

Apterous. Fusiform, a little dilated.

Head anteriorly truncate, with a deeply-impressed inverted arrow (V) on the notocephalon, a large impressed point on each side of the posterior margin of the head. Head and nota minutely punctured. First antennal segment curved, one-half longer than second, which is one-fourth longer than the 3rd; 4th fusiform, one-half longer than 3rd. Penultimate segment of rostrum reaching beyond the base of prosternum. Pronotum not carinate, distinctly sutured off from mesonotum (1), the latter rounded basally, covering the mesonotum (except basally at the sides). Mesosternum with a curved, diagonal carina extending from the intero-basal margin of anterior ambulacra almost to the base of intermediate ambulacra. Anterior coxae very large & round, femora a little shorter than tibiae, about 4 times as long as tarsi.

(1) This, as I shall show later, is not a specific character, but it is as well to note it here.

♀ Abdomen not carinate ventrally, 6th segment (ventral) about 2^{co} as long as 5th, apical margin subsinuate. Posterior femora not incrassate, not dentate; tibiae not dentate.

Length 2.6 mill.

Ecuador — Foreste Rio Peripa.

Dark slate-grey, slightly covered with yellowish pubescence. Antennae (except the yellowish-white base of first segment) and legs (except brownish coxae & yellowish-brown pilosity) shining bluish-black. Antenniferous tubercles shining brownish.

I have great pleasure in naming this interesting bug in honour of Dr. Festa, the intrepid traveller.

It belongs apparently to *Trochopus*, established by G. H. Carpenter, 1898, Entom. Monthly Mag., pp. 78-81, Plate III & pp. 109-11 & confirmed by Champion, 1898, Biol. Centr. Amer., Hem. Heter., II, pp. 140-1; Pl. 9, figs 4 & 5.

I regret however that after a careful examination of examples of *Rhagovelia plumbea* Uhl. in the British Museum and, through the kindness of Mr. Carpenter, in my own collection, and of *Trochopus salinus* Champion, kindly given to me by Mr. Champion, I cannot see my way to regard *Trochopus* as a genus distinct from *Rhagovelia* Mayr.

The chief differences between *Rhagovelia* & *Trochopus* appear to be (*teste* Carpenter and Champion) that:

1) In *Trochopus* the tarsi are (according to these authors) 3, 2, 2-segmentate; in *Rhagovelia*, 3, 3, 3.

2) The pronotum in *Trochopus* is sutured off from the mesonotum; in *Rhagovelia* (except *R. tenuipes* Champion, l. c., p. 137) these nota are fused together.

1) Now, I have elsewhere expressed my opinion of the unsatisfactory character of these minute tarsal « segments ».

I think I may say that in average « good » museum specimens, preserved in the ordinary way, they are very difficult to observe with any degree of certainty, without a certain amount of preparation — which is very undesirable, if not improper, in dealing with borrowed material, especially types —, and examination under a compound microscope. The fact that such a careful worker and able entomologist, as Mr. Carpenter, failed — in working with material preserved in alcohol — in his original description (l. c. p. 78) to detect more than two segments in each anterior tarsus, shows the undesirability of employing such a character. Moreover, these minute segments (or « nodes » as they may preferably be termed) are apparently not always constant in the Geridae, for Professor Uhler in describing *Trepobates pictus* (Proc. Zool. Soc. Lond., 1894, p. 214) writes « In two specimens the basal joint of tarsi was present on one side, and not on the other ».

2) The exception to the fused pro-and mesonota (in the apterous *R. tenuipes* ♀) can scarcely be deemed to prove the rule; indeed, it appears almost to render further discussion unnecessary. Moreover a species from Venezuela in the Turin Museum, which I have determined as *Rh. femoralis* Champion, and another from Venezuela and Darien, referred by me to *R. angustipes* Uhl., noticed in the I^a part of this paper) have distinctly - separated pro - and mesonota in both sexes, and at the same time there are 3 distinct (as seen with a compound microscope) segments in each tarsus. In short, *Trochopus* may perhaps be on the way to developing into a new genus or subgenus, but it cannot be said, in my opinion, to have attained as yet to that point.

10. **Corixa Kollarii** (Fieb.)

Corixa kollarii Fieb. 1851 Abh. böhm. Ges. Wiss., (v), 7, p. 229, Tab. 1. fig. 7; Guérin 1859 in Sagra's Cuba, Atlas, Tab. XIII, fig. 14.

Belongs to subgenus *Callicorixa* F. B. White.

Comparatively broad, length $2\frac{1}{2}$ times greater than width: pronotum and clavus feebly rastrate, corium and membrane scarcely rastrate.

Head and pronotum short, width of the latter $2\frac{1}{2}$ times greater than its length; lateral angles obtuse, rounded. posterior angle obtuse, subtriangular. Metaxyphus triangular, somewhat elongate, not acuminate. Anterior femur incrassate, intermediate tibia one-half longer than tarsus, claw one-fifth longer than tarsus.

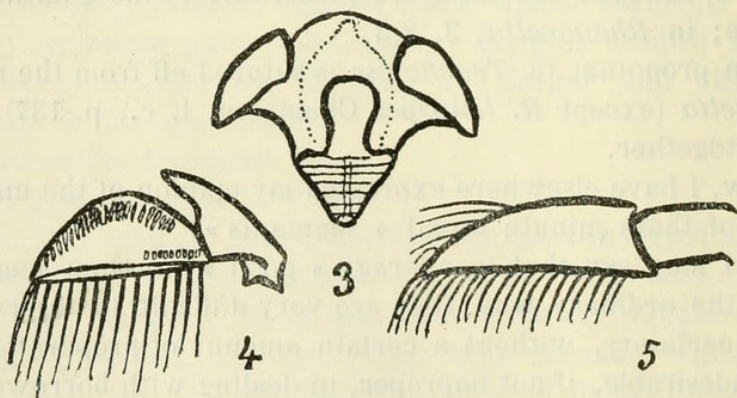


Fig. 3. — Face of *Corixa Kollarii* Fieb. ♂

Fig. 4. — Anterior tibia and tarsus of the same ♂.

Fig. 5. — Anterior tibia and tarsus of the same ♀.

NB. — Only one row of bristles has been represented for the sake of clearness.

♂ Frontal fovea large, deep, ovoid, extending from the base of the labrum to about two-thirds of the length of the eye (as seen from below), and laterally from eye to eye; base terminating in a transverse carina, very slightly produced posteriorly in the middle, apical margin subtruncate [fig. 3].

Anterior tibia torpedo-shaped, acutely triangular, apex produced over (but widely separated from) the dorsal margin of the pala. Dorsal margin of pala strongly arcuate, furnished with 2 entire rows of teeth; of which the upper row is arcuate, more or less parallel to, and following the direction of, the dorsal margin of the pala (starting from the base and ending at the apex thereof), comprising about 25 long and narrow teeth; the lower row, comprising 9 rather smaller teeth, is fairly straight, commencing at the base of the pala (near the ventral margin) and ending abruptly about one-third of the length of the margin [fig. 4].

Strigil absent, apical margin of seventh dorsal segment furnished with a row of long and stout bristly hairs.

♀ Usually (? always) larger than ♂. Pala narrowly cultrate [fig. 5].

Length 7-8 mill., breadth 3 mill.

♂♀ Quito; la Concepcion, Ville de Mira; Tumaco.

Brownish, head & legs luteo-testaceous; pronotum with about 8 yellow lines, often furcate & anastomosing. Lines of clavus fairly straight and dilated at base, undulated & narrow at apex; lines of corium and membrane interrupted, abbreviated & contortuplicated (pale markings of corium almost arranged in rows, but longitudinal brownish lines not altogether entire).

The brownish colour of the apex of corium & of the membrane of the left elytron is very pale, sometimes quite obliterated.

Sterna, metaxyphus & abdomen (dorsal and ventral) blackish.

Posterior tarsi destitute of black spots.

NB. — Although the black spot on each posterior tarsus has always been considered characteristic of the subgenus *Callicorixa*, it is nevertheless absent in this species and in *C. Griffinii*, and it is probable that a number of imperfectly known American species will be referred later to this subgenus. The black spot has diminished to a mere speck in some examples (kindly sent me by Dr. Horváth) of *C. concinna* (Fieb.), from the Caucasus. The peculiarly shaped anterior tibiae (♂) of this species are very similar to those of *C. Cubae* Guér., in the same sex.

11. *Corixa Griffinii* sp. nov.

Belongs to subgenus *Callicorixa*.

Similar in shape to *C. Kollarii*, length 3 times as great as width.

Pronotum and clavus slightly rastrate, corium and membrane scarcely rastrate.

Width of pronotum twice as great as its length, lightly rounded at the base, not angulate; lateral angles acute. Metaxyphus long triangular, lateral margins slightly sinuate. Macropterous, nevertheless corio-membranal suture not very distinct. Anterior femur not incrassate (comparitively); intermediate femur twice as long as the tibia, which is $\frac{5}{2}$ longer than the tarsus, claws $\frac{1}{2}$ longer than the tarsus.

♂ Frontal fovea not profound, subcircular, not truncate apically, not carinate basally, reaching to about one-third of the length of the eyes (from beneath): apex scarcely reaching to the base of the labrum [fig. 6].

Pala widely cultrate, apex somewhat rounded, dorsum subarcuate, venter fairly straight; a single entire row of about 18 teeth aching from base to apex [fig. 7].

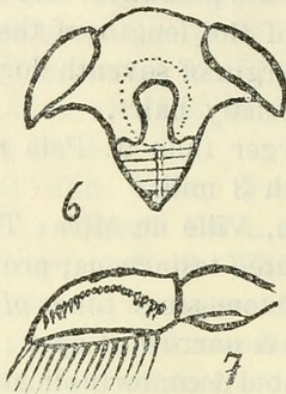


Fig. 6. — Face of *Corixa Griffinii* Kirk. ♂.

Fig. 7. — Anterior tibia and tarsus of the same ♂.

♀ Pala semilunate, somewhat narrow.

Length $6\frac{1}{2}$ - 7 mill., breadth $2\frac{1}{4}$ mill.

Lago di Kingora; Harro.

Head, sterna, legs etc flavous. Pronotum pallid greenish-yellow with 9-10 brownish-black furcate & anastomose lines. Elytra brownish, all the yellowish lines dilated, wider than the brownish markings. Lines of clavus and at base of corium subparallel, entire, undulated; lines of the membrane & apical part of corium interrupted, abbreviated, contortuplicated. Abdomen blackish above and below.

I have much pleasure in dedicating this species to Dr. Achille Griffini, the courteous custodian of the Insecta of the Turin Museum, & a careful student of the Rhynchota. - It is very similar in shape to *C. Kollarii* Fieb., but is at once distinguished by the subparallel, entire pale lines of the clavus and basal portion of the corium, and in the males by the frontal fovea & the palae. The male, moreover, lacks the peculiar shape of the anterior tibiae that obtains in *C. Kollarii*.

12. *Anisops Antigone* Kirk.

♀ Gualaquiza.

13. *Anisops* sp. 2 (immature).

Lago di Kingora.

14. *Anisops* sp. 3 (imperfect condition).

Valle Santiago.

15. *Anisops elegans* Fieb.

Cuenca; Gualaquiza, Pun; Quito; Tumaco; Valle Santiago.

16. *Martarega* (1) *membranacea* F. B. W. White.

♂♀ Gualaquiza.

In the first part of my « Revision of the Notonectidae » (Trans. Ent. Soc. Lond. 1897) I gave an analytical table of the Notonectinae (p. 395), which the examination of *Martarega* proves incorrect.

As the second part of my « Revision » may not be published for some while yet, I take this opportunity of giving a revised table.

1. Eyes not contiguous at the base (2); posterior femora not reaching to the apex of the elytra, the latter divided into areas. 2

— Eyes contiguous at the base; pronotum very transverse; elytra not (or indistinctly) divided into areas. 4

2. Pronotum not transverse, a large rounded fovea not present near each antero-lateral angle 3

— Pronotum very transverse, a large rounded fovea near each antero-lateral angle; ultimate and penultimate segments of antennae subequal; anterior tarsi 2-segmentate ♂♀, posterior tarsi with long claws.

Enithares Spin.

3. Comparatively flat and broad; ultimate segment of antennae much shorter than penultimate; anterior tarsi bisegmentate ♂♀; posterior tarsi without claws.

Notonecta Linn.

— Very convex dorsally, and slender; ultimate segment of antennae much longer than penultimate; posterior tarsi with claws, anterior tarsi 1-segmentate ♂, 2-segm. ♀.

Anisops Spin.

4. Posterior femora reaching beyond apex of elytra; ultimate segment of antennae much longer than penultimate; intermediate tarsi bisegmentate ♂♀.

Nychia Staol 1859 = [*Antipalocoris* Scott].

— Posterior femora not reaching the apex of elytra; ultimate segment of antennae much shorter than penultimate; intermediate tarsi 1-segmentate ♂, 2-segm. ♀. *Martarega* F. B. White [= *Signoretiella* Berg.].

(1) *Martarega* F. B. White 1879 = *Signoretiella* Berg 1883.

(2) In some species of *Anisops*, the eyes in the ♂ are almost contiguous at the base, rarely actually touching; in *Martarega* and *Nychia*, the inner margins of the eyes are contiguous for at least one — third of their dorsal length from the base.



Kirkaldy, George Willis. 1899. "Aquatic Rhynchota." *Bollettino dei musei di zoologia ed anatomia comparata della R. Università di Torino* 14, 1–9.

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