Hemipterological Notes and Descriptions II

В**у**

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13. The earlier stages of Eupteryx Loewi Then.

Having found that a maple (Acer pseudoplatanus L.) in my garden at Silkeborg was strongly infested by *Eupteryx Loewi Then*, I resolved to study the development of the larval and nymphal stages of this Typhlocyboid leafhopper and commenced my researches in spring 1921. I may here note that my distinction between *larval* and *nymphal* stages is based upon the absence or presence of wing-pads respectively.

On the 8th of May (temperature at noon 22° C) some leaves on the lowest branches of the maple were expanded, and on the underside of the leaves I found some newly hatched, very soft and fragile, tiny larvæ. I failed to find any egg or egg-shell, but feel sure that the eggs may have been deposited on or in the buds; at all events the small weak creatures, just hatched, are not able to walk a long way for food.

I observed the following stages:

1st (larval) stage. (Fig. 6 b). Length of body 0,75 mm. Hyaline but with a distinct milky hue. Vertex of head, pro-, meso- and metanotum with a fine longitudinal median, somewhat raised line (forming the suture that splits during the moult, thus enabling the larva to leave its skin). Head large, rather projecting in front of eyes;

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Printed 27/4 22.

the lateral and frontal margin with 4 tactile bristles, each one placed on a tubercle-like base or protuberance (fig.6 a) (some smaller paired bristles are found on the frons). Eyes roughly faceted, brownish red. Antennæ with many joints (all short). No wing-pads. Basal segment of abdomen apparently composed of 2 or 3 parts; dorsal segments each with 2 tactile bristles placed near the hind margin and forming 2 longitudinal rows well removed from the median line; the last 4 segments each with a similar bristle on the



Fig. 6 Larva and nymphs of *Eupteryx Loewi Then*. Differently enlarged.

hindmost part of the lateral margin. Legs rather short; tarsi two-jointed; 1st joint small, 2nd large and stout.

The small larvæ showed great ability in walking sideways. They soon grew larger, and I noticed the first moulting of a larva on May 30th. In the first days of June the 2nd stage was commonly met with.

2nd (nymphal) stage. (Fig. 6 c). Length of body about 2mm. Colour more or less distinctly yellowish. Surface of body with variable, small dark spots arranged in two irregular longitudinal stripes; apex of abdomen with dark spots too. Wing-pads distinct. Head and prothorax comparatively smaller than in the larval stage, but the frontal and lateral protuberances bearing the 4 tactile bristles of the head much more prominent and stout; the two dorsal rows of tactile bristles on abdomen, especially towards apex, closer to the median line; the lateral tactile bristles on the 4 last segments of hind body somewhat reduced and weakened; in return each one of the segments (the foremost

ones not excepted) laterally provided with about two additional ordinary bristles.

3rd (nymphal) stage. (Fig. 6 d). Length of body 2,5 mm. Colour richer; upper surface of body in its whole length with broad, often more or less confluent black, longitudinal streaks, which provide the otherwise pale nymphs with a peculiar aspect. Wing-pads well developed and to some degree differentiated. The protuberances bearing the 4 tactile bristles of the forehead still more prominent, especially the sublateral pair, which are very stout and almost project forwards as much as the frontal pair, the vertex in this way getting nearly a quadrate form. Pronotum widened laterally. The hindmost dorsal pair of tactile bristles on the hind body close together; the lateral tactile bristles (except the pair on the last segment) quite reduced and scarcely separable from the remaining (2 or 3) ordinary bristles on the sides of the segments.

4th (nymphal) stage. Not much different from the 3rd stage (I have not observed the moulting to 4th stage), the main distinction being that the sides of the abdomen have developed into a flattened and membranous, sub-transparent, connexivum-like edge, the sharp margin of which bears the hairlike bristles; besides this the nymph is still more marked with black and has attained the length of the imago; the protuberances of fore-head have also been perceivably stronger and stouter.

The 7th of July I observed the first imagines, and after the middle of July no nymphs or cast nymph-skins were found, the whole evolution from egg to imago thus taking approximately 2 months. The empty nymph-skins were always regularly opened along the "splitting-line", the same as the median line from front of head back to hind margin of metanotum; all the empty skins I examined, therefore, were perfect, which was not always the case with nymph-skins in other species within the sub-family *Typhlocybinæ*.

It may be noticed that the antennæ and legs in the earlier stages of *Eupt. Loewi* became more slender and the eyes more finely faceted after each moult.

The most striking feature relating the larval and nymphal stages is the quite different form of the head compared with the head of the imagines, probably a common feature in the *Typhlocybinæ*; I have at least found corresponding facts in species of *Typhlocyba* and *Zygina*, and judging from the late Mr. Kirkaldy's description of the nymph of an exotic *Erythroneura* this species shows a similar development.

As to the paired tactile bristles, projected forwards, upwards and sideways as they are, corresponding to their different position, I feel quite sure that they serve as alarming implements in case of an approaching danger. Probably the variable numbers and position of the bristles may be successfully employed systematically, when the earlier stages of a good number of species being known doubtless there is a great variability in the position and numbers of bristles in different species. I have for an instance observed the first stage (in this case nymphal, as wing-pads were present) of a species of the Typhlocyba rosæ-group; the nymphs of this species were provided with some few pairs of tactile bristles both on promeso- and metanotum, which were bare in Eupt. Loewi, and in Kirkaldy's description of the nymph of Erythroneura rewana from Viti Levu (Leaf-Hoppers. Supplement 1907) we find a corresponding example. Kirkaldy writes: "Head produced in front of eyes at least as far as the length of the rather long eyes beyond them. ---There are a large number of erect capitate hairs disposed as follows: 6 on the lateral and anterior margin of the vertex, 4 on pronotum, 8 submedian and 6 lateral on the

abdominal tergites; also a number on the meso- and metanotum, tegminal pads and legs."

14. On Argentinian species of the genus Phymata.

While collecting in Western Argentine I found 2 species of the genus Phymata. The one, Ph. erosa subsp. chilensis Handl., was rather common along the Pre-Cordilleras, but very seldom met with in the lowlands. The other species was also a common one, but was only found in the lowlands, scarcely in the districts close to the mountain ranges, much more frequently at a fairly good distance east of the Cordilleras. This latter species is not mentioned in Handlirsch: Monographie der Phymatiden. and has remained undescribed till 1919. It is allied to the characteristic Ph. fortificata H.-Sch., which is at once recognized by the mighty, forwardly directed processes of the pronotum, and the two, somewhat diverging, stout spines in front of the head, but it bears also some affinity to Ph. armata Handl.

Many of the *Phymata* species are strongly variable and very difficult to accurately define, as they often develop intergrading subspecies or geographical races. But especially *Ph. fortificata* seems to vary very little, and the same may also prove to be the case with the species here especially treated of, as all the specimens I have seen or collected myself practically are quite uniform; they have been compared with *Ph. fortificata* (fig. 7 a, b, c) from Northern Argentine.

I have always regarded this *Phymata*, and still do so, as a distinct species. Quite recently Mr. M. S. Pennington in his "Nota sobre las especies argentinas del género "Phymata" Latr." (Physis 1919, Buenos Aires) describes it as *Ph. fortificata* var. *argentina* n. and notes that this variety is "la predominante en el pais." The species, *Ph. argentina* Penn. (fig. 7 aa, bb, cc), may be characterized as follows: Allied to *Ph. fortificata*, of same size, structure and general form, but strongly different regarding the armature of head and pronotum: teeth in front of head very short, not spinelike as in *fortificata*; processes of pronotum distinctly forwardly



Fig. 7 a, b, c Phymata fortificata H.-Sch. aa, bb, cc Phymata argentina Penn. Showing pronotum (a, aa), front of head (b, bb) and angulate edge of hind body (c, cc). Greatly enlarged. directed, but very short, toothlike (not spinous as in *fortificata*); dilatation of hind body not nearly so acutely angled or pointed as in the compared species; spines on the three anterior segments of connexivum practically of same strength in both species. Length of body 9-10 mm.

The ground colour of the females is very pale; the transversal band on abdomen brownish; the males are more brownish or rufous brownish (but not nearly so clear rufous as in the compared *Ph. fortificata*); transversal band on abdomen blackish.

Ph. argentina feeds on various insects; in one case I have seen a rather large butterfly (as far as I remember, *Colias lesbia*) captured by this species in the top of an umbelliferous plant.

The nearest ally of the new species, apart from *fortificata*, is *Ph. armata* Handl. from Brazil, but this species is much smaller (6-7)

mm), and the anterior segments of connexivum bears here only small or even indistinct spines.

Mr. Pennington, in the cited paper, lists *Ph. acutangula* Guér. from Misiones in the northern Argentine. He also describes a new Argentinian species from La Rioja, viz. *Ph. riojana* Penn. This is the smallest known *Phymata*, measuring but 5 mm. Apart from the smallness this new species may be easily recognized by the length of the head, which equals the length of the pronotum. Only a single specimen has been found, and Mr. Pennington indicates that the species may prove to be a variety of *Ph. acutangula*, to which it is closely allied.

15. On the Genus Mecidea Dall.

This genus may at once be recognized among most other Pentatomids by the extraordinary prolongation of the body, which provides the species with some resemblance to certain *Miridæ*, e. g. species of *Miris* F.

The genus only contains a small number of species. Mr. Kirkaldy lists (1909) but 7 in all: *M. indica* Dall. from India, *M. longula* Stål from America, and *M. linearis* Dall. without patria.*) The remaining species are, when the Mauritian *M. quadrivittata* Sign. is counted, African. The best known, and the stoutest, of the real Æthiopian species is *M. pallida* Stål, which also occurs in the Mediterraneans, even on the European side, on the Canary Islands and in Western Asia.

Though the genus thus is a widely spread one, the three continental species would seem to point at the Northeastern Parts of Africa as the center for the development of the genus and the dispersion of the species, and the supposition in that direction, relating the birthplace of *Mecidea*, is strengthened by the following facts. Among some Hemiptera collected by the Danish traveller, Mr. G. Kristensen, in North Eastern Africa (Colonia Eritrea and Abyssinia) were found 3 specimens of the genus belonging to 3 different species, one of which was *M. pallida*; the 2 other species are both new to science. These facts leads one to think that a thorough investigation in the part of the continent here treated of, may bring more new species to daylight and thus make sure that Æthiopia really has given origin to *Mecidea* Dall.

*) According to Dr. E. Bergroth in litt. *M. linearis* proves to be an African species.

The two new species may be described as follows:

Mecidea pallidissima n. sp.: \bigcirc . (Fig. 8 a). Resembles M. pallida Stål, but is smaller and much narrower. Very pale, and punctuation of body and extremities all over concolourous; black streaks on dorsum of venter, and small black points laterally on underside of venter completely lacking. Membrane hyaline.

Antenniferous tubercles externally ending in a minute, sharply pointed spine. Inner side of 2nd joint of antennæ basally strongly flattened-dilated; outline of the dilatation conspicuously curved (see fig.). 2nd joint of antennæ about twice as long as 3rd. Length 9,5 mm.

One \bigcirc from Colonia Eritrea.

Mecidea Kristenseni n. sp.: Q. (Fig. 8 b and c). Allied to *M. quadrivittata* Sign. Body, wing covers, three innermost joints of antennæ, and legs partially more or less densely covered with blackish punctures, which, where condensed, form the following dark, longitudinal stripes: 2 on head,

4 on pronotum, and 2 on scutellum; underside from front of propectus to anogenital segment laterally with a similar stripe, in which each of the ventral segments has a small, black point: in addition the 3rd, 4th, 5th and 6th ventral segments have a short, black, central, longitudinal line that nearly reaches base of the segments, but not nearly the apex (see fig.). Lateral sides of hemelytra broadly pale, without blackish punctures; inner part of corium brownish rose red,



Fig. 8 a Right antenna of *Mecidea pallidissima*, b R ght antenna and c underside of 3rd to 6th abdominal segments of *Mecidea Kristenseni*. Greatly enlarged.

but yellow-greenish towards base; apex of scutellum conspicuously pale between the dark red colour of entocorium. Membrane fulvous-dusky.

Antenniferous tubercles externally with a very small, suboblique spine. 2nd joint of antennæ about one and a

half times longer than 3rd, very inconspicuously dilated towards base (see fig.) – Length 9 mm. One Q from Colonia Eritrea.

The Æthiopian species except *M. linearis*, but including the Mauritian species, may be shortly tabulated as follows:

- 1. Quite pale, punctuation concolourous. 2nd joint of antennæ interiorly strongly flattened-dilated towards base. Dorsum of venter without black stripes M. pallidissima J.-Hrp.
- Ground colour pale, but punctures on body and extremities partially more or less blackish or brownish. 2nd joint of antennæ basally moderately dilated. Dorsum of venter at each side with a black stripe 2.
- 2. 2nd joint of antennæ nearly three times as long as 3rd. Body stout, 12-13 mm from tip of head to apex of membrane. The brownish punctuation somewhat inconspicuous . *M. pallida* Stål.
- -' 2nd joint of antennæ not nearly three times so long as 3rd. Body smaller and as a rule more slender, 9-11 mm long. The blackish punctuation more strongly pronounced, with tendency to form darkish, longitudinal stripes on surface of body ... 3.
- 3rd to 6th ventral segments each with a shortened, longitudinal, median, black streak. 2nd joint of antennæ one and a half times as long as 3rd. Membrane dusky. . . M. Kristenseni J.-Hrp.
- 3rd to 6th ventral segments without black, median streaks. Membrane hyaline
- 2nd joint of antennæ much longer than 3rd. Side lobes of head (juga) contiguous in front, but dehiscent at the very apex. *M. quadrivittata* Sign.
- 2nd joint of antennæ not much longer than 3rd 5.
- 5. Side lobes of head contiguous in front of tylus, but dehiscent at apex. External apex of corium rounded . . *M. Tellinii* Schout.
- Juga contiguous in front of tylus and not dehiscent apically. External apex of corium more acute M. prolixa Stål.

16. Euschistomorphus, a new Subgenus of Euschistus Dall.

In his "Nova Hemiptera Faunarum Argentinæ et Uruguayensis (Anal. Soc. Argent. T. XXXII, 1891) Dr. C. Berg describes a new, peculiar *Euschistus (longiceps)* with strongly aberrant structure of the head. The detailed and precise description is based upon a single specimen from Patagonia preserved in the Museo Nacional in Buenos Aires. Especially on account of the building of the pronotum, the new species obtains a habit much like that of *E. cornutus* Dall.

Dr. Berg remarks that a new genus could be based upon the *E. longiceps*, if the antennæ, which were lost in the type specimen, proved to show differences when compared with those of typical *Euschistus* species.

It seems as if *E. longiceps* Berg has not been recorded from anywhere since its description, but it is notwithstanding evidently a rather widely spread species. I have a little series of specimens from the Province of Mendoza (Estacion Pedregal, about 32° south. lat.), and this material enables me to declare with certainty that the building of the antennæ in no way justifies a generic separation from the other *Euschistus* species; the slight modifications one perceives, for an instance regarding the proportional length of the joints, may at most be ascribed the value of specific characters.

Neither does the *E. longiceps* show extraordinary differences in other respects. So much the more strange is the exceptional prolongation of the juga, whereby the species seems to be remarkably removed from its nearest allies, and to deserve to be regarded as the type of a new subgenus, which may be shortly characterized as follows, and I propose to name it:

Euschistomorphus n. subg.: Conspicuously differing within the genus *Euschistus* Dall. by having the juga much longer than tylus; the strongly prolonged juga contiguous in front of tylus, which is deeply inclosed.

Subgeneric type: Euschistus longiceps Berg.

It may be noted, as Dr. Berg, in his diagnosis of the new species, was not able to describe the antennæ, that they are somewhat like those in *E. cornutus* Dall., but slightly more robust, especially in the d_i ; the 2nd joint

is distinctly longer than 3rd; 4th and 5th joints comparatively short and robust (as to the proportions of the joints the antennæ seems to be liable to some variability). Colour of antennæ sordid yellowish; dispersed dark punctures very indistinct.

I have collected a single specimen of the following new species, belonging to the above described subgenus, at Chacras de Coria near the town of Mendoza and close to the foot of the Cordilleras on Jan. 12th 1907:

Euschistus (Euschistomorphus) albidus $n. sp. \varphi$. (Fig.9, 3a): Quite pale yellowish all over; punctuation for the greatest part concolourous. Pronotum with two very small blackish points in the middle not far from frontal



Fig. 9. 1a *Euschistus longiceps*; 1b, same, upper side of head. 2a *E. cornutus*; 2b, same, upper side of head. 1b and 2b much more enlarged than 1a and 2a. 3a *E. albidus*, outlines of body.

margin; the margin of scutellum near apex with a similar minute point on each side. Upper surface of body rather finely and moderately densely punctured; pronotum backwards, scutellum and hemelytra with dispersed small callosities. Prosternum with some blackish, not very strong punctures; meso- and metasternum with strong and coarse black punctures in the vicinity of the orifices. Hind margin of segments of venter with a row of concolourous, irregular callosities, which are rather small and indistinct, with intermingled brownish points; remaining part of venter unevenly but finely concolourously punctured. Legs sparsely spotted with brownish points. Head rather long, moderately narrowed towards apex; tylus inclosed by the juga as in *E. longiceps*. Antennæ thin and slender; 1st and 4th joints the shortest, subequal in length, 2nd joint the longest. Antelateral margins of pronotum moderately sinuous, indistinctly crenulated in front; the lateral and outstanding angles stout and rather acute, slightly projecting upwards and forwards. Just behind the 2 blackish points in front of pronotum an indistinct, straight, transversal line that separates between two kinds of punctuation (in front of the limit no small callosities, as are found behind it). Hind angles of segments of connexivum somewhat prominent, but obtusely rounded. Apex of scutellum rounded, tongue-shaped. Length of body 7 mm.

In the type specimen the head, anterior part of pronotum and of scutellum, together with the pronotal lateral angles, are a little more yellowish than the rest of upper surface. A very fine and short brownish line is to be seen, where the main rib of the hemelytra disappears backwards. On account of its whitish colour the specimen would seem to be immature, but it is not so, as it is quite hardened.

As neither *E. longiceps* nor *E. cornutus* have been figured, I delineate (fig. 9) their "habitus" respectively, together with details concerning the structure of the head. The outlines of the new species are also given (fig. 3a).

17. Some Notes on Conorhinus Lap.

Various species of the genus *Conorhinus* Lap. have for a very long time been regarded with great detest on account of their attacking both cattle and human beings to suck blood. These large and conspicuous bugs are mainly found in South America, where they are considered an annoying pest, and especially so the common *C. infestans* Klug (*C. Renggeri* H. Sch.), which is the species most commonly alluded to in statements as to blood-sucking, large Hemiptera, and which bears various popular names, as a rule meaning a sort of "drawingpins", among the population in the southern countries . of South America.

In the Argentine Republic, for example the Andine Provinces, one finds a series of species, of which C. infestans is common all over, while the other species are more or less scarce and evidently do not cause so much injury. In the districts, where the writer collected, the C. infestans was mainly found, often very abundantly, under sundried cow manure in the "camp", more scarcely under bark of trees, and the like. The cattle on the open ground suffer very much from the attacks of the large blood-suckers, but these also frequently seek their victims in other camps; from their hiding places many of the bugs fly to human dwellings, and, as they are nocturnal in their habits, they here attack sleeping persons. As soon as the day dawns, the individuals hide themselves in crevices, in the folding of curtains and mosquito-nets, and so forth, and remain here more or less motionless during the day time; in the following night they will vigorously attack again. It may be noted that mosquito-nets will not protect anyone against any Conorhinus, as it will force its way beneath the net on the floor. Sometimes the bugs will take a rather curious place of concealment. I one day, for an instance, found nearly a dozen specimens in a case containing my photographic camera.

It has often been maintained that the sting by the bug's beak is felt as strongly painful; this may be the case with other species of *Conorhinus*, but it certainly does not hold good regarding the *C. infestans*, from which I myself have suffered attacks, and I have once taken an individual in the very act on my head, but I felt no pain. It would also seem to be somewhat riskable for the *Conorhinus* to sting painfully, as the bug then would be instantly disturbed and could not get any meal without great trouble (I shall never forget my first specimen of another Reduviid Hemipteron, *Sirthenea stria F.*, which stung me very badly, defending itself, when I imprudently seized it). But if the attack by the *Conorhinus* seems to be rather insignificant in the first turn, things become important "the day after". The result of the assault is namely a gigantic and very painful swelling, which will not fade away till more days after.

With some few exceptions the *Conorhinus* species are Central or South American. A little more than 20 species are listed in Lethierry & Severin's Cat. Gen. d. Hemipt.

18. New Argentinian Jassidæ.

Tettigonia (Kolla) santarosæ n. sp. $\Im Q$. Apparently allied to the *bifida-geometrica* group, but differently coloured.

Front of head bluntly rounded or very indistinctly angulate. Vertex short, much shorter than basal width and distinctly shorter than length of pronotum. Ocelli situated a little nearer to eyes than to base of vertex.. Sides of pronotum rounded.

Last ventral segment of female much longer than the preceding, posterior margin somewhat angularly produced and rather sharply pointed in the middle. Plates of male short, not nearly so long as the ultimate segment and much shorter than the pygofers, triangular, with sharply pointed tips.

Colour very variable, from pale to blackish brown or even quite blackish. Frons, except in quite black specimens, with a pale, very finely punctured median stripe, and with 8-9 brownish or blackish arcs. Vertex variegated with blackish or brownish or confluently dark, but the very apex of vertex always with a sharply defined, pale spot (in light specimens forming the upper end of the pale median line of frons); behind each ocellus, at the posterior margin of vertex, a round, black point, which is perceptible, even when the vertex is confluently darkish brown. Pronotum irrorated with brownish, most roughly so near front margin. Hemelytra light brownish, with ivory-white nervures, or blackish brown with nervures concolourous, except the white stems of the nervures at the shoulders, rarely quite blackish. Legs pale, with more or less distinct, brownish streaks. 2 basal joints of antennæ yellowish.

Length (from apex of head to tip of hemelytra) $4\frac{1}{2} - 5\frac{1}{2}$ mm.

7 specimens (5 \bigcirc \bigcirc , 2 \bigcirc) from Santa Rosa, Mendoza, Argentina.

Chlorotettix neotropicus n. sp. \bigcirc . Allied to Chl. lobatus Osb. Uniformly very pale yellowish, shining (fresh specimens probably with a greenish tinge). Hemelytra subhyaline towards apex. Vertex with a narrow and not very distinct, curved, transversal, brownish line between eyes and behind front margin of head (this line is running exactly concentrically to front margin of pronotum, but not exactly so to front margin of vertex).

Head distinctly wider than pronotum. Face rather flat. Vertex rounded in front, a very little longer at middle than next to eyes. Pronotum strongly arched in front.

Last ventral segment in female with hind border regularly incurved; side lobes of the segment prominent, with rounded tips.

Length from front of head to apex of hemelytra $5\frac{1}{2}$ – 6 mm.

 $2 \bigcirc \bigcirc$ from Santa Rosa, Prov. Mendoza, Argentina.

I have referred this species to the genus *Chlorotettix* of Van Duzee, to which it certainly belongs, but I am not sure that this genus is sufficiently distinct from the old genus *Thamnotettix* to be maintained for the future.

Thamnotettix Bergrothi n. sp. \bigcirc . A characteristically marked species. Ground colour light yellowish, spotted with brownish and black. Hemelytra hyaline, nervures brown.

Vertex from eye to eye with a curved, brownish transversal line, which is sharply limited in front, but less sharply so backwardly; from this line, near each eye, an oblique, subtransversal, deeply black streak is rising and continues to the front margin of the pronotum, not far from the median line; on the rounded transition from vertex to frons two widely separated, roundish, deeply black spots. Front of pronotum on each side, behind innerside of eye, with a black point. Basal angles of scutellum triangularly black; between the black angles two black points. Legs pale.

Hind margin of last ventral segment of female entire, slightly incurved.

Length 5 mm.

Described from a single female from Santa Rosa, Province of Mendoza, Argentina. Dedicated to Dr. E. Bergroth of Ekenäs in Finland.

Thamnotettix inconspicuus n. sp. \bigcirc . Ground colour pale yellowish; vertex, pronotum and scutellum irrorated with pale brownish. Cells of hemelytra partly hyaline, partly with whitish-hyaline centers; claval nervures whitish, narrowly bordered with brownish; nervures of corium and membrane brownish, partly more or less infuscating the outsides of the cells. Legs pale; hind femora on the outer edge with about 8 black points.

Last ventral segment of female very much longer than the preceding segment; posterior margin of the last segment with rounded and somewhat prominent lateral lobes, broadly, but not deeply emarginate from these to a central lobe, which is notched in the middle.

Length 5 mm.

One female from the Province of Mendoza, Argentina.