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THREE NEW SPECIES AND ONE NEW GENUS OF HETEROTHRIPIDAE (THYSANOPTERA) FROM SOUTH AMERICA

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The three new species of Heterothripidae from the Andean region of South America described herein bring the total of the New World members of the family to approximately 54 species. Only a few Old World and fossil species are also known.

A new genus, *Scutothrips*, is proposed for those species, formerly in *Heterothrips* Hood, which bear a triangular metascutum. This type of scutum occurs in the advanced heterothripine genus *Aulacothrips* Hood, and appears in some of the species in Heliothripinae (Thripidae), demonstrating their possible evolutionary alliance.

Alternatively, *Scutothrips* could have been made a subgenus of *Heterothrips*, as was done in the case of *Protemnothrips* Hood and *Lenkothrips* de Santis, but it seems more forthright to designate the category as a full one in view of the distinctive head and notable triangular metascutum. The subgenus *Protemnothrips* is based on a rather minor characteristic, that is the shortening of the last three antennal segments (not fused as stated by Bailey and Cott 1954), whereas the subgenus *Lenkothrips* is based on a more distinctive feature, the radically different form of the sensoria on antennal segments III and IV (inverted U shaped rather than circumapical), an extraordinary characteristic that also could reasonably allow *Lenkothrips* to be made a full genus.

Holotypes of the new species are deposited in the collections of the Illinois Natural History Survey (INHS).

Fig. 1. *Scutothrips incaensis*, female. Head and prothorax, dorsal aspect.

Scutothrips new genus

Head wider than long, deeply indented between the eyes, cheeks abruptly extended laterally beyond eyes tapering inward basally. Ocelli placed between eyes, fore ocellus not extended up to anterior eye margin. Antennae each 9 segmented, segments III and IV each with a circumpolar band of numerous small circular sensoria, segments VII to IX together longer than VI. Mouth cone bluntly rounded, maxillary palps 3 segmented.

Pronotum longer than head, anterior and posterior margins each with 2

pairs of stout, short setae. Mesoscutum transversely striate to nearly hexagonally reticulate. Metanotum with a marked, differentiated, triangular scutum, which is seemingly elevated above the rest of the sclerite; border of triangle thickened and fringed with microtrichia. All tarsi 2 segmented, fore tarsi each with cocoon-breaking hooks. Fore wings swollen basally, narrowed and nearly parallel sided in apical ⅔, fringe cilia straight.

Abdomen with segment I well separated by membrane from segment II. Most tergites with median pair of setae spaced fairly closely together. Lateral regions of tergites I to VII with posterior microtrichia fused at base forming numerous platelets. Abdominal segment X long and pointed.

Males, where known, with abdominal sternites III to VIII each with a transverse elliptical, glandular area.

Type-species: Scutothrips incaensis new species.

This genus is similar in most respects to *Heterothrips* Hood, differing from it mainly by having the cheeks strongly angulate behind the eyes and in having a triangular metascutum. In the latter respect, *Scutothrips* shows similarity to *Aulacothrips* Hood which also has a differentiated triangular metascutum. Furthermore, this type of scutum is found in some genera in the Heliothripinae (Thripidae), as for example *Heliothrips* and *Retithrips*.

To the genus *Scutothrips* are transferred, herewith: *moreirai* Moulton, *nudus* Moulton, and *peruvianus* Hood, all of which are also from South America.

Scutothrips incaensis new species

Female (macropterous): Length, not distended, 1.6 mm. Color dark brown, darkest in head, thorax and portions of legs. Fore femora at apex, fore tibiae except at the middle along the sides, the mid tibiae at the apex, the hind tibiae at the base and extreme apex, and all tarsi bright yellow. Antennal segment I brown, segment II yellowish brown to yellow at apex, segment III yellow, segments IV to IX dark brown. Fore wings brown except for a wide clear subbasal area. Hind wings pale except for median brown streak. Body setae brown. Subintegumental pigment orange red.

Head, Figure 1, dorsally with about 6 transverse lines of sculpture posteriorly. Ocellar triangle strongly inset posteriorly from anterior margin. Antennae with segments III and IV bearing 2 circumapical rows of small sensoria, segments VII to IX together longer than segment VI.

Pronotum smooth, with only faint indications of hexagonal sculpture, and with many minute setae. Postero- and anterolateral setae small. Mesoscutum transversely striate laterally and with scale-like sculpture (modified hexagonal sculpture) medially. Metanotum with a median triangular scutum, Figure 2, containing nearly 24 scalelike markings. Fore wings with costa bearing 38 setae, anterior vein bearing 33 setae, posterior vein bearing 27 setae, scale with 6 inner marginal setae.

FIG. 2. *Scutothrips incaensis*, female. Photograph of the metascutum showing scalelike sculpture.

Abdominal tergites I to VII with lateral posterior microtrichia coalesced into platelets. Tergite I lacking median setae, tergites II to V each with a separate group of median microtrichia, tergites VI and VII with median microtrichia extending to lateral plates, tergite VIII with entire posterior margin composed of simple, closely-spaced trichia. Tergites II to VIII with a pair of closely-spaced median setae, becoming wider apart in VII and VIII. Lateral regions of abdominal tergites, except posterior margin, lacking microtrichia. Abdominal sternites II to VI posteriorly with complete row of microtrichia which are fused at base. Abdominal tergite IX with numerous small setae, tergite X with a median posterior slit that is slightly shorter than unsplit basal portion.

Male: Unknown.

Holotype: Female, Machu Picchu, Peru, July 4, 1964, M. and L. Stannard, from blue flower.

This species resembles *peruvianus* but differs in having more setae on the anterior and posterior veins of the fore wing, in having scallops rather

FIG. 3. *Heterothrips bolivianus*, female. Photograph of head and prothorax.

than transverse sculpture in the triangular metascutum, and in having antennal segment IV entirely brown, not yellowish brown basally.

Heterothrips bolivianus new species

Female (macropterous): Length, distended, 1.5 mm. General color light yellowish brown, appearing bright because of intense orange-red subintegumental pigment. Fore margin of head and legs bright yellow. Antennae entirely brown with antennal segment I slightly lighter brown. Fore wings brown except small spot near base, much as in *sericatus* Hood. Hind wing colorless with brown median streak or line. Body setae brown on brown surfaces, yellow to colorless at margins or on yellow surfaces. Wing cilia brown.

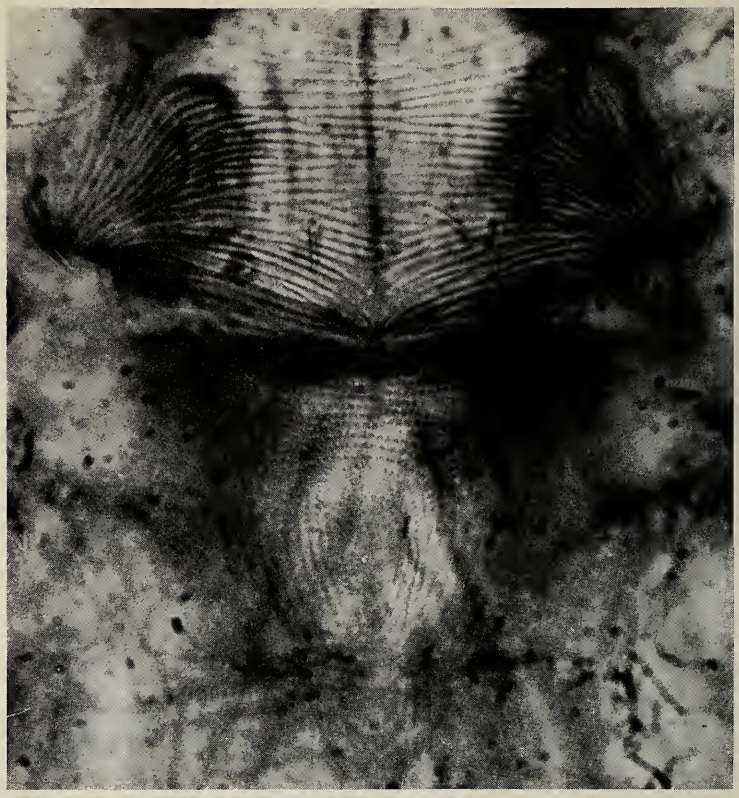

Fig. 4. *Heterothrips bolivianus*, female. Photograph of meso- and metascuta.

Head, Figure 3, with cheeks roundly curved, with about 5 to 6 lines of sculpture posteriorly. Maxillary palps 3 segmented. Antennal segments III and IV each with a circumapical band of small circular sensoria more or less arranged in a single row. Antennal segments VII to IX together longer than VI.

Pronotum subequal in length to head length, closely transversely striate with about 38 lines which occasionally anastomose, and with numerous small setae. Mesoscutum with close transverse striae, metascutum, Figure 4, with concentric closely-spaced sculpture typical of genus. Fore tarsi each with cocoon-breaking hooks. Fore wings with costa bearing 36 setae, anterior vein bearing 32 setae, hind vein bearing 26 setae, and inner margin of scale bearing 6 setae.

Abdominal tergites I to VIII with all posterior microtrichia separate,

not coalesced at base. Tergite I lacking median posterior microtrichia, tergites II to V with median portions bearing about 10 or so microtrichia and tergites IV to VIII with trichial fringe extended completely across segments. Lateral margins of tergites I to IX with microtrichia. Tergite X with microsetae on the median portion, apical slit shorter than basal unsplit portion. Most abdominal sternites with posterior fringe of microtrichia complete.

Male (*macropterous*): Length, distended slightly, over 1.0 mm. General color and structure similar to female, except for terminalia. Testes orange in color. Sternites lacking glandular areas.

Holotype: Female, Coroico, Bolivia, June 28, 1964, M. &. L. Stannard, from flowers of tree at edge of town. *Allotype*: Male, same data as for holotype. *Paratypes*: 2 females, same data as for holotype.

This yellowish-brown species differs from the other yellow-colored, South American species in having the antennae wholly brown. In the color of the wings, almost entirely brown except for a minute subbasal spot, *bolivianus* resembles *sericatus*. The latter species has much more closely spaced striae, about 62 lines, on the pronotum as compared to 38 or so lines in *bolivianus* and in having 8 inner setae on the fore wing scale as compared to 6 inner setae in *bolivianus*.

Heterothrips julius new species

Female (*macropterous*): Length, distended, 1.3 mm. General color dark brown. Apex of fore femora, base and apex of all tibiae and all tarsi yellow, rest of legs brown. Antennal segments I, II, and all of III except apex yellow, segments IV to IX brown. Subintegumental pigment red. Fore wings brown except for moderately sized subbasal white area, hind wings pale with median brown streak. Body setae brown to yellow.

Head, Figure 5, with cheeks slightly curved, dorsally with about 7 posterior, transverse striae. Antennal segments III and IV each with a circumapical band of small circular sensoria arranged in 2 rows. Antennal segments VII to IX together longer than VI.

Pronotum longer than head, nearly smooth, with relatively moderately sized setae. Mesoscutum with close transverse striae, metascutum with concentric closely spaced sculpture typical of genus. Fore tarsi each with cocoon-breaking hooks. Fore wings with costa bearing 36 setae, fore vein with 36 setae, hind vein with 26 setae, and inner margin of scale with 8 setae.

Abdominal tergites I to VIII with all posterior marginal microtrichia separate, not coalesced at base. Tergites I to V with posterior medium portion bare or with only a few trichia. Tergites VI to VIII with posterior marginal trichia complete. Lateral margins of all tergites and median portions of tergite VIII to X with microtrichia. Abdominal segment X elongate, pointed, dorsum with apical split less than ⅓ the length of the segment.

Male: Unknown.

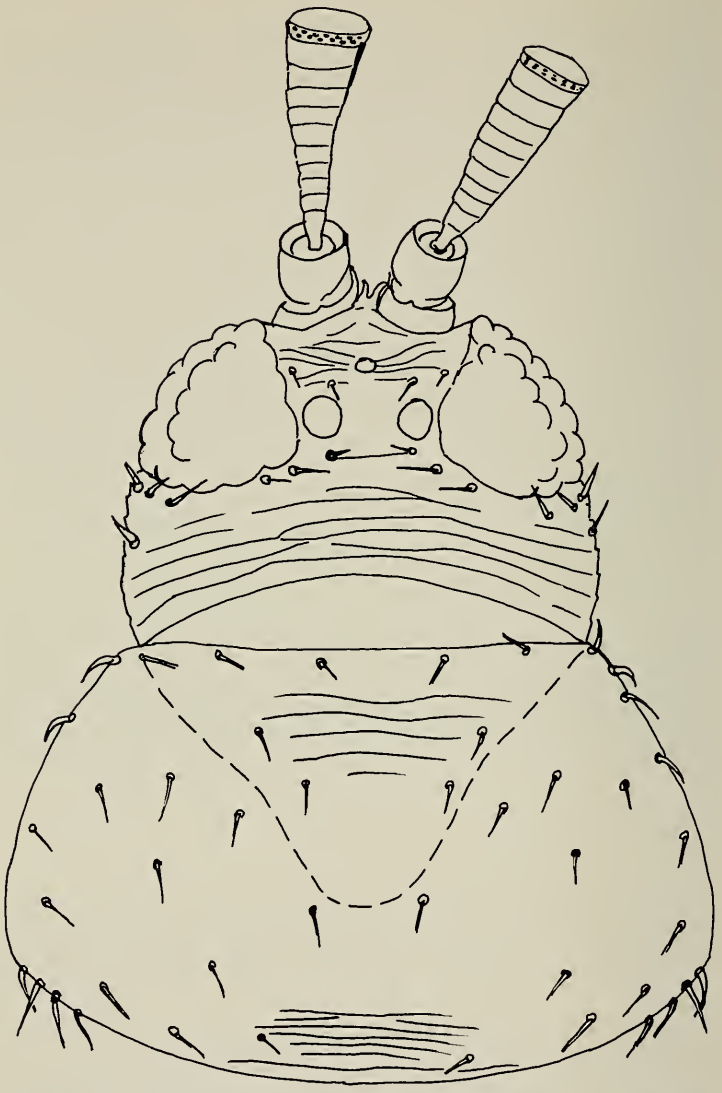

Fig. 5. *Heterothrips julius*, female. Head and prothorax, dorsal aspect.

Holotype: Female, Machu Picchu, Peru, July 5, 1964, M. & L. Stannard, beaten from vegetation along Rio Urubamba.

This species is distinguishable from the known brown South American species by the pale coloration of both antennal segments I and II. It is apparently closest in structure to *H. minor* Hood from Panama, differing from that species by having more setae on the wing veins and in having antennal segment II yellow, not brown as in *minor*.

Acknowledgments

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