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Three New Species of *Mecistorhinus* Dallas (Heteroptera, Pentatomidae)

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In making an intensive study of the pentatomid subfamily Discocephalinae, the author has found the genus *Mecistorhinus* a very difficult one to analyze. There appear to be certain duplications in color patterns, and minor variations of them, running through a number of related species, a fact that leads to considerable confusion in determination and uncertain identification. Moreover, there is a paucity of other satisfactory physical and anatomical characteristics which otherwise might enable one readily to separate the different species. The relative lengths of antennal segments, particularly segment II in proportion to segments I and III, are probably fairly good differential characters, yet not so satisfactory as one might wish. Likewise, the degree of dorsal and ventral convexity of the body is somewhat valuable, but rather vague, as the concept of degree varies with each individual author and reader. Probably the most sound basis for the study of speciation will be found in the comparative morphology of the male genitalia, in which sufficient differences in build are more clearly defined than in other somatic characteristics. In the lack of a comprehensive knowledge of this aspect, however, the following descriptions must necessarily employ the previously accepted characters found in color patterns, varying degrees of convexity, differential antennal segmental ratios, and so forth.

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The ratios mentioned in the descriptions are micrometric measurements made through a binocular microscope using a $\times 2$ objective and a $\times 9$ ocular fitted with a micrometer scale divided into 200 linear units. They are not in terms of millimeters except as specified for holotypes and allotypes.

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***Mecistorhinus lineatus*, new species**

Ovate, moderately small in size for the genus; very mildly convex above and very glossy, almost flat below and semi-glossy; over-all color fulvous, being a combination of sordid yellow and ferruginous markings; hemelytra striped longitudinally with alternating ferruginous and dull yellow, narrow bands.

Head seven-eighths of the length of the pronotum and as long medianly as wide between the eyes (70 by 70); vertex and tylus dark ferruginous, almost castaneous; disc flat, fulvous, with scattered ferruginous punctures; margins fuscous, abruptly obtusely sinuate before the eyes and then parallel to a broadly rounded apex, not reflexed. Ocelli small, red, and two and a half times as far apart as each ocellus is from its eye; eyes large, castaneous, and protruding. Antennae about three-fourths of the length of the body, segment I attaining or slightly exceeding the apex of the head; segment I fulvous, segments II, III, and IV, and basal half of segment V fuscous to piceous, apical half of V sordid yellow; segmental ratios: 30/18/98/95/97, i.e., segment II much shorter than I and less than one-fifth of the length of III; segments III, IV, and V subequal.

Pronotum slightly more than two and a half times as wide across the humeri as long medially (220 by 80); anterolateral margins straight, mildly subcarinate, and very weakly reflexed; humeri not pronouncedly tumid and concolorous with the disc, the angles roundly rectangular and not at all produced; a shallow transverse sulcus just behind the central portion of the anterior margin; disc fulvous yellow, with coarse, irregular, ferruginous to castaneous, incomplete reticulations, especially evident on the posterior half; the puncturation is restricted to the reticulations; the transhumeral portion castaneous, the antetranshumeral area lighter.

Scutellum about one-third longer than wide at the base (190 by 145), basal angles weakly impressed and ferruginous; disc yellow-fulvous, with coarse, irregular, ferruginous reticulations on the basal third, these then continued posteriorly as three to five ill-defined, subparallel

stripes which become paler and evanescent towards the apex; the frenum ends at about the middle, the margins from there on sub-parallel, the apex moderately rounded. Hemelytra provided with alternating longitudinal, very narrow ferruginous and sordid yellow stripes; usually there are seven such stripes, three ferruginous and four yellow; clavus sordid yellow, claval vein ferruginous and bordered on each side with a single row of ferruginous punctures; discal vein ferruginous and similarly bordered on each side with ferruginous punctures; other punctures restricted to the darker areas and rather evenly distributed; a small, elliptical, light castaneous, discal spot present; the narrow lateral margin pale; the apical margin slightly concave, the external angle acute; membrane transparent, very pale brown, exceeding the abdomen and possessing six or seven concolorous veins. Connexivum well exposed; each segment provided with a narrow, median, longitudinal band of closely placed ferruginous to fuscous punctures, entad and ectad of which the segments are impunctate, sordid yellow; apical segmental angles rectilinear and not produced.

Venter sordid yellow to fulvous, central area impunctate; thoracic pleura provided with medium-sized ferruginous and fuscous punctures, these denser laterally; evaporatorium dull reddish brown, obscurely rugose and extended onto the posterior half of the mesopleuron. Abdominal margin, up to and including the spiracles, irregularly fusco-ferrugino-reticulate, the punctures fine and restricted to the reticulations; spiracles castaneous; some shallow, orange punctures scattered between the spiracles and the central impunctate portion; abdominal longitudinal furrow obsolescent beyond the second visible segment. Legs fulvous, the femora marmorate with castaneous apically, the tibiae with obsolescent ferruginous spots on the outer surface; tarsi concolorous. Rostrum fulvous, its midline sanguineous, the apex fuscous and reaching the middle of the third abdominal sternite.

Basal plates of the female genital valves, each slightly wider than long (100 by 90) and, taken together, transversely elliptical, their apical margins somewhat truncate.

Described from three specimens.

HOLOTYPE: Female: 9.75 mm. long; 5.8 mm. wide across the humeri; 7.0 mm. wide across the greatest abdominal diameters; Rio Marañon, Peru; October 5, 1925; H. Bassler, collector; deposited in the American Museum of Natural History.

PARATYPES: Two females: Rio Santiago, Peru; September 4, 1924; H. Bassler, collector; both deposited in the American Museum of Natural History.

Owing to the very short second antennal segment this species apparently is allied to *Mecistorhinus sepulcralis* (Fabricius) and *Mecistorhinus tripterus* (Fabricius), but its lineated appearance readily separates it from either of these two. Unfortunately the lack of male specimens does not permit comparison of this species with others in this subgeneric division. The pale color, the distinctive radiating stripes on the hemelytra, and the general reticulated nature of the darker markings on both the dorsal and ventral surfaces of the body immediately separate this species from any others in the genus. Its relatively small size is yet another distinctive characteristic.

***Mecistorhinus panamensis*, new species**

Ovate, quite convex and glossy above, and, for the genus, convex below more than the average, there matte to semi-glossy. Sordid yellow to fulvous, with a liberal overcovering of dark castaneous and reddish blotchings and markings; a distinct, inverted, T-shaped pattern of dull yellow and pale red apparent through the median portion of the pronotum and across the base of the scutellum. Venter, for the most part, reddish brown, fulvous and castaneous; sometimes the tumid portion of the mesosternum fuscous.

Head porrect, seven-tenths as long as the pronotum and somewhat longer medially than wide between the eyes (92 by 803); margins abruptly sinuate before the eyes (the sinus forming almost a right angle), there fuscous and slightly reflexed, then parallel to a broadly rounded, paler apex; vertex and tylus, for the most part, castaneous to fuscous, the remainder of the disc irregularly mottled with castaneous to fuscous shades, the punctures ferruginous and rather evenly distributed. Antennae about two-thirds of the length of the body, dark fuscous to piceous; segment I not reaching the apex of the head; upper surface of segment I, the joints of all the segments, and the apical third of segment V sordid yellow or dull ivory; segmental ratios: 35/40/85/90/90, i.e., segment II somewhat longer than segment I and about half as long as segment III; segments III, IV, and V subequal.

Pronotum more than twice as wide across the humeri as long medially (310 by 130), its anterior face mildly declivous; surface slightly above the average in convexity, glossy; punctures ferruginous to fuscous, rather widely spaced and moderate in size; a deep, transverse, pitted sulcus just behind the central portion of the anterior margin, ending abruptly in line with the inner border of the eyes; anterolateral margins straight, very narrowly subcarinate and weakly reflexed; disc marmorate sordid ivory to fulvous and castaneous, the median

portion bearing a broad longitudinal band of pale color, usually with some reddish tints; humeri impunctate, subcalloused sordid ivory or pale yellow; slightly tumid.

Scutellum convex more than the average near the base, about one-third longer than wide at the base (260 by 200), the frenum ending at the midpoint, then the margins parallel to a broadly rounded apex; color pattern more liberally marmorated than the pronotum, the punctures ferruginous, gradually becoming smaller and denser from base to apex; the base provided with a broad, transverse band of paler color which unites with the median longitudinal band of similar color on the pronotum to form an inverted T-shaped color pattern across these two parts. Hemelytra rather uniformly punctured, coarsely marmorated with fulvous blotches basally and apically, leaving a darker central area dull brown to castaneous; apical margin very weakly bisinuate, almost straight, the external angle acute and attaining the apical margin of the sixth tergite; membrane distinctly exceeding the length of the body, hyaline light brown, darker at the base and fading apically, with five or six concolorous, wavy, subparallel veins which become evanescent towards the margin. Connexivum moderately exposed, the incisures broadly bordered with fuscous; a small, elongated, yellowish spot near the margin of each segment, the central portion of each segment ferruginous to red and there punctured; apical segmental angles rectilinear and not produced. Tergum rich fulvous, almost testaceous.

Venter paler centrally than laterally. Thoracic pleura coarsely and densely ferrugino- to fusco-punctate; evaporatorium distinctly rufescent, coarsely rugose, large and encroaching on the posterior third to half of the mesopleuron. Rostral segment II subequal to segments III and IV taken together, its apex reaching between the mesocoxae and metacoxae. Coxae, trochanters, and basal thirds of the femora pale fulvous, the femora gradually becoming densely conspersed with castaneous to fuscous dots apically; tibiae long-setose, fulvous and bi-annulated with castaneous or fuscous bands; tarsi more or less concolorous fulvous. Abdomen rufescent centrally, castaneous laterally, the extreme margin narrowly nitidous; punctures becoming finer and denser laterally; a minute, calloused, sordid ivory point on each segment between the spiracles and the lateral margin; central longitudinal furrow shallow and broad, nearly reaching the base of the sixth abdominal sternite.

Apical margin of the male genital segment shallowly and widely U-shaped centrally and obliquely truncate laterally; submarginal disc

impressed, the ventral limit of the impression provided with a transverse dense brush of golden yellow hairs; this pile continued into the cavity of the segment and there lining the inner surfaces of the large, retrorse, uncurved, semi-articulated apical lobes and covering the outer surface of the proctiger; heads of the parameres (claspers) extending beyond the apical margin of the segment, prominent and broadly trilobulate, the apices of the lobules acute, the inner one reflexed laterally, the outer ones reflexed antrorsely. Basal plates of the female genital valves each broader than long, their apical margins truncate.

Described from 14 specimens.

HOLOTYPE: Male: 13.5 mm. long (to the tip of the elytral membrane); 7.5 mm. wide across the humeri; Barro Colorado, Canal Zone; January 24, 1941; K. W. Cooper, collector; deposited in the American Museum of Natural History.

ALLOTYPE: Female: 14.5 mm. long (to the tip of the elytral membrane); 8.0 mm. wide across the humeri; Barro Colorado, Canal Zone; January 2, 1955; Franz Schrader, collector; deposited in the American Museum of Natural History.

PARATYPES: Males (10): Gatun Lake, Panama; September 4, 1931, and October 15, 1931 (two). Chiva Chiva, Canal Zone; December 28, 1944, and May 7, 1945 (two). Barro Colorado, Canal Zone; December 26, 1940; January 16, 1941; May 24, 1957; June 12, 1958 (six). Females (two): Barro Colorado, Canal Zone; January 13, 1955, and Colon, Canal Zone; no date. All paratypes deposited in the American Museum of Natural History.

The size and greater than average dorsal convexity exhibited by this species suggest the body form and proportions of *Mecistorhinus melanoleucus* (Westwood), yet the proportionately greater length of antennal segment II (in relation to segment I), and the proportionately lesser length of segment III, immediately separate it from the *melanoleucus-tripterus-sepulcralis* complex of species. In this respect it is more similar to *Mecistorhinus marmoratus* (Erichson). However, the color pattern matches that given by Westwood for his *punctiger* (*tripterus*), in part by Walker for his *centralis* (*tripterus*), and resembles the figure shown by Distant (*Biologia Centrali-Americana*, pl. 5, fig. 3) for the species accepted as being *tripterus*. The construction of the male genitalia in this new species separates it from all others in the genus with which I am familiar.

***Mecistorhinus* (*Antiteuchus*) *fuscus*, new species**

Ovate, large, robust, and glossy; over-all color above dark fuscous, almost piceous, below reddish castaneous to fuscous; very convex

above, especially about the basal scutellar area, much less convex below. Punctured and pitted above, the pits in many specimens coalesced to give a subfoveolate appearance to the surface.

Head porrect, about four-fifths of the length of the pronotum and three-eighths longer medianly than wide between the eyes (110 by 80); margins abruptly, obtusely sinuate before the eyes, then slightly divergent, the apex semicircular; disc, including the vertex, coarsely rugose; margins not reflexed. Ocelli prominent, about three times as far apart as each is from its eye; eyes reddish fuscous, large, and protruding. Antennae robust, not quite reaching the middle of the scutellum; segment I not at all reaching the apex of the head; segments I and II and the basal half of segment III dark red, the apical half of III, all of IV and V sordid ivory; segmental ratios: 40/30/95/85/90, i.e., segment II one-fourth shorter than I and less than one-third of the total length of III.

Pronotum two and a half times as wide across the humeri as long medially (350 by 155); anterolateral margins straight; humeri slightly tumid, the angles roundly rectilinear; posterior margin straight; a pronounced, deep, transverse sulcus just behind the central portion of the anterior margin, ending abruptly in line with the inner margins of the eyes and there subfoveolate; this sulcus coarsely, deeply, and irregularly punctured and pitted; a few, if any, paler markings at the central posterior portion of the disc.

Scutellum somewhat longer than wide at the base (290 by 230), quite convex, especially at the basal half; punctures and pits deeper, denser, and more congested laterally than centrally; a few irregular, vermiculated, paler markings widely distributed; each basal angle provided with a shallow but recognizable fovea; the frenum ends past the middle, the margins from there onward subparallel for a distance, then converging to an angular apex. Hemelytra provided with clusters of shallow pits on the embolium and bases of the corium and clavus; remaining portions of corium and clavus coarsely and deeply punctured; apical margin weakly bisinuate, the apical external angle acute and reaching the posterior margin of the sixth tergite; membrane smoky brown, the inner basal portion somewhat paler; six or seven subparallel, slightly darker veins present, these ending a considerable distance from the apical margin of the membrane. Connexivum well exposed, concolorous reddish fuscous, segments IV and V evenly and finely punctured, the others irregularly so. Tergum dark fulvous to ferruginous.

Venter reddish fulvous or pale castaneous centrally, darkening to reddish fuscous to fuscous laterally; thoracic pleura densely and

coarsely punctured; evaporatorium large, including the posterior half of the mesopleuron, concolorous with the supporting plates and transversely rugose. Coxae fulvous; the remaining portions of the legs concolorous dark red, neither annulated nor stippled. Rostrum fuscous, the apex reaching the fourth abdominal segment. Abdominal disc glossy centrally, pale castaneous and impunctate; laterally infuscated, there matte and finely and densely but shallowly punctured; median abdominal furrow broad and shallow, extending to the sixth sternite; spiracles piceous.

Male genital segment large, the apical margin shallowly and widely U-shaped centrally and obliquely truncate laterally; the submarginal disc broadly impressed; lateral apical angles provided with a stout, retrorse, semi-articulated, fuscous lobe, the inner surface of which is moderately concave and the margins pilose. Parameres (claspers) stout, the heads unevenly rectangular, their outer (lateral) faces concave and slightly exceeding the apical margin of the segment, partially obscuring the truncated lateral margins there.

Described from two specimens.

HOLOTYPE: Male: 15.0 mm. long; 9.1 mm. wide across the humeri; Maracay, Venezuela; June 5, 1945; deposited in the American Museum of Natural History.

PARATYPE: Male: Rolandia, Parana, Brazil; April, 1947; A. Maller, collector; deposited in the American Museum of Natural History.

The very dark fuscous, almost piceous, appearance of these specimens, which come from two widely separate localities, readily distinguishes them from their close allies, the closest of which is probably *Mecistorhinus variolosus* (Westwood). In addition, the differences in antennal coloring and segmental ratios, the concolorous connexivum, and fuscous puncturation on the ventral abdominal margin are characteristics whereby this species is differentiated from others in the subgeneric (*Antiteuchus*) complex.