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New Exotic Crane-Flies (Tipulidae: Diptera). Part XVIII¹

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The preceding part under this general title was published in ENTOMOLOGICAL NEWS, Vol. 80 (5): 125-130. At this time I am describing three species of the genus *Hexatoma* Latreille from India, taken in Assam by Dr. Fernand Schmid and in South India by Mr. P. Susai Nathan, as well as a single species of the genus *Nephrotoma* Meigen, collected in Papua by Dr. John Wallace Boyes. The types of the novelties are preserved in my personal collection except where indicated otherwise.

Nephrotoma boyesi, NEW SPECIES

Head orange, region of the occipital brand with a large quadrate brown area, its anterior angles farther produced to attain the eyes; mesonotal praescutum light yellow with three conspicuous stripes, the central one broader, intensely polished black, its margins and the lateral stripes opaque black; scutum yellow, each lobe with two confluent opaque black areas; posterior sclerites of notum and the pleura yellow patterned with darker; wings weakly infuscated, restrictedly patterned with darker, cell *Sc* brown; abdominal tergites bicolored, yellow, the posterior borders blackened; male hypopygium with posterior margin of tergite produced into two approximated compressed-flattened blades that are provided with numerous blackened spinoid setae, the lateral armature of the plate including two or three strong blackened points; inner dististyle with posterior crest extended backward into a flattened glabrous blade; eighth sternite with posterior border broadly emarginate, lateral lobes obtuse, provided with abundant setae.

Male.—Length about 14.5 mm; wing 12.5 mm; antenna about 4 mm.

Female.—Length about 15 mm; wing 13 mm.

Frontal prolongation of head narrowly orange above, yellow on sides; nasus elongate, with conspicuous black setae; palpi obscure yellow, outer half of terminal segment blackened. Antennae with scape obscure yellow, pedicel dark brown, flagellum

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black; flagellar segments of male with conspicuous basal enlargements. Head orange, region of the occipital brand with a large quadrate dark brown area, the anterior angles farther produced laterad to attain the eyes where the color is more blackened; sides of posterior vertex and occiput with conspicuous black setae.

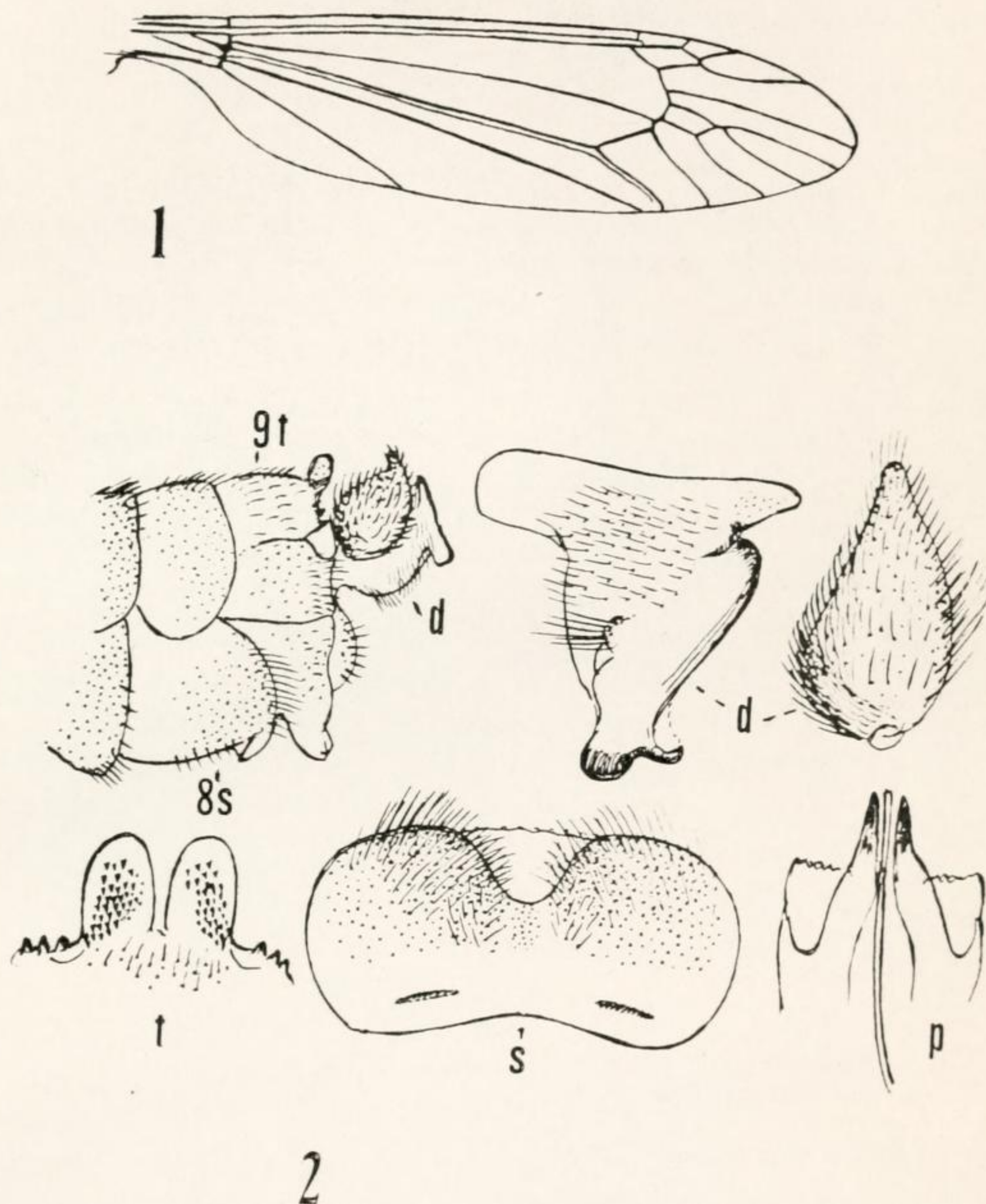


FIG. 1. *Nephrotoma boyesi*, new species; venation. FIG. 2. The same; details of male hypopygium. (Symbols: *d*, dististyles; *p*, phallosome; *s*, 8th sternite; *t*, 9th tergite.)

Pronotal scutum light yellow, sides and the scutellum blackened. Mesonotal praescutum with ground light yellow, with three conspicuous stripes, central area broader, intensely polished black, the borders opaque black, very narrowly behind, broader on anterior half, gradually widened anteriorly and becoming confluent; lateral stripes opaque black, at anterior end with a paler brown spot that does not attain the margin; central point of suture with a blackened V-shaped mark; scutum light yellow,

each lobe with two confluent dull black areas; scutellum dull black, parascutella paler except along the elevated posterior border; mediotergite yellow, posterior third with two contiguous polished black areas that are bordered by opaque black, pleurotergite orange dorsally, katapleurotergite light yellow, blackened beneath adjoining the halteres; mediotergite with conspicuous erect black setae. Pleura yellow, anepisternum and ventral sternopleurite with light brown markings, the former larger; a narrow transverse more blackened band between the mesepisternum and pteropleurite. Halteres light brown, base of knob slightly more darkened, apex slightly whitened. Legs with coxae and trochanters orange; fore femora black, bases very narrowly brightened, middle and hind femora paler brown; tibiae light brown, tips narrowly blackened; tarsi brownish black to black, claws of male toothed, microscopically hairy. Wings (Fig. 1) weakly infuscated, prearcular and costal fields more yellowed, including cell *C* and the narrow anterior borders of cells *R* and *R*₁, cell *Sc* darkened; stigma dark brown, basal section of *R*₄₊₅ with a very narrow brown cloud; veins brown. Stigma with about eight strong trichia. Venation: *Sc*₁ ending shortly beyond origin of the short oblique *Rs*; cell *M*₁ short-petiolate, the stem longer in the holotype, nearly equal to *m*; *m-cu* on *M*₄.

Basal abdominal tergites bicolored, yellow, posterior borders blackened, narrow and intense on first segment, more extensive and slightly polished on outer segments, gradually increasing in amount, on outer four segments forming a solidly blackened ring, terminal segment more brightened in both sexes; sternites more obscure yellow. Ovipositor horn-yellow, including the dorsal shield, ventral shield black. Male hypopygium (Fig. 2) with posterior border of tergite, *t*, produced into two approximated erect compressed-flattened blades that are provided with numerous blackened spinoid setae, lateral armature of tergal plate with two or three small strong blackened points. Outer dististyle, *d*, broad, the greatest width more than one-half the length, apex extended into a relatively short point; inner style with posterior crest produced behind into a flattened glabrous blade, the apex obtusely rounded. Phallosome, *p*, with gonapophyses appearing as flattened yellow blades subtending the slightly longer blackened aedeagus, their apical borders microscopically roughened. Eighth sternite, *8s*, with posterior border broadly emarginate, the incisure filled with pale membrane, lateral lobes broadly obtuse, with abundant moderately long setae.

Habitat.—NEW GUINEA. *Holotype*: ♂, Wau, Papua, altitude 3,600 feet, June 7, 1968 (J. W. Boyes). *Allotopotype*: ♀, with the type. Holotype in Canadian National Collection, Ottawa; allotype in Alexander Collection. Submitted for identification by Dr. Herbert J. Teskey, of Ottawa.

The species is dedicated to Dr. John Wallace Boyes, distinguished student of cytology and genetics, who collected the material in 1968 while on a cytological expedition to many countries in the Old World Tropics. The species is distinguished from all other regional members of *Nephrotoma* by the body coloration, especially of the head, and in all details of the male hypopygium. The structure of the ninth tergite in the male is much as in two species of the genus in South India, *Nephrotoma fletcheriana* Alexander, and *N. kodaikanalensis* Alexander, which have the other hypopygial characters and the body coloration quite different from the present fly.

Hexatoma (Eriocera) glabricornis, NEW SPECIES

Size medium (wing of male less than 10 mm); general coloration of head and thorax brownish black, pruinose; antennae of male very long, exceeding two and one-half times the wing, black, flagellar segments virtually without vestiture; femora brownish yellow, tips narrowly darkened; wings faintly tinged with brown, veins behind costa virtually glabrous.

Male.—Length about 8 mm; wing 9.3 mm; antenna about 25 mm.

Rostrum much reduced, brown; palpi very small, brown. Antennae of male very long, exceeding two and one-half times the wing; scape light brown, darker above, pedicel very small, yellow; first flagellar segment brownish yellow on about the proximal third, remainder of antenna black; flagellar segments very long-cylindrical, virtually glabrous, with very few small scattered stout setae, other vestiture virtually lacking, not long and erect as in *prolixa*. Head brownish gray, clearer gray behind, with sparse long pale setae; vertical tubercle very large, subglobular, with a capillary darkened central vitta, orbital region on either side submembranous, buffy.

Pronotum and cervical region concealed. Mesonotum blackened, gray pruinose; praescutum with three brown stripes, the broad central one with a capillary blackened vitta, lateral and humeral borders with very long pale setae; posterior sclerites pruinose, centers of scutal lobes and posterior half of mediotergite with the pruinosity very sparse to appear blackened. Pleura brownish gray, more darkened above, metapleural region clearer gray. Halteres with stem yellow, knob dark brown. Legs with coxae brownish gray, without conspicuous setae; trochanters pale brown; femora, tibiae and basitarsi brownish yellow, tips narrowly darkened, remainder of tarsi brownish black. Wings faintly tinged with brown, prearcular and costal fields more brownish yellow; stigma elongate, slightly darker than the ground; veins pale brown, cord and vein R_{4+5} darker brown. Veins behind costa virtually glabrous, including R , distal section of R_5 with a few scattered trichia. Venation: R_{2+3+4} straight, less than twice R_{2+3} ; elements of the cord behind vein R_5 in virtual transverse alignment; outer end of cell R about one-half broader than cell M ; cell $1st\ M_2$ subequal to distal section of M_3 ; $m-cu$ just beyond fork of M , subequal in length to distal section of Cu_1 .

Abdomen dark brown, sparsely pruinose.

Habitat.—ASSAM. *Holotype*: ♂, Bomdi La, Kameng, North East Frontier Agency, 8,800 feet, June 16, 1961 (Schmid).

Hexatoma (Eriocera) glabricornis is most similar to species such as *H. (E.) prolixa* Alexander, differing in details of coloration, the virtually glabrous antennae, and in the lack of trichia of the wing veins.

Hexatoma (Eriocera) perelongata, NEW SPECIES

Belongs to the *albipunctata* group; size very large (length of male 32 mm; abdomen alone about 25 mm); mesonotal praescutum dull black, disk with four brownish gray stripes, posterior sclerites of notum blackened; antennae with proximal two flagellar segments yellow, remainder black;

wings dark brown, apex whitened; abdomen unusually long, chiefly dark brown, segments two to four vaguely paler.

Male.—Length about 32 mm; wing 19.5 mm; antenna about 5 mm; abdomen alone about 25 mm.

Rostrum brownish gray; palpi black. Antennae of male 8-segmented; scape and pedicel black, the former slightly pruinose; segments three and four yellow, remainder black; first flagellar segment about one-half longer than the second, outer two segments subequal. Head black, pruinose; vertical tubercle complex, including three small anterior lobules and a single rounded central protuberance behind.

Pronotum gray. Mesonotal praescutum with the ground dull black, disk with four obscure gray stripes, median darkening narrowed behind, obsolete before suture, humeral and lateral regions narrowly light gray; posterior sclerites of notum blackened, pleurotergite vaguely more pruinose. Pleura black, more pruinose ventrally. Halteres with stem brown, knob black. Legs with coxae and trochanters black, pruinose; femora, tibiae and basitarsi brownish black, their tips darker, remainder of tarsi black. Wings almost uniformly dark brown, base of cell *1st A* and posterior margin of *2nd A* slightly paler; extreme wing tip whitened, including parts of cells *R*₅, *R*₄ and *R*₃; veins darker brown, yellow in the whitened apex. Longitudinal veins beyond cord chiefly with sparse trichia, these lacking on veins comprising cell *1st M*₂, more numerous on *R*₅. Venation: *R*₁₊₂ about one-half longer than *R*₂₊₃₊₄ or *R*₂₊₃; *m-cu* shortly before fork of *M*₃₊₄, longer than distal section of *Cu*₁.

Abdomen unusually long, as shown by the measurements; chiefly dark brown, segments two to four vaguely paler brown, base of segment six slightly paler.

Habitat.—SOUTH INDIA. *Holotype*: ♂, Cinchona, Anamalai Hills, 3,500 feet, May 1967 (Susai Nathan).

Hexatoma (Eriocera) perelongata is most nearly allied to species such as *H. (E.) elongatissima* (Brunetti) and *H. (E.) tenuis* (Brunetti), differing in the coloration of the legs, thorax and abdomen. Brunetti describes the male antennae of *elongatissima* as being 7-segmented, possibly in error.

Hexatoma (Eriocera) uniflava, NEW SPECIES

General coloration of body blackened, praescutum dark gray with more blackened stripes; legs brownish black, tips of femora and tibiae still darker; wings dark brown, apex in outer radial cells whitened; abdomen dull black, including the genital shield of ovipositor; segment four conspicuously light yellow on proximal half of both the tergite and sternite, interrupted at midline.

Female.—Length about 15 mm; wing 14 mm; antenna about 3.8 mm.

Rostrum black, gray pruinose; palpi black. Antennae of female 10-segmented; scape and pedicel brownish black, flagellum pale brown; flagellar segments progressively shorter outwardly, terminal slightly longer than the subequal eighth and

ninth segments. Head blackened, sparsely pruinose; vertical tubercle double, anteriorly with a more blackened transverse elevation, behind with a smaller cone.

Pronotum brownish gray. Mesonotal praescutum dark gray with more blackened stripes, the lateral pair solidly darkened, the broad intermediate areas more grayish on centers of anterior ends, the central line darkened, a more blackened marginal spot behind the humeri; posterior sclerites of notum blackened. Plura black, with restricted gray areas, especially on sternopleurite, anepsternum with a more blackened spot immediately below the darkened dorsopleural region. Halteres with stem light brown, knob dark brown. Legs with coxae black, sparsely pruinose; trochanters black; femora brownish black, outer ends still darker; tibiae brown, tips darker; tarsi brownish black. Wings strongly dark brown, cell *C* slightly more yellowed; a pale streak behind base of vein *1st A*; wing tip whitened, including outer end of cell *R*₄ and parts of cells *R*₃ and *R*₅. Venation: *R*₂₊₃₊₄ slightly longer than *R*₂₊₃, subequal to *R*₁₊₂; cell *1st M*₂ subequal to distal section of vein *M*₁₊₂.

Abdomen dull black, including the genital shield of ovipositor; segment four with slightly more than the proximal half of both tergite and sternite light yellow, narrowly interrupted by the brownish black border of tergite and paler areas on sides of sternite. Ovipositor with cerci very long and slender, horn colored.

Habitat.—SOUTH INDIA. *Holotype*: Cinchona, Anamalai Hills, 3,500 feet, September 1967 (Susai Nathan).

In the coloration of the mesonotal praescutum the present fly is generally similar to *Hexatoma* (*Eriocera*) *pulchrithorax* (Brunetti) which differs in the larger size and in the coloration of the thorax, abdomen and legs. The pattern of the abdomen of the present species appears to be distinctive.