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## Some American Eucerini Bees

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C. D. MICHENER<sup>1,3</sup>, W. E. LA BERGE<sup>2</sup>, and J. S. MOURE, C.M.F.<sup>1</sup>

The generic status of many South American eucerine bees has long been confusing. Holmberg (1884, 1903) set a high standard for descriptions of the genera; unfortunately, subsequent authors did not follow his lead. Certain authors used some of Holmberg's names but took into consideration principally one character, the number of segments in the maxillary palpi, for separating genera. Forms with two palpal segments were *Melissoptila*; three, *Thygater* (= *Macroglossapis*) or *Epimelissodes*; four, *Melissodes*; five, *Svastra*; and six, *Tetralonia*. As might be expected, some of the genera identified in this manner were artificial units. In particular, *Svastra* contained very diverse types. *Epimelissodes* of South American authors is a mere group of *Melissoptila* and has no relation to *Epimelissodes* of North America. Other authors placed all or nearly all the Eucerini in one genus, variously called *Eucera*, *Macrocera*, or *Tetralonia*.

Furthermore, the name *Tetralonia* is not applicable to any South American bees. If one were to recognize only one enormous genus in the Eucerini, its name would be *Eucera*. When this genus is subdivided, *Eucera* becomes restricted to the Old World and *Tetralonia* to the Old World and North America. All South American "*Tetralonia*" must be placed elsewhere.

In this paper we deal with some groups of *Alloscirtetica* and the old *Svastra*.

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*Alloscirtetica* Holmberg

*Scirtetica* Holmberg, 1903 (not Saussure, 1884), Anal. Mus. Nac. Buenos Aires, (3) 2: 389.

*Alloscirtetica* Holmberg, 1909, Apuntes Historia Natural, Buenos Aires, 1: 77.

*Neoscirtetica* Schrottky, 1913, Anal. Soc. Cient. Argentina, 75: 256.

*Holmbergiapis* Cockerell, 1918, Trans. Amer. Ent. Soc., 44: 36.

Almost all of the Eucerini from South America with six-segmented maxillary palpi (often placed in *Tetralonia* because of this character) and in addition a few species with five-segmented palpi are members of the genus *Alloscirtetica*. This genus has hitherto been used for but one species, *antarctica* Holmberg, from Patagonia, but it is apparent that *antarctica* is very closely related to a species from Chile, and that it is congeneric with a large group of species, principally from the temperate parts of South America.

Some of the principal characters that distinguish this genus from *Tetralonia* are tabulated in Table 1. We do not believe that *Alloscirtetica* is at all closely related to *Tetralonia*. Full characterizations of these genera will appear in a subsequent paper.

TABLE 1

DISTINGUISHING CHARACTERS OF *TETRALONIA* AND *ALLOSCIRTETICA*

<i>Tetralonia</i>	<i>Alloscirtetica</i>
Labrum usually less than twice as wide as long.	Labrum usually more than twice as wide as long.
Seventh metasomal tergum of male with pygidial plate rounded or truncate posteriorly and margined by a carina laterally and posteriorly.	Seventh tergum of male without pygidial plate or with this plate reduced and pointed posteriorly, or if truncate without a marginal carina posteriorly.
Sixth sternum of male with pair of carinae converging apically.	Sixth sternum of male without carinae.
Seventh sternum of male emarginate medially, apical margin on either side of emargination not greatly produced, hairless.	Seventh sternum of male with median apical point, apical margin on either side of emargination greatly produced posteriorly as a pair of broad, delicate, hairy lobes (median plates).

Species included are *Alloscirtetica antarctica* (Holmberg) [*Scirtetica*], *corvina* (Friese) [*Tetralonia*], *frieseana* (Herbst) [*Tetralonia*], *rufitarsis* (Bertoni) [*Tetralonia*], *gazullai* (Ruiz) [*Tetralonia*], *porteri* (Ruiz) [*Tetralonia*], *tornowii* (Brèthes) [*Tetralonia*],

*tristrigata* (Spinola) [*Anthophora*], and *valparadisaea* (Herbst) [*Tetralonia*], in addition to the species described below and various unidentified species from Chile and Argentina. It seems probable from the description that *Macrocera baeri* Vachal is also a member of this genus.

*A. tornowii* from Argentina, known only in the male, is peculiar in the unusually protuberant clypeus, long proboscis, strong and continuous paraocular carinae, and in having the distance between the lower ends of the eyes slightly less than the length of an eye. Most of these characters are probably a result of a single trend, the elongation of the proboscis. If this is true, they do not have as much systematic significance as if they were independent characters.

*A. corvina*, also from Argentina, known to us only in the male, is unique among species of the genus in lacking the median apical projection of the seventh sternum. However, the form of the genitalia and sterna are otherwise as in *Alloscirtetica*, and the near lack of a pygidial plate and other characters place the species clearly in that genus.

#### *Alloscirtetica weyrauchi* new species

This is the northernmost known species of *Alloscirtetica*. By the presence of appressed plumose hairs on the metasomal terga, this species resembles *A. tristrigata* (Spinola), but differs from that form by the more generally distributed pale pubescence of the abdomen, the entirely yellow clypeus of the male, the less well defined pygidial plate of the male (marginal carinae not meeting posteriorly), and by many other characters.

Male: Length 6.5 mm (varying to 9 mm among paratypes); wing length 6 mm (varying to 7 mm among paratypes). Integument black, under side of flagellum except first segment testaceous; clypeus (except narrow upper margin), labrum, and large basal mandibular spot yellow; tegula and distal margins of abdominal segments weakly brownish; distal tarsal segments rufescent; tibial spurs testaceous. Wings nearly clear, veins and stigma dark brown.

Hairs pale brown, metasoma with rather abundant erect hairs and appressed plumose pubescence, the latter forming weak apical bands on second and following terga and weaker basal bands on third and following terga, scattered more erect plumose hairs also present between bands.

Punctuation rather coarse, that of mesoscutum and scutellum coarsest, separated discally by more than a puncture width; metasomal terga shining, with coarse punctures, except for narrowly impunctate apical margins.

Minimum length of first flagellar segment to that of second as 9:21, second subequal to third. Eye length to upper and to lower interorbital distances as 34:51:42. Lower part of paraocular carina absent; clypeus strongly protuberant, close to eyes laterally; labrum less than twice as broad as long, lateral margins converging to rather narrowly notched apex. Distal part of galea slightly longer than eye, more than three times as long as maxillary palpus, latter six-segmented, segments 1, 2, and 3 subequal, 4 and 5 together equal to 3, 5 slightly shorter than 4, 6 equal to 4 in length but slenderer. Scutellum with feeble longitudinal ridge anteriorly. Posterior claws slightly asymmetrical. Propodeum with subhorizontal basal zone which has a few coarse longitudinal striae basally. Seventh metasomal tergum with pygidial plate sparsely hairy and margined laterally by fine converging carinae which end before meeting, sparsely hairy zone reaching margin of tergum medially, sides of tergum lateral to carinae very densely hairy. Genitalia and hidden sterna as shown in figures 1a to 1d, plumose hairs of seventh sternum very dense basally.

Holotype male and three male paratypes: Tarata, near Tacna, Perú, 3100 meters altitude, November, 1948 (Weyrauch). This species is named in honor of its collector, Dr. Wolfgang K. Weyrauch of the Universidad de San Marcos, to whom we are indebted for this and other Peruvian bees.

The holotype is in the collection of J. S. Moure, Curitiba. Paratypes will be placed in collections of the University of Kansas and Dr. Weyrauch.

#### *Alloscirtetica cinerea* new species

This species is described at this time because of its unusual characters; it seems necessary to make it known in order to provide an understanding of the remarkable amount of variation among the species of this genus. It is peculiar in that the second segment of each maxillary palpus is expanded to form a broad, flat, almost round, leaflike structure. The third segment is also somewhat flattened, but not broadly expanded. Flattened (but not expanded) second and third segments are also found in *A. weyrauchi* and *A. frieseana*, which are also the species superficially most similar to *cinerea*.

Male: Length 9 mm, wing length 7 mm.

Integument black, under side of flagellum except first segment testaceous; clypeus (except narrow zone around whole margin), large (to small) central spot in labrum, and large basal mandibular spot (absent in some paratypes) yellow; distal margins of abdominal segments faintly brownish; distitarsi rufescent; tibial spurs testaceous. Wings nearly clear, veins and stigma dark brown.

Hairs pale brown, those of metasoma long and erect, not much shorter than those of thorax, posterior margins of second and following terga with apical bands (broken on second) of appressed, pale, plumose pubescence; sterna three to five with dense basal bands of pale pubescence (frequently hidden by preceding sterna).

Punctuation rather coarse, that of mesoscutum and scutellum not coarser than elsewhere, large posterior area of scutum and much of scutellum impunctate; metasomal terga shining, punctures as coarse as those of thorax, posterior margins of terga narrowly impunctate.

Minimum length of first flagellar segment to that of second and of third as 7:21:18. Eye length to upper and to lower interorbital distances as 42:70:54. Lower part of paracocular carina absent; clypeus moderately protuberant, separated from eyes laterally by half width of a flagellar segment; labrum almost twice as wide as long, lateral and apical margins convex except for median emargination. Distal part of galea about 1.5 times as long as eye, more than three times as long as maxillary palpus, latter six-segmented, segments 1 and 2 subequal in length, 2 expanded and almost circular, 3 slightly longer than 2, 4 shorter than 2, 6 slightly shorter, and 5 shortest. Scutellum without longitudinal median ridge or fovea.

Propodeum with subhorizontal basal zone which is coarsely and rather closely punctate. Seventh metasomal tergum coarsely and closely punctate, with sparsely hairy central area, reaching tergal margin medially, with only feeble indication (sometimes absent) of two carinae converging posteriorly. Seventh sternum basically similar to that of other *Alloscirtetica* but inner plates much smaller (figure 2), having areas of capitate as well as plumose and simple hairs, all of which are denser than could be shown in the figure; eighth sternum and genitalia similar to those of *weyrauchi*, but gonostylus without plumose hairs, broad basal part of gonocoxite broader.

Female: Length 10 mm, wing length 7 mm.

Similar to male except for the usual sexual characters. First two flagellar segments black, apical ones dark brown above; clypeus, labrum, and mandibles black.

Pubescence of abdomen markedly shorter than that of head and thorax, but long erect pale hairs present; first tergum with apical band of appressed pale pubescence laterally; apical bands of second to fourth terga as in male, fifth with dense plumose pale pubescence occupying entire tergum, a

small median posterior patch reddish; sixth tergum covered with ferruginous pubescence except for pygidial plate; fourth tergum, anterior to band, with numerous pale plumose hairs, and third tergum with a broad basal band of such hairs; sterna without basal bands of hairs.

Punctuation coarsest on clypeus and mesoscutum, the latter with only small posterior median impunctate area; punctures of metasomal terga finer than those of mesoscutum.

Minimum lengths of scape, first, second and third flagellar segments as 28:16:7:8. Eye length to upper to lower interorbital distances as 45:67:61.

Holotype male, allotype female, and two male paratypes: Condoriaco, Coquimbo, Chile, October 21, 1948 (R. Wagenknecht H). One female and one male paratype: Laguna Chicauma (Roble Alto), Coquimbo, Chile (R. Wagenknecht H).

The holotype and allotype will be placed in the Museo Nacional, Santiago, Chile. Paratypes will be found in the collections of J. S. Moure and the University of Kansas.

### *Dasyscirtetica* new subgenus

Type species: *Tetralonia gilva* Holmberg, 1884.

This subgenus is characterized, in comparison with *Alloscirtetica* s. str., by the following tabulation:

<i>Dasyscirtetica</i>	<i>Alloscirtetica</i> s. str.
Distance between lower ends of eyes less than eye length.	Distance between lower ends of eyes longer than eye.
Clypeus little protuberant, anterior margin much less than width of eye in front of eye.	Clypeus more protuberant, anterior margin lying a distance nearly equal to eye width in front of lower anterior eye margin.
Metasomal pubescence dense, appressed pale plumose hairs covering surface.	Metasomal pubescence sparser, pale plumose hairs usually absent; if not, sparse or limited to apical bands.
Antennae (♂) not reaching stigma.	Antennae (♂) reaching stigma.
Seventh tergum (♂) width apical margin medially produced as a subtruncate process which is apex of pygidial plate.	Seventh tergum (♂) with apical margin rounded, pygidial plate absent or rudimentary, triangular, and ending on dorsal surface of tergum.



Seventh sternum (♂) with median plate consisting of two large hairy lobes.	Seventh sternum (♂) with median plate consisting of one large lobe, sometimes with additional small translucent outer lobe arising from clear area between median and outer plates.
Clypeus (♀) marked with yellow.	Clypeus (♀) without yellow.
Scopal hairs plumose.	Scopal hairs simple.
Pygidial plate (♀) broad.	Pygidial plate (♀) narrower.
Gradulus of sixth tergum (♀) bent posteriorly at each side.	Gradulus of sixth tergum (♀) not bent posteriorly at the sides.

Included species are *Alloscirtetica* (*Dasyscirtetica*) *gilva* (Holmberg) [*Tetralonia*], *arrhenica* (Vachal) [*Macrocera*], and *paraguayensis* (Friese) [*Tetralonia*] from Argentina and Paraguay.

#### Genus *Svastra* Holmberg

*Svastra* Holmberg, 1884, Actas Acad. Nac. Cienc. Cordoba, 5: 127.

In South America *Svastra* should, so far as we know, be restricted to three species, *bombilans* Holmberg, *detecta* Holmberg<sup>1)</sup>, and *flavitarsis* (Spinola). The first may be merely an Argentine subspecies of the last, which is from Chile. The genus can be easily recognized by the presence of spatulate hairs (plumose basally) in the pale hair bands of the bases of the second and third metasomal terga. In the presence of such hairs as well as in many other features it resembles the North American *Epimelissodes*, which we therefore regard as a subgenus of *Svastra*. From the other South American Eucerini with five-segmented maxillary palpi, *Svastra* differs further by the much reduced and hairless inner apical plates of the seventh sternum of the male (figure 5d), absence of subapical ventral spicules on the gonocoxites (figure 5), by the moderately long first flagellar segment of the male (in *Svastra* its minimum length is at least as long as its breadth and more than one fifth length of second segment), etc. The various species which have been at one time or another placed in *Svastra* because of five-segmented palpi, but in reality are not related to it, must be removed either to *Florilegus* (if both sexes have lateral teeth on the last tergum, males have the inner plates of the seventh sternum longitudinally curled and females have a completely defined basitibial plate) or to

1) *Melissodes venturii* Bertoni and Schrottky is a synonym of *detecta*. The type, in the Departamento de Zoologia, Secretaria de Agricultura do Estado de São Paulo, shows five-segmented maxillary palpi. Bertoni and Schrottky did not notice the separation of the last two.

the groups described below (if both sexes lack lateral teeth on the last tergum and males have the inner plates of the seventh sternum not curled longitudinally but usually reflexed from near bases and females lack completely defined basitibial plates).

### *Svastrides* new genus

Type species: *Tetralonia melanura* Spinola, 1851

**Common characters:** Upper paraocular area broadly excavated, nearly impunctate, with weak bluish tints; a feeble transverse ridge behind ocelli; clypeus moderately protuberant, separated from eye by one-third of flagellar diameter, lower part of paraocular carina weak but often traceable; maxillary palpi five-segmented. Second submarginal cell large, often as long as first on vein M. Anterior coxa not spined; arolia present. Metasomal terga 2 and 3 without traces of apical pale bands, with basal bands of pale suberect hair (not spatulate) often weakly developed.

**Female:** Scape as long as interantennal distance, first flagellar segment much shorter than scape; scopal hairs simple distally but branched basally; gradulus of sixth tergum strongly bent to rear laterally as a carina, not elevated to form a lamella.

**Male:** Antenna reaching nearly to apex of marginal cell, flagellar segments slightly flattened, distal ones slightly narrower than basal, last normal, first on shortest side less than one-eighth length of second; sixth sternum with pair of converging carinae; seventh sternum with median plates strap-like (rarely expanded apically), reflexed near bases, and diverging apically; gonocoxites with ventroapical spicules; gonostyli with coarse plumose hairs.

This genus differs from similar forms, such as *Svastra*, especially by the italicized characters in the above description.

Included species are *Svastrides melanura* (Spinola) [*Tetralonia*], *orellanae* (Ruiz) [*Tetralonia*], and *zebra* (Friese) [*Tetralonia*]. In addition, two unidentified species fall in this genus.

### *Gaesischia* new genus

Type species: *Svastra fulgurans* Holmberg, 1903 (= *Tetralonia iheringi* Bertoni and Schrottky, 1910).

**Common characters:** Upper paraocular area broadly excavated, punctate, not bluish, vertex strongly elevated behind ocelli which are therefore on anterior slope of head (figure 6a); clypeus moderately protuberant, separated from eye by one-third to one-half of ocellar diameter, paraocular

carina usually strong, joining reflexed lateral clypeal margin; maxillary palpi four to six-segmented. Second submarginal cell small, much shorter than first on vein M. *Anterior coxa usually with apical spine in female, sometimes in male*; arolia present. Metasomal terga 2 and 3 usually with apical or median band of appressed pale pubescence in addition to basal one.

*Female*: Scape as long as or slightly longer than inter-antennal distance; first flagellar segment shorter than scape; scopal hairs plumose; gradulus of sixth tergum variable.

*Male*: Antenna approximately reaching pterostigma, flagellar segments slightly flattened, distal ones (except sometimes last which may be expanded) progressively narrower toward apex, first on shortest side less than one-sixth length of second; *sixth sternum with pair of converging carinae*; *seventh with median plates somewhat to much expanded apically, reflexed near bases and diverging apically*; gonocoxites with ventroapical spicules; gonostyli without coarse plumose hairs.

This genus differs from related genera, such as *Svastrides* and *Dasyhalonia*, especially by characters italicized in the above description.

Among South American *Gaesischia* we recognize subgenera as follows:

<i>Gaesischia</i> s. str.	<i>Gaesischiopsis</i> new subgenus
Type species: <i>Svastra fulgurans</i> Holmberg, 1903 (= <i>Tetralonia iheringi</i> Bertoni and Schrottky, 1910).	Type species: <i>Gaesischia</i> ( <i>Gaesischiopsis</i> ) <i>flavoclypeata</i> new species.
Anterior coxal spines (♀) reaching apex of trochanter.	Anterior coxal spines (♀) half length of trochanter or less.
Maxillary palpi 5-(rarely 6) segmented.	Maxillary palpi 4-segment.
Gradulus of sixth tergum (♀) strongly bent to rear at each side.	Gradulus of sixth tergum (♀) not bent to rear.
Outer plate of seventh sternum (♂) heavily sclerotized, roughly round, with deep narrow emargination on outer side; median plate not much expanded apically (fig. 9).	Outer plate of seventh sternum (♂) lightly sclerotized, elongate, emargination of outer side shallow; median plate much expanded apically (fig. 4).
Clypeus (♀) usually without yellow band.	Clypeus (♀) usually with yellow band.

The subgenus *Gaesischia* s. str. includes not only the type species, *Gaesischia (Gaesischia) fulgurans* (Holmberg), but six others as yet undescribed or unidentified. In addition, it probably includes *G. labiatarum* (Ducke) [*Eucera*] which, however, is unusual for the subgenus in having six-segmented maxillary palpi and a yellow clypeal fascia in the female. We have not seen males of this species.

The subgenus *Gaesischiopsis* includes not only the type species described below but also *Gaesischia (Gaesischiopsis) belophora* (Moure) [*Melissodes*] and three apparently undescribed species.

#### *Gaesischia (Gaesischiopsis) flavoclypeata* new species

This species, especially in the female, is superficially similar to *Gaesischia fulgurans* (Holmberg). The female differs, however, by the presence of an apical yellow band across the clypeus. The male has abundant yellow appressed abdominal pubescence, thus resembling the female more than does the male of *fulgurans*, and is further remarkable for the possession of a long spine on each front coxa (not found in other known males) and for a fringe of hairs on the upper surface of the antennal flagellum.

*Male*: Length 10 mm, wing length 8 mm.

Integument black; flagellum largely dark brown dorsally though black basally and apically, ventrally light brown except for black first segment and gradually darkened tenth and eleventh segments; clypeus pale yellow, anterior margin pale brown, narrow lateral and broad posterior margins black; labrum with small median yellow spot (absent in some paratypes); mandible with orange subapical area; distal tarsal segments brownish; anterior tibial spurs brown, others nearly black; posterior margins of metasomal terga translucent testaceous. Wings nearly clear, veins and stigma blackish.

Pubescence of head and thorax dull white, that of vertex, mesoscutum, and mesoscutellum except for margins black; posterior lobe of pronotum (except in some paratypes) and tegula with numerous black hairs among pale ones; pubescence of legs dull white except for intermixed black hairs on front and middle femora; pubescence reddish fuscous on under sides of tibiae and tarsi; base of first tergum with long dull white hairs, distal portion with short black hairs, those of posterior margin, laterally, yellow; terga two to six with apical bands of appressed yellow plumose pubescence and with similar hairs scattered less densely over terga anterior to bands, except that on second tergum there is an area immediately anterior to the band without pale hairs except laterally,

so that a yellowish white basal band results; interband area of second tergum with short black hairs; remaining terga with long black to fuscous hairs (entirely pale in some paratypes); pubescence of seventh tergum entirely fuscous to black (pale laterally in some paratypes); sterna with fringes of yellowish white hairs, hairs of discs and all those of sixth sternum fuscous.

Punctuation of head and thorax rather coarse, coarsest on mesoscutum, only slightly finer on scutellum and clypeus; triangular area of propodeum closely rugose punctate; metasomal terga rather finely punctate, posterior ones more coarsely so, a zone in front of impunctate margin finely and closely punctate on each tergum.

Antenna reaching almost to pterostigma, minimum lengths of first, second, third, tenth, and eleventh segments as 6:36:29:23:34; third flagellar segment thickest, subsequent ones tapering slightly, last not expanded but narrower than penultimate; upper surface of segments two to eight with fringe of hairs, reduced on ninth, absent on tenth and eleventh as well as base of second. Eye length to upper and lower interorbital distances as 33:40:30. Segments of maxillary palpi, in order of decreasing length, 1, 2, (3, 5), 4.

Seventh sternum (figure 4) with under surface of expanded apical part of inner plate densely covered with hairs; genitalia much as in *fulgurans* except as shown in figure.

*Female*: Length 10 mm, wing length 8 mm.

Differing from male in usual sexual characters and as indicated below:

Flagellum black, under surface of third and following segments brown; clypeus black with apical margin dark brown and broad subapical yellow band, enlarged upward medially as triangular projection; labrum dark brown.

Posterior lobe of pronotum and mesepisternum with pubescence mixed black and white, that of ventral surface of thorax fuscous; hairs of front and middle legs light brown to pale fuscous, reddish fuscous on under sides of tarsi, distal patches of dense pale brown hairs on outer sides of tibiae, many nearly white hairs on middle femur and distal tarsal segments; hind leg with hairs white, fuscous intermixed on femur, hairs of basitibial plate brown and a few brownish hairs distal to this plate, hairs of under side of basitarsus reddish fuscous; terga two to four as described for male but first tergum practically without black hairs; fifth tergum with vestiture similar to fourth laterally, medially with triangular

area of brownish black hair; sixth with all pubescence brownish black; metasomal sternal hairs, except for long yellowish fringes, pale brown.

Punctuation of clypeus as coarse as that of mesoscutum.

Lengths of scape, first, second, and third flagellar segments as 13:8:6:6. Eye length to upper to lower interorbital distances as 38:41:34.

Holotype male and one male and one female paratype: Guarulhos, São Paulo, Brasil. Allotype female: Ipiranga, city of São Paulo, February 29, 1936 (F. Lange de Morretes). One female paratype: Curitiba, Paraná, Brasil, March, 1941 (J. S. Moure); one male paratype: Villarica, Paraguay, February 8, 1950 (F. H. Schade).

The holotype and allotype are in the collection of the Departamento do Zoologia, Secretaria de Agricultura do Estado de São Paulo. Paratypes will be placed in the collections of J. S. Moure and the University of Kansas.

#### *Gaesischiana* new subgenus

Type species: *Gaesischia* (*Gaesischiana*) *exul* new species.

In addition to the South American forms of this genus, we describe below the single known North American form of *Gaesischia*. Specimens have been mixed with unidentified *Melissodes* in North American collections.

This subgenus resembles *Gaesischia* s. str. in the five-segmented maxillary palpi but has the seventh metasomal sternum more as in *Gaesischiopsis*, the gonostyli flattened, the posterior legs somewhat swollen and the basitarsi broad and flattened, and other differences. Unfortunately the female is unknown.

Maxillary palpi five-segmented; lower part of paraocular carina weak; hind femora twice as long as broad, nearly bare beneath; hind basitarsi very flat, two-fifths as wide as long, outer surface bare, lower part of inner surface also nearly bare, but distal half of lower margin with row of hairs, apex of basitarsus pointed. Seventh sternum with outer plates of moderate size with small notch on outer margin, inner plate much expanded apically with subapical process directed basally; gonostylus strongly flattened, widest beyond the middle, bladelike.

#### *Gaesischia* (*Gaesischiana*) *exul* new species

*Male*: Length 8 to 11 mm, wing length 6 to 8 mm.

Integument black; flagellum with apical one and one half segments dark brown, antepenultimate and apical half of

preceding segment yellow, remaining segments dark brown dorsally and yellow ventrally and laterally; clypeus yellow, narrow upper margin between tentorial pits dark brown to black; labrum yellow with narrow apical margin brown (to entirely dark brown in some paratypes); mandible yellow basally; legs, except coxae and often trochanters, ferruginous, tibial spurs yellow; posterior margins of metasomal terga translucent, colorless to orange; sixth sternum brown to ferruginous; tegulae translucent, yellow. Wings clear or slightly milky, veins and stigma pale brown or yellowish, paler basally.

Pubescence of head and thorax dull white, often ochraceous above; pubescence of legs white, ferruginous on inner sides of tarsi; first metasomal tergum with long, white erect or suberect hairs in basal four fifths, with short, brown, simple, appressed hairs apically; second tergum with basal and apical bands of short, appressed, white pubescence connected laterally by white pubescence and separated by a broad zone of short, simple, subappressed, brown hairs, apical white band often narrowly interrupted medially by short, simple, brown hairs; terga three to six similar to two but middle zone of each with short, appressed, scalelike, white pubescence, especially on terga five and six; tergum seven with appressed white hairs; sterna two to five with apical fringes of long white hairs which usually do not exceed apices of sterna medially but are much longer laterally; sternal hairs elsewhere yellow to white.

Punctuation of head and thorax coarse, coarsest on mesoscutum, ground surfaces dulled by coarse irregular shagreening except on scutellum; mesoscutum with anterior margin impunctate and shiny, posterior margin of unsculptured zone recurved; metasomal terga and sterna finely and regularly punctate, ground surfaces moderately shiny. Hind coxa, trochanter, femur, and tibia with inner surfaces flattened, opaque, dulled by abundant, minute, regular, scalelike hairs set in shallow depressions; normal hairs grade into scalelike ones at margins of opaque areas; longer scalelike hairs, not set in depressions and less abundant, occur in comparable areas of fore and middle legs.

Antenna reaching to middle of submarginal cell or beyond, minimum lengths of first, second, tenth, and eleventh flagellar segments as 4:27:15:14; last two segments flattened and widest about one third of length from apex; segments two to seven with narrow shallow depressions ventrally at margins of dark brown areas, a short shallow depression present at base of segment eight when that segment has a short brown area ventrally (never more than basal third of segment). Eye length to upper and lower interorbital distances

as 27:29:25. Segments of maxillary palpus in order of decreasing length 2, 3, 1, 4, 5.

Seventh sternum with apical part of clear area between inner and outer plates much expanded to form ventral spiculate pad, outer portion of outer plate similarly spiculate, inner plate greatly expanded apically, apical margin with a row of hooked hairs, dorsal surface with a few minute hairs; eighth sternum with median, apical ridge enormously expanded ventrally (figure 6).

Holotype male and forty-eight male paratypes: Tucson, Arizona, U. S. A., May 26, 1952 (Defaud, collector, University of Arizona).

The holotype is the property of the University of Arizona, on loan to the Snow Entomological Museum of the University of Kansas. Paratypes will be found in the collections of those institutions as well as in those of the United States National Museum, J. S. Moure, and W. E. La Berge.

In addition to the specimens listed above, we have available one male from twenty miles southwest of Veracruz, Mexico, March 27, 1951 (W. P. Stephen, collector, University of Kansas) and two males from Los Amates, Guatemala (Kellerman, collector, Museum of Comparative Zoology, Harvard University). These specimens differ from Arizona specimens in the slightly larger size, in having more abundant pale pubescence on the terga, and in having the metasoma mostly red in color. No other differences were found to distinguish them. Perhaps they represent a southern subspecies of the Arizona form.

### *Dasyhalonia* new genus

Type species: *Tetralonia spiniventris* Friese, 1910.

**Common characters:** Upper paraocular areas broadly excavated, nearly impunctate, without bluish; no ridge behind ocelli; clypeus moderately protuberant, close to eye laterally; lower part of paraocular carina distinct (or in some males absent); maxillary palpi five to six segmented. Second submarginal cell much shorter than first on vein M. Anterior coxae not spined; arolia present. Metasomal terga uniformly covered with pale plumose pubescence or with basal and apical bands.

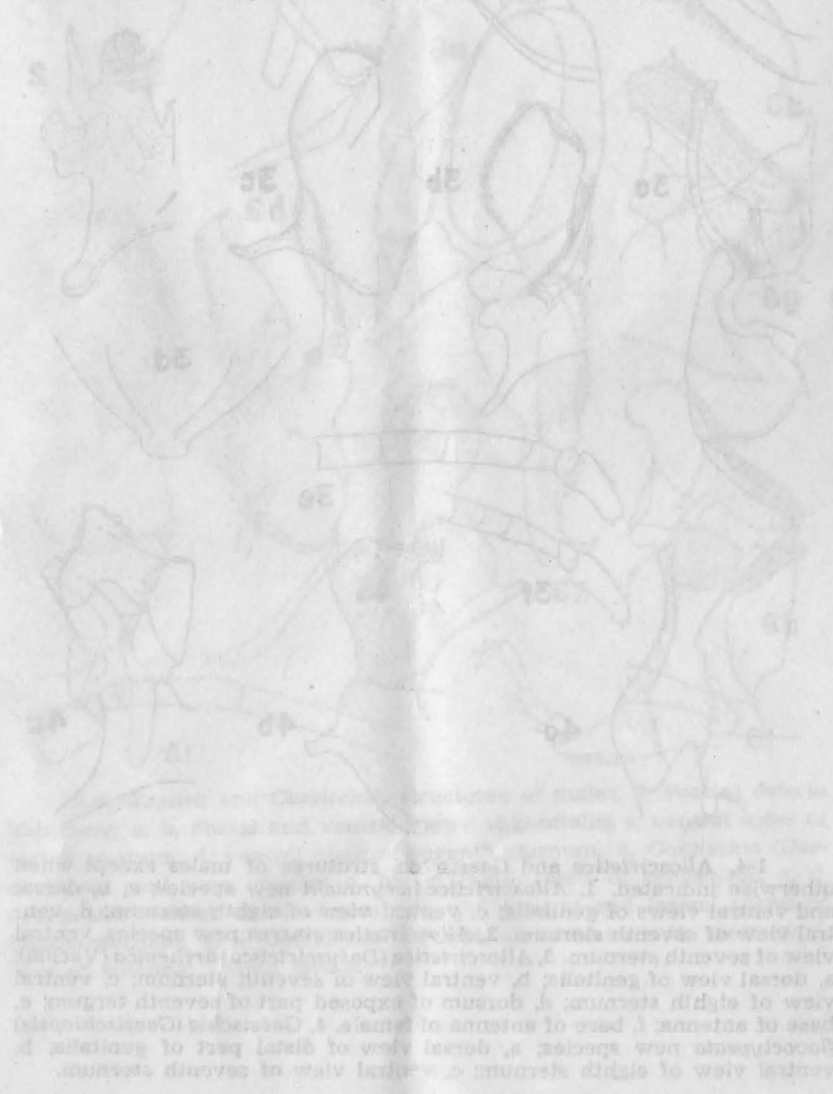
**Female:** Scape as long as interantennal distance, first flagellar segment shorter than scape; scopal hairs plumose to simple; *gradulus of sixth tergum bent to rear laterally as strong carina or small lamella.*

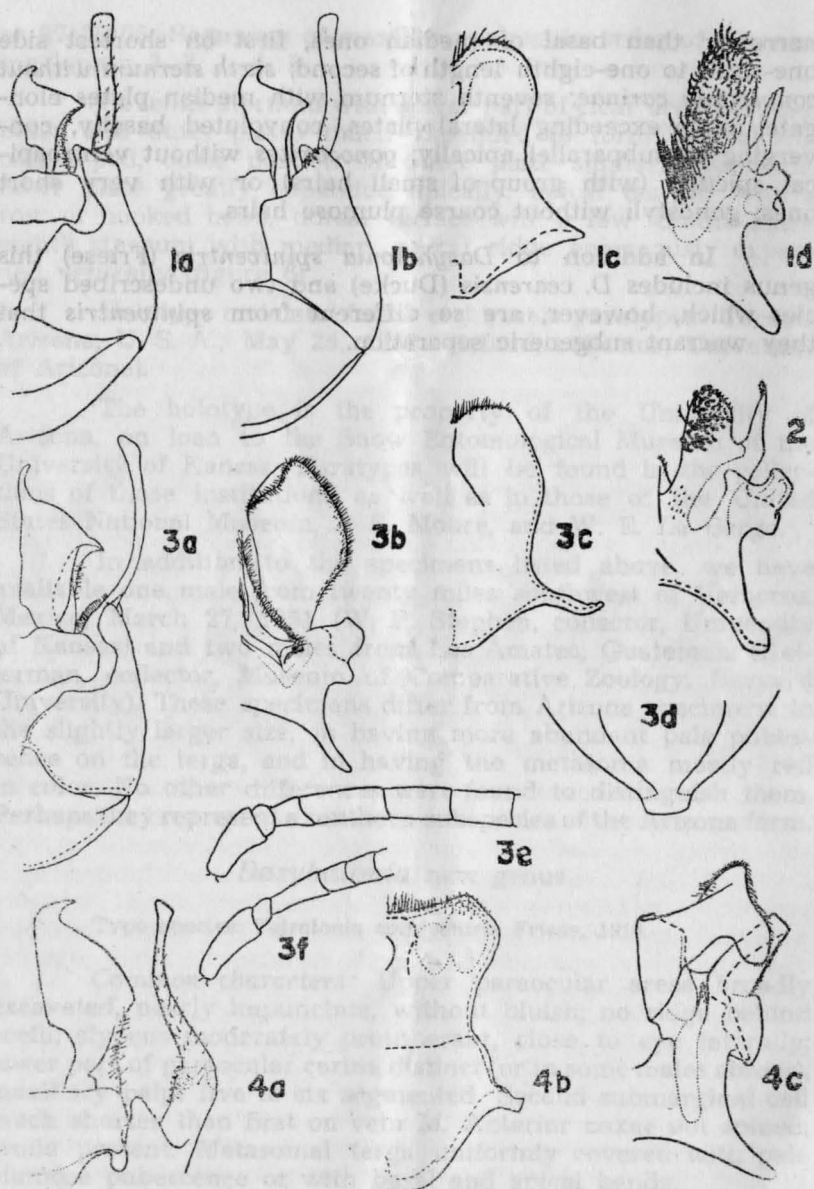
**Male:** Antenna reaching stigma, flagellar segments thick, but little flattened, crenulate distally, distal ones progressively



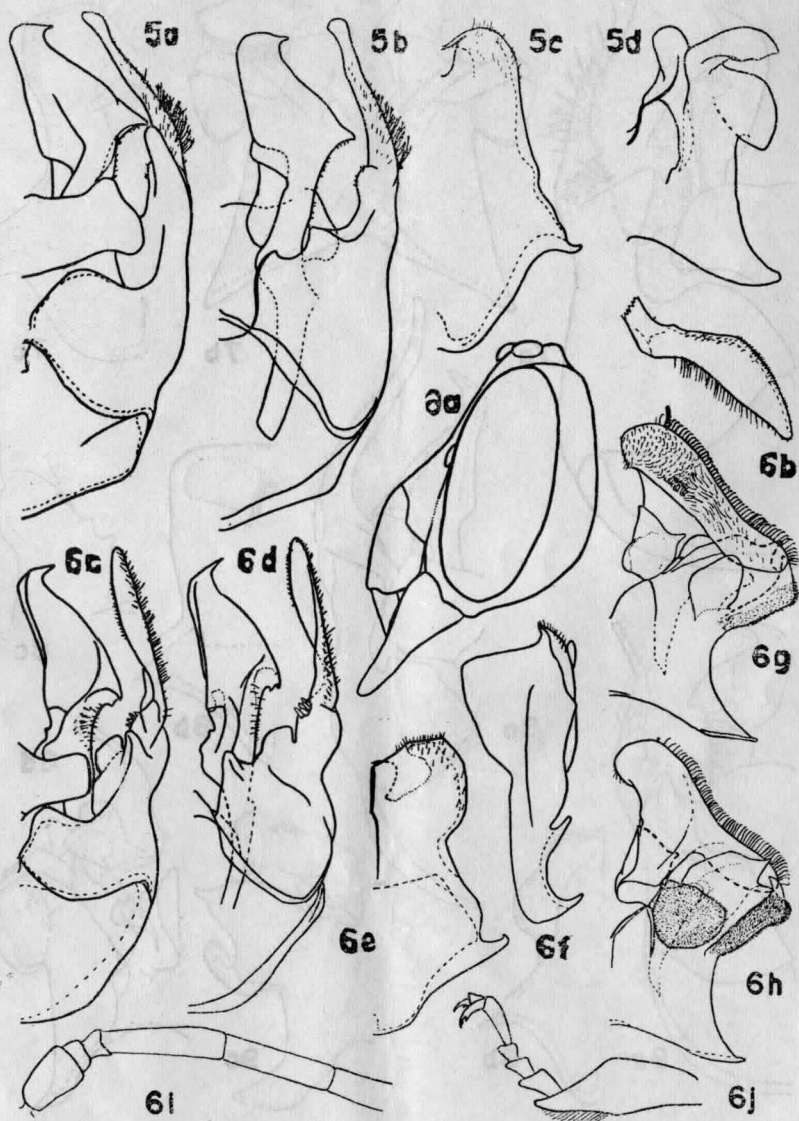
narrower than basal or median ones, first on shortest side one-sixth to one-eighth length of second; *sixth sternum without converging carinae*; seventh sternum with median plates elongate, much exceeding lateral plates, convoluted basally, converging or subparallel apically; *gonocoxites* without ventroapical spicules (with group of small hairs) or with very short ones; gonostyli without coarse plumose hairs.

In addition to *Dasyhalonia spiniventris* (Friese) this genus includes *D. cearensis* (Ducke) and two undescribed species which, however, are so different from *spiniventris* that they warrant subgeneric separation.

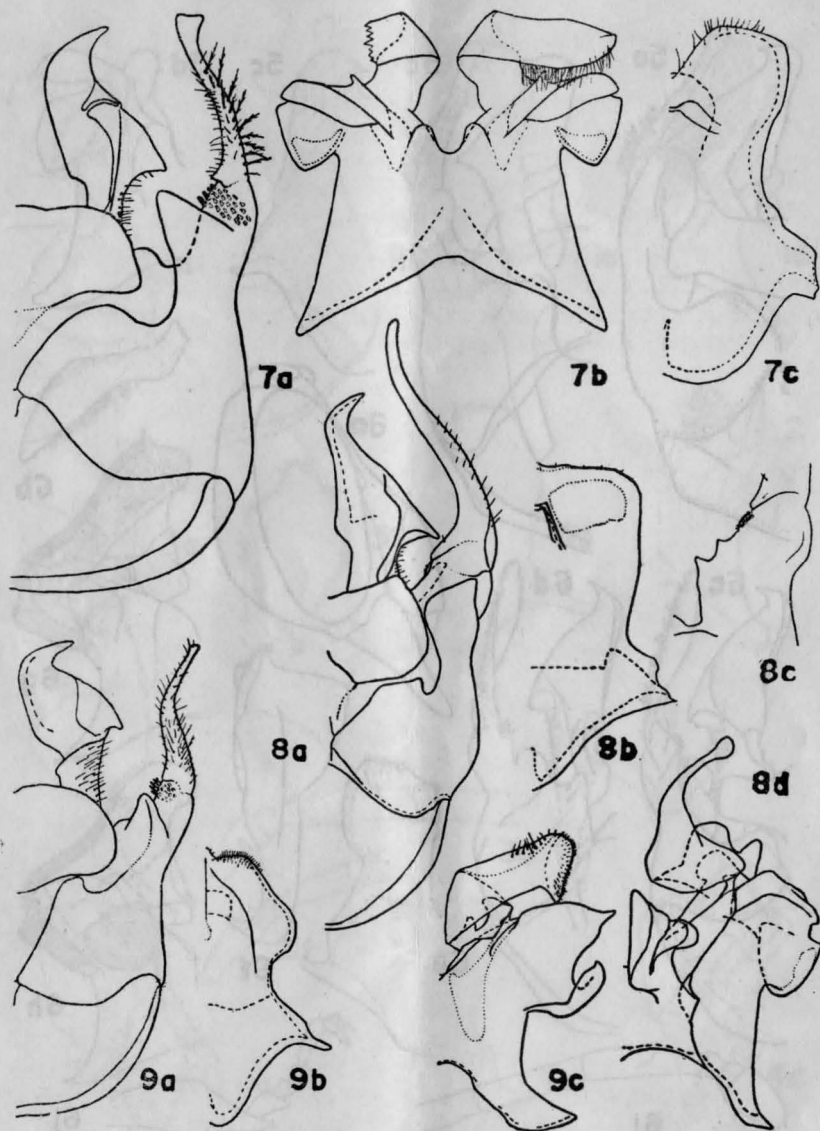




1-4, *Alloscirtetica* and *Gaesischia*, structures of males except when otherwise indicated. 1, *Alloscirtetica weyrauchi* new species; a, b, dorsal and ventral views of genitalia; c, ventral view of eighth sternum; d, ventral view of seventh sternum. 2, *Alloscirtetica cinerea* new species, ventral view of seventh sternum. 3, *Alloscirtetica (Dasycirtetica) arrhenica* (Vachal); a, dorsal view of genitalia; b, ventral view of seventh sternum; c, ventral view of eighth sternum; d, dorsum of exposed part of seventh tergum; e, base of antenna; f, base of antenna of female. 4, *Gaesischia (Gaesischiopsis) flavoclypeata* new species; a, dorsal view of distal part of genitalia; b, ventral view of eighth sternum; c, ventral view of seventh sternum.



5-6, *Svastra* and *Gaesischia*, structures of males. 5, *Svastra detecta* Holmberg; a, b, dorsal and ventral views of genitalia; c, ventral view of eighth sternum; d, ventral view of seventh sternum. 6, *Gaesischia (Gaesischiana) exul* new species; a, head; b, side view of gonostylus; c, d, dorsal and ventral views of genitalia; e, f, ventral and lateral views of eighth sternum; g, h, dorsal and ventral views of seventh sternum; i, base of antenna; j, hind tarsus.



7-9, *Svastrides*, *Dasyhalonia*, and *Gaesischia*, structures of males: 7, *Svastrides zebra* (Friese); a, dorsal view of genitalia; b, ventral view of seventh sternum; c, ventral view of eighth sternum. 8, *Dasyhalonia spiniventris* (Friese); a, dorsal view of genitalia; b, ventral view of eighth sternum; c, ventral view of gonocoxite; d, ventral view of seventh sternum. 9, *Gaesischia (Gaesischia) fulgurans* (Holmberg); a, dorsal view of genitalia; b, ventral view of eighth sternum; c, ventral view of seventh sternum.

