

**New Genera of Gorytini<sup>1</sup>**  
(Hymenoptera : Sphecidae : Nyssoninae)

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In the course of a phylogenetic study of the family Sphecidae it was discovered that a number of elements treated previously as subgenera or species groups were deserving of generic status. In this connection the large and worldwide tribe Gorytini contains some 29 genera of which five are described below.

**Austrogorytes** R. Bohart, new genus

TYPE OF GENUS.—*Gorytes bellicosus* F. Smith.

Eyes converging toward clypeus, sometimes strongly (Fig. 1); mandible with two subteeth toward inner apex; ocelli normal, an impressed line usually discernible from midocellus to interantennal area; basal flagellomere two to three times as long as broad; male antenna with 13 articles, many with tyloides beneath; scutum distinctly and often closely punctate, an oblique carina present posterolaterally opposite tegula; omaulus well developed, sternaulus and acetabular carina sometimes present; episternal sulcus with lower part continued forward almost horizontally to omaulus but forming an obtuse angle with scrobal sulcus; metapleuron broad above, abruptly narrowed in lower one-half; stigmal groove present; propodeum mostly with coarse sculpture; forewing media arising before cu-a, posterior veinlet of second submarginal cell not more than one-fifth as long as first discoidal cell but longer than veinlet on either side and twice as long as opposite anterior veinlet (Fig. 3); hindwing media diverging beyond cu-a, usually well beyond; jugal lobe smaller in outline than tegula; foretarsal comb present in female, sometimes in male; outer edge of female fore basitarsus with two or three long setae; female forepulvillus much larger than those of other legs; midtibia with two apical spurs or only one in males of some species; abdomen not petiolate but first segment sometimes rather narrow; female with a plate-like pygidium (Fig. 2); male with 7 visible tergites, sternites IV to VI nearly always with apical fimbriae, VIII narrowly to broadly blade-like.

The species of *Austrogorytes* have previously been contained in the portmanteau genus *Gorytes*. It differs from other gorytines by the combination of, (1) oblique lateral scutal carina, (2) posterior veinlet of second submarginal cell as long as basal veinlet of second discoidal cell (Fig. 3), (3) omaulus distinct, (4) hindwing jugal lobe smaller in outline than tegula. Its distribution is limited to Australia where it appears to take the place of *Gorytes*. Known species are: *A. aurantiacus* Turner, *A. bellicosus* F. Smith, *A. browni* Turner, *A. chrysozonus* Turner, *A. ciliatus* Handlirsch, *A. consuetipes* Turner, *A. cygnorum*

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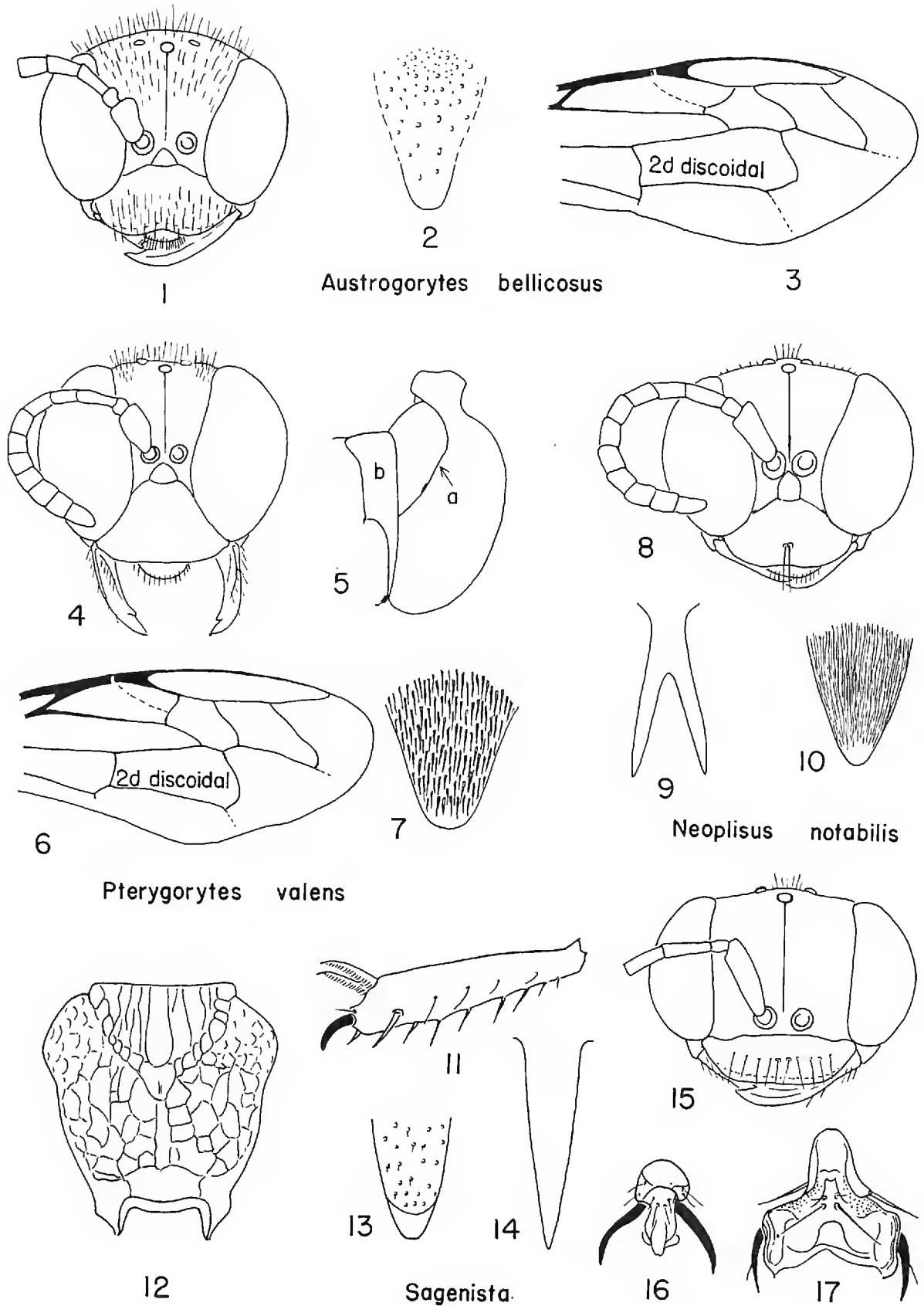


Fig. 1. Face of female. Fig. 2. Pygidium of female. Fig. 3. Wing. Fig. 4. Face of female. Fig. 5. Meso- and metapleura of female; a, episternal-scrobal sulcus; b, metapleura. Fig. 6. Wing. Fig. 7. Pygidium of female. Fig. 8. Face of female. Fig. 9. Male sternite VIII, sclerotized part. Fig. 10. Pygidium of female. Fig. 11. *Sagenista cayennensis* (Handlirsch), midtibia of female, outer view. Figs. 12-17. *Sagenista scutellaris* (Spinola). Fig. 12. Propodeum in posterior view. Fig. 13.

Turner, *A. eximius* F. Smith, *A. frenchii* Turner, *A. obesus* Turner, *A. perkinsi* Turner, *A. pretiosus* Turner, *A. spinicornis* Turner, *A. spryi* Turner, and *A. tarsatus* F. Smith.

### **Sagenista** R. Bohart, new genus

TYPE OF GENUS.—*Hoplisis scutellaris* Spinola.

Eyes converging toward clypeus, head broader than long in front view (Fig. 15); mandible with inner subteeth; ocelli normal, front usually with a weakly impressed longitudinal line; basal flagellomere two or three times as long as broad but shorter than scape; male with last four flagellomeres flattened or concave beneath; scutum impunctate, an oblique carina present posterolaterally; omaulus and acetabular carina present; scrobal sulcus weak or absent, sternaulus complete or partial; metapleuron gradually narrowing below; stigmal groove undeveloped; propodeum coarsely areolate (Fig. 12), enclosure striate and/or areolate; forewing media arising before cu-a, posterior veinlet of second submarginal cell shorter than basal veinlet of second discoidal cell; forewing spotted, banded or strongly darkened basally; hindwing media arising at or very slightly beyond cu-a, jugal lobe much larger in outline than tegula; female with foretarsal comb of which three setae are on basitarsus before apex, forepulvillus of female much larger than other pulvilli (Figs. 16, 17); midtibia with two apical spurs, female midtibia stoutly produced at upper apex and bearing a finger-like spine (Fig. 11); gastral segment I rather narrow to moderately stout but swelling evenly into II; female pygidium plate-like, most of disc slightly raised and punctate as opposed to terminal smooth part (Fig. 3); male with seven visible tergites, sternites without fimbriae, sternite VIII usually protruding and sting-like (Fig. 14).

*Sagenista* is closely related to *Hoplisoides* Gribodo but differs from it by the coarsely areolate propodeum in conjunction with the smooth scutum, enlarged female forepulvillus, distinctive female pygidium and oddly spined midtibia. The genus is found in the Neotropical Region from Mexico to southern Brazil. Described species are: *S. austerus* Handlirsch, *S. brasiliensis* Shuckard, *S. cayennensis* Spinola, *S. scutellaris* Spinola, *S. seminiger* Dahlbom, and *S. sepulchralis* Handlirsch.

### **Pterygorytes** R. Bohart, new genus

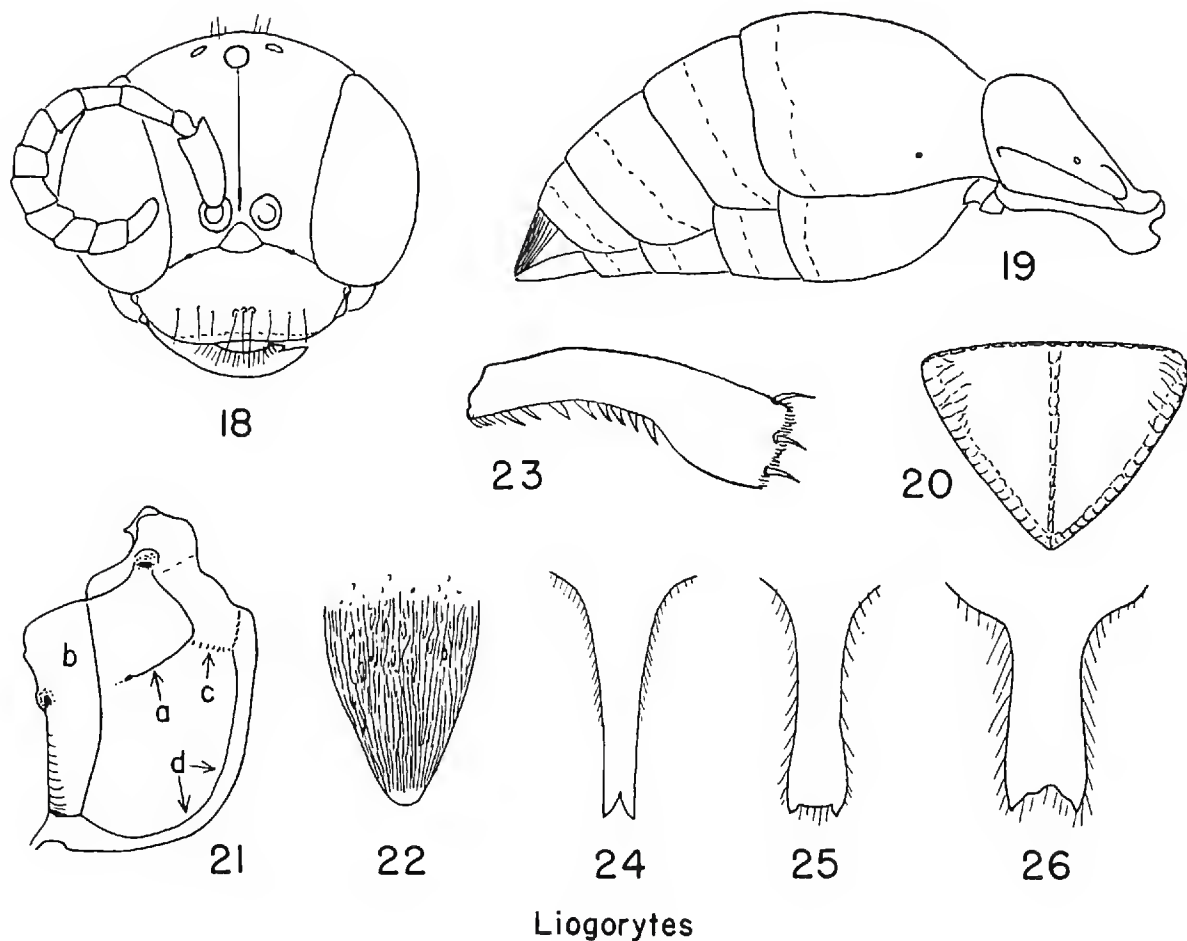
TYPE OF GENUS.—*Gorytes valens* W. Fox

Eyes converging strongly toward clypeus (Fig. 4); mandible subapically dentate within; ocelli normal, an impressed line from midocellus to interantennal area; basal flagellomere more than twice as long as broad; scutum densely punctate, an oblique carina present posterolaterally opposite tegula; omaulus, sternaulus and acetabular carinae absent (Fig. 5); episternal-scrobal sulcus distinct; meta-

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Pygidium of female. Fig. 14. Male sternite VIII, sclerotized part. Fig. 15. Face of female. Fig. 16. Hind pulvillus of female. Fig. 17. Forepulvillus of female, to same scale as Fig. 16.



**Liogorytes**

Figs. 18–22. Features of *Liogorytes catarinae*, new species, female paratype. Fig. 18. Face. Fig. 19. Gaster, profile. Fig. 20. Propodeal enclosure. Fig. 21. Meso- and metapleura; a, episternal-scrobal sulcus; b, metapleura; c, forward extension of episternal-scrobal sulcus; d, omaulus-sternaulus. Fig. 22. Pygidium. Fig. 23. Male mid basitarsus of *L. catarinae*, holotype. Figs. 24–26, male sternite VIII, sclerotized part. Fig. 24. *L. catarinae*, holotype. Fig. 25. *L. anaetis* (Pate), Willcox, Arizona. Fig. 26. *L. patagonicus* (Fritz), paratype, Rio Negro, Argentina.

pleuron abruptly and strongly narrowed below, stigmatal groove absent; scutum, scutellum, metanotum and propodeum divided by simple suture, fitting smoothly and flatly (as in *Stizus*); forewing media arising before cu-a, posterior veinlet of second submarginal cell about one-seventh as long as first discoidal cell, shorter than preceding attached veinlet, and shorter than basal veinlet of second discoidal cell (Fig. 6); basal area of forewing costal margin gently convex; hindwing media diverging a little in front of cu-a which is nearly straight, jugal lobe undeveloped; foretarsal comb present, fore basitarsus with three long setae on outer edge before apex, forepulvilli much larger than others; midtibia with two apical spurs; gaster stout, sternite II swollen subbasally and topped by a median shiny tubercle; pygidium plate-like, densely covered with stout setae (Fig. 7) (as in *Tachytes*). Male unknown.

The phylogenetic position of *P. valens* and the related *P. triangularis* F. Smith, both species from Brazil, has never been evaluated. Both species descriptions were based largely on markings and it was not

until I studied the type of *P. triangularis* at the British Museum and the syntypes of *P. valens* by courtesy of the Carnegie Museum, that the peculiarities became evident. The thoracic structure is remarkably Stizine but the wings with a normal-sized first submarginal cell are clearly Gorytine. The only Gorytini without an omaulus are the South African *Handlirschia* Kohl, with nearly parallel inner eye margins, and the Old World *Ammatomus* Costa in which the jugal lobe of the hindwing is well developed. I am designating one of the three syntypes of *P. valens* as a lectotype, the other two as paralectotypes. All are from Chapada da Santa Anna, Mato Grosso, Brazil. The type of *P. triangularis* came from Pará, Brazil.

### **Neoplisus** R. Bohart, new genus

TYPE OF GENUS.—*Gorytes notabilis* Handlirsch

Eyes converging strongly toward clypeus (Fig. 8); mandible subapically dentate within; ocelli normal, an impressed line from midocellus to interantennal area; basal flagellomere about two (females) or less than two (males) times as long as broad; last four or more articles of male antenna with polished spots beneath; scutum impunctate, an oblique carina present posterolaterally opposite tegula; omaulus and sternaulus well developed, acetabular carina discernible at midventer only; scrobal sulcus continued to omaulus by a gently curved groove; metapleuron gradually narrowed below; stigmal groove hardly evident, disappearing in lower one-half; propodeum smooth, lateral grooves of enclosure not pitted; forewing media arising before cu-a, posterior veinlet of second submarginal cell shorter than basal veinlet of second discoidal cell, not more than one-fifth as long as first discoidal cell, and shorter than preceding attached veinlet, basal lobe of forewing costal margin gently curved outward; hindwing media diverging before cu-a which is strongly curved or angled near forward end, jugal lobe much larger in outline than tegula; foretarsal comb present in female, weak in male; female fore basitarsus with three or four flattened setae on outer edge before apex, female forepulvilli larger than others; midtibia with two apical spurs; female with a plate-like pygidium with many longitudinal striae, the apex smooth (Fig. 10); male with seven visible tergites, sternites IV–VI without specialized hairs, VIII deeply bifurcate and usually appearing as two protruding spines (Fig. 9).

*Neoplisus* has been treated previously under *Gorytes*, to which it is obviously related. It differs from other gorytines by the combination of (1) oblique lateral scutal carina, (2) second submarginal cell of forewing with posterior veinlet shorter than preceding attached veinlet, (3) omaulus distinct, (4) hindwing with media diverging before cu-a and with jugal lobe larger in outline than tegula, (5) stigmal groove indistinct, (6) lateral sulci of propodeal enclosure simple lines, (7) male sternite VIII bispinose (Fig. 9). The genus seems confined to South America except for the type species which ranges northward into Mexico and *N. balteatus* which occurs in Guatemala. In *Neoplisus*

I have placed the following: *N. balteatus* Cameron, *N. bergii* Handlirsch, *N. bruchi* Schrottky, *N. cearensis* Ducke, *N. facilis* F. Smith, *N. foxii* Handlirsch, *N. fumipennis* F. Smith, *N. imitator* Handlirsch, *N. notabilis* Handlirsch, *N. partitus* W. Fox, *N. polybia* Handlirsch, *N. schrottkyi* Fritz, and *N. specialis* F. Smith.

### **Liogorytes** R. Bohart, new genus

TYPE OF GENUS.—*Liogorytes catarinae* R. Bohart, new species

Eyes converging moderately towards clypeus (Fig. 18); mandible subapically dentate within; ocelli normal, an impressed line from midocellus to interantennal area; basal flagellomere 2.0 to 3.0 (females) or 1.5 to 2.0 (males) times as long as broad; last four articles of male antenna concave and polished beneath; scutum smooth to coarsely (but not densely) punctate, an oblique carina present posterolaterally opposite tegula; omaulus and sternaulus well developed, no acetabular carina; scrobal sulcus continued at an oblique angle forward and downward toward omaulus from juncture with episternal sulcus proper (Fig. 21); metapleuron gradually narrowed below; stigmatal groove present; groove between scutum and scutellum coarsely pitted; lateral grooves of propodeal enclosure pitted or "stitched" (Fig. 20), in one species (*L. anaetis* Pate) carinulae extending obliquely over most or all of enclosure, median groove well developed; forewing media arising before cu-a, posterior veinlet of second submarginal cell less than one-sixth as long as first discoidal cell and shorter than basal veinlet of second discoidal cell, basal lobe of forewing costal margin moderately to rather strongly bowed out; hindwing media diverging 0.1 to 1.0 midocellus diameter before cu-a which is rather strongly curved or angled anteriorly, jugal lobe much larger in outline than tegula; foretarsal comb present in female and including three long setae on outer edge of basitarsus before apex, female pulvilli all similar in size; midtibia with two apical spurs; male mid basitarsus usually curved and spinose in front (Fig. 23); gaster narrowed basally, sometimes subpedunculate or stoutly pedunculate; female with plate-like and longitudinally striate pygidium, smoother at apex (Fig. 22); male with seven visible tergites, sternite without specialized hairs, VIII plainly notched at apex (Figs. 24-26).

This genus is confined to the New World and except for one rather atypical species from southwestern United States (*L. anaetis*) it is South American. Some of the species have been described in *Harpactostigma* Spinola and have been compared with its type species, *H. velutinum* Spinola, from Chile. However, I consider this and others from North America previously placed in *Harpactostigma* to belong in *Oryttus* Spinola, which has several Palearctic species. *Liogorytes* differs from *Oryttus* most obviously in the angular forward production of the episternal-scrobal sulcus (Fig. 21-c). Also, the female forepulvilli of *Liogorytes* are not larger than those on other legs. Additional characters which taken together distinguish *Liogorytes* from all other *Gorytini* are (1) hindwing media not diverging beyond cu-a, (2) omaulus present (Fig. 21), (3) oblique scutal carina present opposite tegula, (4) pos-

terior veinlet of second submarginal cell shorter than basal veinlet of second discoidal cell, and (5) frons longitudinally grooved. Named species are: *L. anaetis* Pate, *L. catarinae* R. Bohart (described below), *L. cordobensis* Fritz, *L. joergenseni* Brèthes, *L. llanoi* Fritz, *L. patagonicus* Fritz, and *L. uncinatus* Brèthes.

**Liogorytes catarinae** R. Bohart, new species

(Figs. 18–24)

HOLOTYPE MALE (U. C. Davis).—Length 10 mm. Black, marked with yellow as follows: obscure mark on hind tibia, moderate apical bands on tergites II to VII and sternites II to VI; wings reddish brown, lighter distally in posterior one-half of second submarginal cell, posterior two-thirds of third submarginal, and nearly all of second discoidal. Pubescence minute, fulvous and rather velvety. Punctuation faint on clypeus, frons and sternites, practically absent elsewhere except for pitting of anterior scutellar groove and of sulci of propodeal enclosure. Eyes moderately converging below; superior metapleural pit and supracoxal pit unusually large (as in Fig 21); mid basitarsus curved and spinose in front (Fig. 23); basal costal swelling of forewing moderate; hindwing media diverging distinctly before cu-a which is strongly curved anteriorly; sternite VIII narrowly but deeply notched at apex (Fig. 24).

FEMALE.—Face (Fig. 18), clypeus more strongly punctate below than in male, clypeus and least interocular distance a little broader, flagellomere I about twice as long as broad, flagellum moderately clavate, pygidium finely, densely, longitudinally striate (Fig. 22).

*Holotype male*, NOVA TEUTONIA, SANTA CATARINA, BRAZIL, January, 1965 (F. Plaumann). Paratypes, 1 male and 2 females (UCD), same data as holotype except for dates: November, 1951; November, 1960; December, 1964.

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**Bionomics of *Grotea californica* Cresson, with a Description  
of the Larva and Pupa**  
(Hymenoptera : Ichneumonidae)

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In America north of Mexico there are two known species of *Grotea*, *G. anguina* Cresson and *G. californica* Cresson. Observations on the biology of *G. anguina* have been made by Graenicher (1905) and Rau (1922; 1928). Graenicher gave a brief description of the egg and cocoon, and made extensive observations on the manner of larval feeding. Rau made several observations on the effect of *G. anguina* on the