

New species of *Euglossa*. III. The *bursigera* species group (Hymenoptera: Apidae)

Robert L. Dressler

Smithsonian Tropical Research Institute, Apdo. 2072, Balboa, Rep. of Panama

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Abstract: The group of species allied to *Euglossa bursigera* is characterized and treated as a distinct subgenus, *Glossurella*. A key to the males is provided, and eleven new species are described.

The species allied to *Euglossa bursigera* constitute a very distinctive and interesting group. Only one of these, *E. gorgonensis* Cheesman, was named prior to 1960. Since then, Moure has described seven other species; three were described in the first paper of this series (Dressler, 1978), and an additional eleven species are to be described here. I am sure that several others will appear. The bees of this group are slender and relatively long-tongued, and range from the smallest of the euglossines to quite large. Most species of this group are characterized by the presence on the male second sternum of two semicircular depressions, or "pockets", with diagonal tufts of hair, but other species do not show any sort of depression or tuft at this site. Quite apart from the character of the second sternum, this is a distinctive and easily recognized group. It is so distinctive that I prefer to treat it as subgenus *Glossurella*, the name alluding to their resemblance to the usually larger bees of the subgenus *Glossura* (in the strict sense). I believe that future work may well treat the *stellfeldii* group and the *intersecta* and *rugilabris* groups (these two perhaps together) as distinct subgenera, leaving *Glossura* a much more homogeneous and natural group. Biologically, the members of *Glossurella* are distinctive in building aerial nests, while the members of *Glossura* build concealed, communal nests.

Subgenus *Glossurella*, new subgenus

Mid tibia: Anterior tuft entire; posterior tuft present or lacking, may be divided into two

lobes or two distinct tufts; hind tibia triangular; teeth 2 or 3; sternal tufts in semicircular depressions or quite lacking. Type species: *Euglossa bursigera* Moure.

There are several more or less recognizable species groups within *Glossurella*. The most distinctive is the *crassipunctata* group with *E. crassipunctata*, *E. parvula* and *E. sapphirina*. These are all very small bees with dark blue clypeus, very coarsely punctate episternum and rather coarsely punctate scutum. Less sharply differentiated, but easily recognized, is the *gorgonensis* group, with *E. fuscifrons*, *E. gorgonensis*, *E. hyacinthina*, *E. nigrosignata*, *E. stilbonota*, and *E. trinotata*. These all have the episternum mirror-like with very shallow, sparse punctation, all are rather shaggy with shiny scutum, and most have narrow hind tibiae. *Euglossa dodsoni* and *E. obtusa* form a small group by themselves, with very rounded hind tibia, coarsely punctate episternum and no sternal pockets. *Euglossa augaspis*, *E. bursigera* and *E. prasina* are distinctive in having tridentate male mandibles. The remaining species fall into two series, one, *E. carinilabris*, *E. laevicincta*, *E. macrorhyncha*, and *E. turbinifex* with sternal pockets, and the other, *E. allosticta*, *E. asarophora*, and *E. viridifrons*, without. It seems clear that the loss of sternal tufts has occurred independently three or four times, because we find some species with and others without tufts in both the *crassipunctata* and the *gorgonensis* groups, these being the most distinctive of the species groups. Indeed, *Euglossa parvula* includes some individuals with

rudimentary pockets, and the pockets of *E. trinotata* are very small.

While some of the species described here are known from limited areas, it is interesting that about half of them range very widely in the Amazon basin. Unlike some other groups, notably the *cordata* and *purpurea* species

groups, the species of *Glossurella* are relatively straightforward and easily sorted out. Most species are distinctive enough in size, vestiture and color, that the females are easily matched with the males. Even so, most of the South American species are at present known from males only.

Key to the males of *Glossurella*

- | | |
|---|----------------------------------|
| 1. Sternum II without depressions or tufts | 2 |
| 1. Sternum II with definite depressions and tufts ("pockets") | 11 |
| 2. Mid tibia with two distinct tufts | 3 |
| 2. Mid tibia with only one tuft | 6 |
| 3. Episternum sparsely and shallowly punctate, mirror-like; hind tibia narrow, acute | 4 |
| 3. Episternum coarsely or deeply punctate, not mirror-like; hind tibia broad and rounded behind | 5 |
| 4. Posterior mid-tibial tuft rudimentary; abdomen blue-green | <i>E. fuscifrons</i> , new sp. |
| 4. Posterior mid-tibial tuft well developed; abdomen bronzy | <i>E. gorgonensis</i> Cheesman |
| 5. Scutum bronzy, sparsely punctate (interspaces mostly larger than punctures) | <i>E. dodsoni</i> Moure |
| 5. Scutum green, densely punctate | <i>E. obtusa</i> Dressler |
| 6. Tongue nearly twice body length; large (16 mm) blue-violet bee | <i>E. asarophora</i> Moure |
| 6. Tongue subequal to body or shorter; thorax green or blue-green; smaller bees | 7 |
| 7. Episternum very shallowly and sparsely punctate, mirror-like; hind tibia narrow, flattened distally | 8 |
| 7. Episternum coarsely or deeply punctate, not mirror-like; hind tibia broad, not flattened distally | 9 |
| 8. Mid-tibial velvet area broad, reaching distal end of tibia; abdomen dark green | <i>E. fuscifrons</i> , new sp. |
| 8. Mid-tibial velvet area narrow, not reaching end of tibia; abdomen blue | <i>E. nigrosignata</i> Moure |
| 9. Clypeus blue; episternum coarsely punctate; bee about 9 mm long | <i>E. parvula</i> , new sp. |
| 9. Clypeus green or brownish green; episternum not coarsely punctate; bee 10-12 mm long | 10 |
| 10. White paraoocular markings well developed; bee about 12 mm long | <i>E. allosticta</i> |
| 10. White paraoocular markings absent; bee about 10 mm long | <i>E. viridifrons</i> , new sp. |
| 11. Mandible tridentate | 12 |
| 11. Mandible bidentate | 14 |
| 12. Hind tibia markedly inflated behind, obtuse; posterior mid-tibial tuft subquadrate | <i>E. prasina</i>
new sp. |
| 12. Hind tibia tapering, subacute behind; posterior mid-tibial tuft subcircular or subtriangular | 13 |
| 13. Punctuation of tergum II dense up to the smooth marginal band; bee about 9 mm long; dark green | <i>E. augaspis</i> , new sp. |
| 13. Punctuation of tergum II decreasing in size over a broad band; bee about 11 mm long, usually bronzy | <i>E. bursigera</i> Moure |
| 14. Clypeus blue or blue-violet | 15 |
| 14. Clypeus brownish green or green, at most bluish green | 18 |
| 15. Episternum and scutum very coarsely punctate; small bees, about 9 mm long | 16 |
| 15. Episternum and scutum not very coarsely punctate; larger bees | 17 |
| 16. Bee dark blue throughout | <i>E. sapphirina</i> Moure |
| 16. Abdomen, scutellum and most of scutum green | <i>E. crassipunctata</i> Moure |
| 17. Thorax and abdomen green; posterior mid-tibial tuft with spiral pattern | <i>E. macrorhyncha</i> , new sp. |
| 17. Thorax and abdomen dark blue; posterior tuft without spiral pattern | <i>E. hyacinthina</i> , new sp. |

18. Mid tibia with 3 distinct and separate tufts 19
 18. Mid tibia with 2 tufts, or the posterior tuft with 2 confluent patches 20
19. Abdomen bronze; tergum II very shallowly punctate *E. trinotata*, new sp.
 19. Abdomen green; tergum II deeply punctate medially *E. stilbonota*, new sp.
20. Abdomen bronze; front of antennal scape without ivory spot *E. oleolucens* Dressler
 20. Abdomen green; front of antennal scape with ivory spot 21
21. Base of tergum II with a pronounced smooth band (without punctuation) *E. laevicincta*, new sp.
 21. Tergum II densely punctate basally 22
22. Tergum II densely and deeply punctate; posterior mid-tibial tuft larger than anterior *E.*
 *E. turbinifex* Dressler
 22. Tergum II shallowly and sparsely punctate; mid-tibial tufts subequal *E. carinilabris*, new sp.

1. *Euglossa augaspis*, new sp.

Total length 11 mm; head width 4.3 mm; abdominal width 4.2 mm.

Color: Ivory paraocular markings well developed; forward side of antennal scape 3/5 ivory; front of clypeus bluish green with black median keel; sides of clypeus, paraocular areas, upper frons, episternum, scutum and scutellum all green with golden hues; abdomen dark green above, green with golden hues beneath; hind tibia blue-green.

Vestiture: Plumose hairs of thorax short, tawny; hairs on scutum dark brown.

Punctuation: On clypeus coarse and uneven; on episternum punctures deep and dense, with punctures larger than interspaces; on scutum dense, with some interspaces larger than punctures; on scutellum larger and well separated, with scattered micropunctures; on terga II and III fine and very dense, with narrow smooth marginal bands.

Tongue subequal to body; mandibles tridentate; labrum subquadrate with median keel; clypeus with rounded median keel; scutellum rounded, the margin slightly concave medially behind, about half as long as wide, convex above, without median depression; sternum II with semicircular depressions, each with diagonal tuft of hairs; mid tibia: posterior tuft subcircular, large; anterior tuft ovoid, about as wide as posterior and twice as long; hind tibia subtriangular, acute.

Holotype: Male, Res. Ducke, Manaus, AM., Brazil, 18 Oct. 1968, R.L. Dressler 1156 (U.S.N.M.). **Paratypes:** 10 males from type series, 18, 19 Oct. (Dressler coll. and to be distributed); 3 males, S. Maria de Erebató, Bolívar, Venezuela, Aug. 1973, M. Gaiani (Dressler coll.); 18 males, Leticia, Amazonas, Colombia, 6, 7 June 1974, Dressler 1547 (Dressler coll. and to be distributed); 21 males, Lullapichis, Rio Pachitea, Huánuco, Peru, 27 Jan.–11 Feb. 1975, Dressler 1600 (Dressler coll. and to be distributed).

This shiny little bee is fairly common in the Amazon area, and it is easily confused with the equally common *E. stilbonota*, but *E. augaspis* is easily distinguished by the tridentate mandibles and the form of the mid-tibial tufts. From *E. prasina* it is distinguished by the very acute, blue-green hind tibia. This species seems to be most closely related to *E. bursigera*, but *E. augaspis* is a distinctly smaller bee, and the punctuation of the abdomen is much denser. The epithet, *augaspis*, or "shining shield", refers to the very shiny scutum. *Euglossa augaspis* has been collected visiting the flowers of *Notylia buchtienii* and *Catasetum reichenbachiana*; also, several specimens have been collected with pollinaria of a *Galeandra*, probably *G. stangeana*, and one bee from Peru bears the stipe of a small-flowered *Catasetum*. This species is strongly attracted to vanillin, and also has been collected by the use of benzyl acetate, cineole, eugenol and methyl salicylate. Specimens of this species have been provisionally identified as "RD 135".

2. *Euglossa carinilabris*, new sp.

Total length 12 mm; head width 4.5 mm; abdominal width 4.2 mm.

Color: Ivory paraocular markings well developed, wider below; forward side of antennal scape ivory; front of clypeus blue-green with black median keel; sides of clypeus, paraocular areas, upper frons, episternum, scutum, and scutellum golden green; abdomen green with golden hues above, golden green beneath; hind tibia green with golden hues.

Vestiture: Plumose hairs of thorax short, tawny; hairs on scutum brown, rather dense.

Punctuation: On clypeus coarse and irregular; on episternum small, shallow and sparse, with interspaces larger than punctures; on scutum punctures small and evenly distributed, with interspaces about as large as punctures; on scutellum larger and sparser, with many micropunctures; on tergum II small, shallow and sparse; on III denser.

Tongue about 2.5 mm longer than body, labrum subquadrate, sides curved back, with 3 strong keels; clypeus tricarinate; scutellum rounded subquadrate, the margin slightly concave medially, less than half as long as wide, with slight median depression, convex above; sternum II with semicircular depressions, each with diagonal tuft of hair; mid tibia: posterior tuft ovoid; anterior tuft larger, ovoid, with pale median band; hind tibia triangular, subacute.

Female: Unknown.

Holotype: Male, Itabuna, Bahia, Brazil, 4 Nov. 1968, R.L. Dressler 1207 (U.S.N.M.). **Paratypes:** 2 males of type series, 3,6 Nov. (Dressler coll.); 1 male, Itabuna, 19 Jan. 1971, H. Kennedy (Dressler coll.); 1 male, Coaracá, 1 Nov. 1968, Dressler 1212 (Dressler coll.).

This species is perhaps closest to *E. turbinifex*, which also has the labrum distinctly tricarinate, but *E. carinilabris* is a much larger bee and has much sparser

tergal punctation. The epithet refers to the prominently tricarinate labrum. One of the bees was collected at cineole, and the others at eugenol.

3. *Euglossa fuscifrons*, new sp.

Total length 10.7 mm; head width 4.3 mm; abdominal width 4.5 mm.

Color: Ivory paraocular markings well developed, much wider below; forward side of antennal scape 2/5 ivory; front of clypeus green below, brown above, with brown keels; sides of clypeus and paraocular areas green; upper frons blue-green; episternum bottle green with golden hues; scutum and scutellum blue-green; abdomen blue-green with golden hues above, dark green with golden hues beneath; hind tibia blue-green.

Vestiture: Plumose hairs of thorax dense, tawny, darker above; hairs on scutum dark brown, dense.

Punctuation: On clypeus coarse and irregular; on episternum fine, shallow and sparse, mirror-like; on scutum fine and sparse, interspaces 2-3 times puncture diameter; on scutellum coarser, with some micropunctures; on tergum II punctures small, dense, becoming very small behind; coarser on III.

Tongue about 3 mm longer than body; labrum subquadrate, with strong median keel; clypeus with strong median keel, weaker laterals; scutellum rounded, about half as long as wide, without median depression, convex above; sternum II without pockets or tufts; mid tibia: posterior tuft tiny; anterior narrowly ovoid; hind tibia narrowly triangular, narrowly obtuse.

Female: Unknown.

Holotype: Male, Veracruz, Napo, Ecuador, 3 Feb. 1969, D. Velástegui (U.S.N.M.). **Paratypes:** 1 male, type locality, 8 Feb. 1969, D. Velástegui (Dressler coll.); 1 male, Rio Tena, 5 May 1969, D. Velástegui (Dressler coll.); 2 males, Rio San Mi-

guel, 4 Feb. 1971, H. Kennedy (Dressler coll.); 1 male, Cueva de Las Pavas, Tingo Maria, Huánuco, Peru, 6 Sep. 1972, E.W. Stiles (Dressler coll.); 2 males, Puerto Asis, Putumayo, Colombia, 2 Feb. 1972, H. Kennedy (Dressler coll.).

This bee resembles *E. stilbonota*, but it is much larger and differs in the rudimentary posterior mid-tibial tuft and the distally flattened hind tibia. The epithet refers to the distinctly brownish clypeus characteristic of the species. These bees have been collected by the use of cineole and eugenol. Specimens of this species have been provisionally identified as "UM 5".

4. *Euglossa hyacinthina*, new sp.

Total length 12 mm; head width 4.8 mm; abdominal width 4.6 mm.

Color: Ivory paraocular markings well developed, wider below; forward side of antennal scape ivory; front of clypeus dark blue-violet with black median keel; sides of clypeus and paraocular areas dark blue-green; upper frons dark blue-violet; episternum and scutellum dark blue-green; scutum blue-violet in front, shading to dark blue-green behind; abdomen blue-green basally, shading to blue-violet, green ventrally; hind tibia very dark blue-green.

Vestiture: Plumose hairs of thorax moderately long and dense, gray-tawny, dusky above; hairs on scutum long and black.

Punctuation: On clypeus punctures coarse and uneven; on episternum small and sparse, interspaces about as large as punctures; on scutum and scutellum small and sparse; on tergum II fine and dense, with wide smooth marginal band; on III slightly coarser.

Tongue subequal to body; labrum slightly longer than wide, with median keel; clypeus markedly protuberant, with low median keel; scutellum rounded, about half as long as wide, strongly biconvex above; sternum II with 2 semicircular depressions, each with diagonal tuft of hairs; mid tibia: posterior tuft large, circular; anterior tuft

oblong, about as wide as posterior and twice as long, light gray anteriorly, dark behind; hind tibia narrowly triangular, abruptly obtuse.

Female: Unknown.

Holotype: Male, Fortuna dam site (82° 10' W, 8° 44' N), Chiriquí, Panama, 14, 15 Nov. 1977, R.L. Dressler 1690 (U.S.N.M.). **Paratypes:** 23 males of type series (Dressler coll. and to be distributed); 5 males, same locality, 24 Nov. 1976, Dressler 1652 (Dressler coll.).

At first glance, this beautiful bee resembles *E. asarophora*; it differs superficially in the shorter tongue and somewhat smaller size. On close inspection, it proves to have distinct sternal pockets, which distinguish it from *E. asarophora* and all other large, blue-violet euglossas. The epithet refers to its dark blue coloration. These bees were collected with methyl cinnamate and cineole, and one of them bore a pollinarium of *Chondrorhyncha bicolor* (or a close ally).

5. *Euglossa laevicineta*, new sp.

Total length 11.9 mm; head width 4.6 mm; abdominal width 4.5 mm.

Color: Ivory paraocular markings well developed; forward side of antennal scape 3/5 ivory; front of clypeus blue-green; sides of clypeus, paraocular areas and upper frons green with golden hues; episternum golden green; scutum dark green with golden hues; scutellum and dorsal abdomen green with golden hues; ventral abdomen bronzy green; hind tibia golden green.

Vestiture: Plumose hairs of thorax tawny, dusky above, dense; hairs on scutum short, dark brown, dense.

Punctuation: On clypeus coarse and irregular; on episternum of medium size, sparse, the interspaces larger than punctures; on scutum punctures small, dense, varying in size; on scutellum larger and sparse, with some micropunctures; on tergum II basally smooth, medially dense, the punctures

asymmetric, becoming smaller and sparser behind; coarser on III.

Tongue about 3 mm longer than body; labrum subquadrate, with median keel; clypeus with weak median keel; scutellum rounded subquadrate, less than half as long as wide, with weak median depression, weakly convex above; sternum II with semi-circular depressions, each with diagonal tuft of hair; mid tibia: posterior tuft subcircular; anterior tuft elliptic-ovoid, twice as long as posterior; hind tibia triangular, subacute.

Female: Unknown.

Holotype: Male, 19 km SW Kourou, French Guiana, 22 Feb. 1972, C.D. Michener (U.S.N.M.). **Paratypes:** 4 males collected with the type (Dressler coll. and to be distributed); 6 males, Leticia, Amazonas, Colombia, 6-9 June 1974, Dressler 1545 (Dressler coll.); 1 male, Yarinacocha, Loreto, Peru, 29 Aug. 1972, E.W. Stiles & D.L. Pearson (Dressler coll.); 2 males, 25 km S Riberalta, Beni, Bolivia, 30 Sep. 1972, D.L. Pearson (Dressler coll.); 1 male, Res. Ducke, Manaus, AM., Brazil, 20 Oct. 1968, Dressler 1691 (Dressler coll.).

This distinctive bee is widespread, but good series are available only from French Guiana. It somewhat resembles *E. carinilabris* and *E. turbinifex*, but the labrum is not clearly tricarinate, and the broad smooth band (without punctation) at the base of tergum II distinguishes this from all other known species. The epithet refers to this features. Bees were collected especially at methyl salicylate, but a few were also collected at eugenol and vanillin.

6. *Euglossa macrorhyncha*, new sp.

Total length 11.5 mm; head width 4.7 mm; abdominal width 4.5 mm.

Color: Ivory paraocular markings present, very narrow above, wider below; front side of antennal scape ivory; front of clypeus blue-violet with black median keel; sides of clypeus and paraocular areas bottle green with golden hues; upper frons blue-green; episternum golden green; scutum and

scutellum dark golden green; abdomen dark green above, golden green beneath; hind tibia golden green.

Vestiture: Plumose hairs of thorax long and dense, dusky, paler beneath; hairs on scutum brown, rather long and dense.

Punctation: On clypeus coarse above and laterally, irregular; on episternum small and sparse, interspaces 2-3 times puncture diameter; on scutum of medium size, dense, with interspaces about equal to puncture diameter; on scutellum larger and sparser, asymmetric, with few micropunctures; on terga II and III fine and dense with wide smooth marginal bands.

Tongue about 3 mm longer than body; labrum subquadrate with median keel; clypeus strongly protuberant, with weak median keel; scutellum rounded, about half as long as wide, with very strong median depression, the margin flattened medially, biconvex above; sternum II with semi-circular depressions, each with diagonal tuft of hair; mid tibia: posterior tuft subcircular, with spiral pattern; anterior tuft ovoid, larger than posterior; hind tibia triangular, subobtusate;

Female: Similar to male, but with frons blue-green and scutum more densely punctate; scutellar tuft large, more than 2/3 scutellar length.

Holotype: Male, Santo Domingo, Pichincha, Ecuador, emerged 21 Aug. 1967, R.L. Dressler 725 (U.S.N.M.). Allotype female, from same nest as type, emerged 15 Aug. 1967 (U.S.N.M.). **Paratypes:** 1 male, 3 females from type nest (Dressler coll.); 1 male, 20 km W Cali, 6500', El Valle, Colombia, 5 Aug. 1972, E.W. Stiles (Dressler coll.).

This species is primarily known from nests collected between Santo Domingo de los Colorados and Quito. The nests were found with those of *E. turbinifex* and were superficially identical (see Dressler 1978, Fig. 1). Specimens of *E. macrorhyncha* are distinctly larger than those of *E. turbinifex*, and may be distinguished easily by the

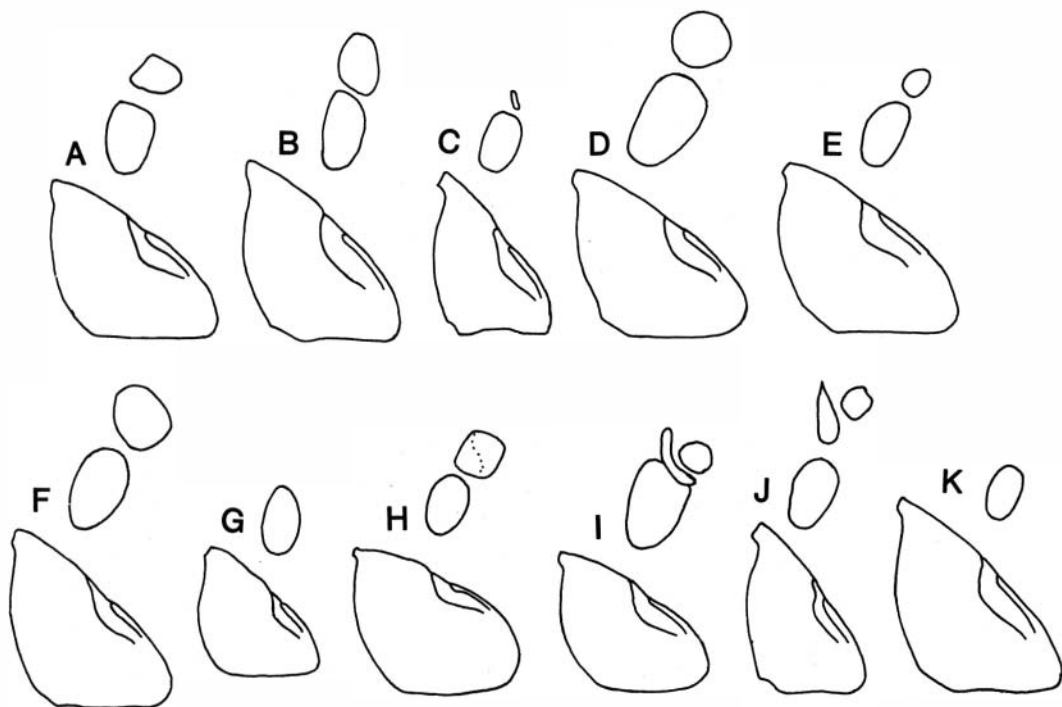


Fig. 1. Outlines of mid-tibial tufts (above) and hind tibiae (below). All drawn with camera lucida; tufts at greater magnification than tibiae. (A) *E. augaspis*. (B) *E. carinilabris*. (C) *E. fuscifrons*. (D) *E. hyacinthina*. (E) *E. laevicincta*. (F) *E. macrorhyncha*. (G) *E. parvula*. (H) *E. prasina*. (I) *E. stilbonota*. (J) *E. trinotata*. (K) *E. viridifrons*.

more protuberant clypeus (blue in the male) and the strongly biconvex, rounded scutellum. At least one male has been collected by the use of cineole. Specimens of this species have been provisionally identified as "RD 725".

7. *Euglossa parvula*, new sp.

Total length 8.7 mm; head width 3.8 mm; abdominal width 3.7 mm.

Color: Ivory paraocular markings well developed, slightly wider below; forward side of antennal scape black; front of clypeus dark blue-violet, with black median keel; sides of clypeus and paraocular areas bottle green; upper frons dark blue-violet; episternum green; scutum dark blue in front, green behind; scutellum green; abdomen dark green above and beneath; hind tibia blue-green.

Vestiture: Plumose hairs of thorax sparse, tawny; hairs on scutum mostly black.

Punctuation: On clypeus deep, coarse; on episternum coarse; on scutum punctures large and deep, with many interspaces larger than punctures; on scutellum larger, sparser, with scattered micropunctures; on tergum II fine and dense, with narrow smooth marginal band; coarser on III.

Tongue subequal to body; labrum subquadrate, with median keel; clypeus with rounded median keel; scutellum subquadrate, margin medially straight behind, less than half as long as wide, without median depression; sternum II without "pockets", or with only slight depressions; mid tibia: posterior tuft lacking or minute; anterior tuft ovoid; hind tibia triangular, subacute.

Female: Unknown.

Holotype: Male, Leticia, Amazonas, Colombia, 6 June 1974, R.L. Dressler 1553 (U.S.N.M.). **Paratypes:** 10 males of type series, 6-9 June (Dressler coll. and to be distributed); 1 male, S. Maria de Erebató,

Bolívar, Venezuela, Aug. 1973, M. Gaiani (Dressler coll.); 6 males, Lullapichis, Rio Pachitea, Huánuco, Peru, 29 Jan.-- 14 Feb. 1975, Dressler 1608 (Dressler coll. and to be distributed); 1 male, Res. Ducke, Manaus, AM., Brazil, 20 Oct. 1968, Dressler 1165 (Dressler coll.); 1 male, I.P.E.A.N., Belém, Pará, 27 Oct. 1968, Dressler 1204 (Dressler coll.); 1 male, Belém, *Notylia bipartita*, 27 Dec. 1965, A. Rebello (Dressler coll.).

In the field I have invariably mixed this tiny bee with *E. crassipunctata* (or a very close ally), but under the microscope it is easily separated from this and other species of its group by the lack of both posterior mid-tibial tuft and sternal tufts. The epithet refers, of course, to the small size of the bee. The Rebello specimen from Belém (collected at *Notylia* flowers) has two pollinaria of *Paphinia*. The pollinaria are very small, and suggest that there may be an undescribed *Paphinia* near Belém. Another specimen from Belém has a *Gongora* pollinarium. Most specimens were collected at vanillin, but a few were attracted to methyl salicylate.

8. *Euglossa prasina*, new sp.

Total length 9.9 mm; head width 4 mm; abdominal width 3.8 mm.

Color: Ivory paraocular markings well developed, wider below; forward side of antennal scape 3/4 ivory; front of clypeus blue-green; sides of clypeus and paraocular areas golden green; upper frons dark green; scutum and scutellum dark green with golden hues; abdomen dark green above, golden green beneath; hind tibia green with golden hues.

Vestiture: Plumose hairs of thorax short, tawny, dense behind; hairs on scutum short, dark brown, dense.

Punctuation: On clypeus deep and irregular; on episternum of medium size, with some interspaces as large as punctures; on scutum small and dense; on scutellum larger and sparser, with many micropunctures; on tergum II fine and dense; coarser on III.

Tongue slightly longer than body; mandibles tridentate; labrum wider than long, with median keel; clypeus tricarinate; scutellum rounded subquadrate, margin slightly concave medially behind, about half as long as wide, without median depression, convex above; sternum II with small semi-circular depressions, each with diagonal tuft of hair; mid tibia: posterior tuft subquadrate with 2 pale patches; anterior tuft ovoid, about as wide as posterior; hind tibia subtriangular, obtuse.

Female: Unknown.

Holotype: Male, Leticia, Amazonas, Colombia, 6 June 1974, R.L. Dressler 1550 (U.S.N.M.). **Paratypes:** 9 males of type series, 6,7 June (Dressler coll. and to be distributed); 1 male, Dawa, Tapakuma, Pomeroon, Guyana, 29 Mar. 1970, C. Dodson (Dressler coll.); 1 male, Limoncocha, Napo, Ecuador, 16 Aug. 1972, E.W. Stiles (Dressler coll.); 1 male, Iquitos, Peru, *Gongora maculata*, 6 Oct. 1967, C.H. Dodson (Dressler coll.); 1 male, 25 km S Riberalta, Beni, Bolivia, 11 Oct. 1972 D.L. Pearson (Dressler coll.).

This rather ordinary green bee has tridentate mandibles, and is at once distinguished from *E. bursigera* and *E. augaspis* by the much more rounded hind tibia. Though still scarce in collections, it is widespread. The epithet, *prasina*, is another Latin word for green, of which we need a number to deal with this genus. This species has been collected at vanillin, and less frequently at cineole. Specimens of this species have been provisionally identified as "RD 1550".

9. *Euglossa stilbonota*, new sp.

Total length 10 mm; head width 4 mm; abdominal width 3.6 mm.

Color: Ivory paraocular markings well developed, wider below; forward side of antennal scape ivory; front of clypeus blue-green, with black median keel; sides of clypeus and paraocular areas bottle green; upper frons blue-green; episternum golden green; scutum and scutellum dark green

with golden hues; abdomen dark green above, golden green beneath; hind tibia dark green with golden hues.

Vestiture: Plumose hairs of thorax long, tawny, dusky above, dense behind; hairs on scutum short, dense, mixed tawny and brown.

Punctuation: On clypeus deep and very irregular; on episternum small and sparse; on scutum small and sparse, varying in size; on scutellum larger, with many micropunctures; on tergum II small, asymmetric, dense, becoming smaller behind; coarser on III.

Tongue about 1 mm longer than body; labrum wider than long, tricarinate; clypeus with strong median keel and weak laterals; scutellum rounded, margin medially straight behind, about half as long as wide, with slight median depression, convex above; sternum II with semicircular depressions, each with diagonal tuft of hair; mid tibia with 3 distinct tufts, the posterior tuft small, oblong; intermediate tuft curved and linear; anterior tuft much larger, ovoid; hind tibia triangular, narrowly obtuse.

Female: Similar to male, but clypeus and upper frons blue-green; scutum, scutellum and dorsal abdomen dark blue-green; scutellar tuft large, about 2/3 scutellar length.

Holotype: Male, 19 km SW Kourou, French Guiana, 22 Feb. 1977, D. Roubik 93 (U.S.N.M.). Allotype female, km 15, SW Kourou, 30 May 1977, D. Roubik 166 (Dressler coll.). **Paratypes:** 1 male, of type series (Dressler coll.); 12 males, I.P.E.A.N., Belém, Pará, Brazil, 23, 24 Oct. 1968, Dressler 1182 (Dressler coll. and to be distributed); 7 males, Res. Ducke, Manaus, AM, 20 Oct. 1968, Dressler 1154 (Dressler coll. and to be distributed); 25 males, Leticia, Amazonas, Colombia, 6-9 June 1974, Dressler 1548 (Dressler coll. and to be distributed).

Euglossa stilbonota is much the smallest of the species with mirror-like episternum, and the form of the mid-tibial tufts will at

once distinguish it from all but the large, bronze *E. trinotata*. The epithet refers to the mirror-like surface of the scutum. About 95% of the specimens have been collected at cineole, but a few have been attracted to eugenol and methyl salicylate. Specimens of this species have been provisionally identified as "RD 1154".

10. *Euglossa trinotata*, new sp.

Total length 11.6 mm; head width 4.4 mm; abdominal width 4.2 mm.

Color: Paraocular bands pale brown, very narrow above, wider below; forward side of antennal scape with pale brown median spot; front of clypeus brownish green with brown median keel; sides of clypeus, paraocular areas and episternum golden green; upper frons dull green; scutum and scutellum dark green with golden hues; abdomen bronze above and beneath; hind tibia bronzy green.

Vestiture: Plumose hairs of thorax long, tawny, dusky above, dense behind; hairs on scutum long, dense, mixed tawny and brown.

Punctuation: On clypeus very irregular; on episternum small and sparse, mirror-like; on scutum small and sparse; on scutellum larger, with many micropunctures; on tergum II small and sparse, becoming smaller behind; coarser on III.

Tongue about 3-4 mm longer than body; labrum subquadrate, tricarinate; clypeus with strong median keel; scutellum rounded, about half as long as wide, with slight median depression; sternum II with small depressions and slight tufts; mid tibia with 3 distinct tufts; posterior small, subcircular; intermediate tuft narrow, curved; anterior tuft larger, ovoid; hind tibia narrowly triangular, narrowly obtuse.

Female: Unknown.

Holotype: Male, Campamento de Pulpapel, Buenaventura, El Valle, Colombia, 1 Feb. 1972, H. Kennedy (U.S.N.M.). **Paratype:** 1 male, collected with type (Dressler coll.).

This species is known from only two specimens, but it is so distinctive that I do not hesitate to describe it. It resembles *E. gorgonensis* and *E. oleolucens*, but the three distinct mid-tibial tufts (to which the epithet refers) immediately distinguish it from these and most other species. Both specimens were collected at cineole.

11. *Euglossa viridifrons*, new sp.

Total length 13 mm; head width 5 mm; abdominal width 4.7 mm.

Color: Ivory paraocular markings lacking; forward side of antennal scape 3/4 ivory; front of clypeus green, with brown keels; sides of clypeus and paraocular areas golden green; upper frons blue-green; episternum bottle green; scutum, scutellum and dorsal abdomen dark green with golden hues; ventral abdomen golden green; hind tibia green with golden hues.

Vestiture: Plumose hairs of thorax short, sparse, tawny, dusky above; hairs on scutum brown, short, dense.

Punctuation: On clypeus coarse, dense and irregular; on episternum sparse, interspaces larger than punctures; on scutum small and dense; on scutellum larger and sparser, with scattered micropunctures; on tergum II fine, but not very dense, becoming smaller behind; coarser on III.

Tongue 2-3 mm longer than body; labrum subquadrate, tricarinate; clypeus with 3 rounded keels, the median strongest; scutellum less than half as long as wide, rounded, slightly concave medially behind, above biconvex with median depression; sternum II without tufts;

mid tibia: posterior tuft lacking; anterior ovoid; hind tibia triangular, subacute.

Female: Unknown.

Holotype: Male IP.E.A.N., Belém, Pará, Brazil, 26 Oct. 1968, R.L. Dressler 1179 (U.S.N.M.). **Paratypes:** 18 males of type series, 23-28 Oct. (Dressler coll. and to be distributed); 4 males, Res. Ducke, Manaus, AM., 19 Oct. 1968, Dressler 1150 (Dressler coll.); 1 male, Leticia, Amazonas, Colombia, 6 June 1974, Dressler 1546 (Dressler coll.); 1 male, Limoncocha, Napo, Ecuador, 3 Jan. 1970, H.A. Hespeneheide (Dressler coll.); 5 males, Lullapichis, Rio Pachitea, Huánuco, Peru, 28 Jan.-16 Feb. 1975, Dressler 1605 (Dressler coll.).

Euglossa viridifrons resembles *E. allosticta*, but is distinctly smaller and lacks paraocular white markings. The epithet, "green face", refers to this feature. Most specimens have been collected at skatole, but a few have been attracted to cineole and vanillin. Specimens of this species have been provisionally identified as "RD 1150".

RESUMEN

Se destaca las características principales del grupo de especies aliadas a *Euglossa bursigera* y se les coloca dentro del subgénero *Glossurella*. Se incluye una clave para los machos y se describe once especies nuevas.

LITERATURE CITED

- Dressler R.L. 1978. New species of *Euglossa* from Mexico and Central America. *Rev. Biol. Trop.*, 26: 167-185.