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STUDIES ON NEOTROPICAL POMPILIDAE (HYMENOPTERA)

I. THE GENUS *AGENIOIDEUS* ASHMEAD IN SOUTH AMERICA

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The rich pompilid fauna of the neotropics has unfortunately been subjected to a good deal of bad taxonomy. The reasons are the usual ones: workers have been content to erect new species and genera without having seen the types of described species, which are widely scattered throughout Europe and North and South America; each worker has tended to use his own system of classification; and many parts of the neotropics remain very inadequately collected. The two papers of Nathan Banks on the South American Pompilidae [Bull. Mus. Comp. Zool., 96: 311-525 (1946), and 99: 371-486 (1947)] are useful, but suffer from all three of these deficiencies as well as from Banks' failure to cite references and his failure to cover quite a number of described species.

It will be many years before the taxonomy of the neotropical Pompilidae can be brought to a reasonably high level. In the meantime, I hope to publish a series of short papers covering such segments of the fauna as I am able to work out to my satisfaction. In addition to the specimens which Banks studied, I have seen much additional material from southeastern Brazil collected by Fritz Plaumann, several collections made in Chile and Peru by Luis Peña, and the material from a recent trip to Peru, Chile, and Argentina by C. C. Porter of Harvard University. I shall also make use of other material as available, including specimens from my own collecting in Mexico, Central America, and the West Indies. A review of the subfamily Pompilinae in Mexico and Central America is being published elsewhere (Mem. Amer. Ent. Soc., in press).

The genus *Agenioideus* is primarily characteristic of the warmer parts of the Holarctic region. There is considerable structural diversity within the genus, but the group nevertheless holds together well on the basis of wing venation, the weak development of the pulvillar pad and comb, and other features which I outlined in 1950 (Trans. Amer. Ent. Soc., 75: 189). One of the four North American species is confined to Mexico, two others range from southern United States into Mexico, and another (*humilis* Cresson) ranges all the way from southern Canada to Panama.

Banks did not regard *Agenioideus* as occurring in South America. However, three of the four species which he included in *Sericopompilus* do, in fact, belong in *Agenioideus*. The fourth species, *exilis* Banks, has only two submarginal cells and other features characteristic of the genus *Euplaniceps*, to which genus this species is here reassigned. To the best of my knowledge, *Sericopompilus* does not occur in South America. The three species of *Agenioideus* (which I regard as only two) are closely related and somewhat divergent from the North American *Agenioideus*, although still falling readily within that genus. Although the females lack a tarsal comb, as in the subgenus *Gymnochaeres*, the over-all resemblance is perhaps greatest to *Agenioideus sensu stricto*. A new subgenus, *Enbanksia*, is here proposed for this group. This group may represent the descendants of a stock of *Agenioideus* which succeeded in entering South America sometime during the Tertiary and which underwent a small radiation there.

A review of this small group seems justified at this time not only to clarify the correct generic position of these species, but also to properly characterize the male sex. Of the males assigned by Banks to South American *Sericopompilus*, only one (the allotype of *accoleus* Banks) properly belongs with this group. Also, Banks made several errors of fact which should be corrected; for example, he stated that the clypeus of the type of *accoleus* is "fully three and one-half times as broad as long" when in fact it measures $2.4 \times$ as broad as long. He also did not have sufficient material to appreciate the variation in some of the characters used, for example in the dentition of the claws.

ENBANKSIA new subgenus

Type species. — *Sericopompilus accoleus* Banks, 1947.

Subgeneric characters. — Small wasps (4–9 mm), the females (and males of one species) with banded wings, both sexes with the tibial spurs entirely white and with a white spot near the base of the hind tibiae; males with the apical abdominal tergite white;

integument smooth and polished, except the front sometimes micropunctuate; body virtually without erect setae but extensively clothed with silvery pubescence, which is especially conspicuous on the posterior slope of the propodeum. Clypeus wider than lower face, truncate, with a slightly raised apical rim; antennae relatively short for the genus, third segment in the female not equal to the upper interocular distance, in the male not much if any longer than second segment; ocelli in a broad, flat triangle. Thoracic dorsum forming a rather smooth arc except the scutellum and metanotal disc prominent, somewhat compressed; pronotum sloping smoothly in front, its posterior margin broadly angulate or subangulate; postnotum somewhat polished, constricted on the midline; propodeal slope smooth and even; middle and hind tibiae strongly spinose, but the front tarsus without a comb, the apical tarsal segments not spined beneath. Claws dentate, the tooth sometimes close to the outer ray, such that the claws appear almost bifid; fore tarsal claws of male alike, both dentate. Wing venation similar to that of other *Agenioideus* (see Evans, 1950, Trans. Amer. Ent. Soc., 75: 190, fig. 58). Abdominal segments showing no strong tendency to telescope; male subgenital plate moderately compressed, simple (Figs. 3, 4); male genitalia without basal hooklets, but with some stout setae arising from a lobe at the base of the digitus (Figs. 1, 2).

Remarks. — This subgenus is named for N. Banks, who described all its presently known components.

KEY TO SPECIES AND SUBSPECIES

Females

1. Antennae short, third segment $2.0-3.5 \times$ as long as thick, equal to $.35-.45 \times$ the upper interocular distance; wings with only one strong band, sometimes with a weak second band over the basal vein; legs beyond the basal part of the femora rufous. 1. *minutus* (Banks)
- Antennae longer, third segment $4.5-5.0 \times$ as long as thick, equal to $.65-.80 \times$ the upper interocular distance; wings strongly twice-banded; legs fuscous, at least in large part 2
2. Pronotum and mesoscutum ferruginous, except the former with some pale yellow markings; front relatively narrow, middle interocular distance $.56 \times$ transfacial distance. 2a. *accoleus accoleus* (Banks)
- Pronotum and mesoscutum fuscous, except the former with pale yellow markings on the collar and often along the posterior margin; front broader, middle interocular distance $.59-.61 \times$ transfacial distance. 2b. *accoleus lucanus* (Banks)

Males

1. Wings clear hyaline, with a whitish bloom; legs rufous beyond basal parts of femora; third antennal segment wider than long; subgenital plate narrowly truncate apically (Fig. 3).....1. *minutus* (Banks)
Wings banded; legs mostly fuscous; third antennal segment longer than wide; subgenital plate subacute apically (Fig. 4).....2
2. Pronotum, mesoscutum, scutellum, metanotum, and upper part of mesopleura ferruginous; middle interocular distance $.59 \times$ transfacial distance2a. *accoleus accoleus* (Banks)
Thorax black; middle interocular distance $.62-.66 \times$ transfacial distance.....2b. *accoleus lucanus* (Banks)

1. *AGENIOIDEUS* (*ENBANKSIA*) *MINUTUS* (Banks) new combination

Sericopompilus minutus Banks, 1947, Bull. Mus. Comp. Zool. Harvard, 99: 435. [Type: ♀, BRAZIL: Tres Lagoas, Matto Grosso, 6-10 Dec. (Cornell Univ. Exped.) (Cornell Univ.)]

Female. — Length 5.0–6.5 mm; fore wing 4.6–6.0 mm. Black, except as follows: pronotum with pale yellow markings on the collar and along the posterior margin; clypeus and mandibles rufo-testaceous, the latter darker apically; antennae rufo-testaceous except second and apical few segments usually somewhat infuscated; legs beyond the trochanters (or at least beyond the

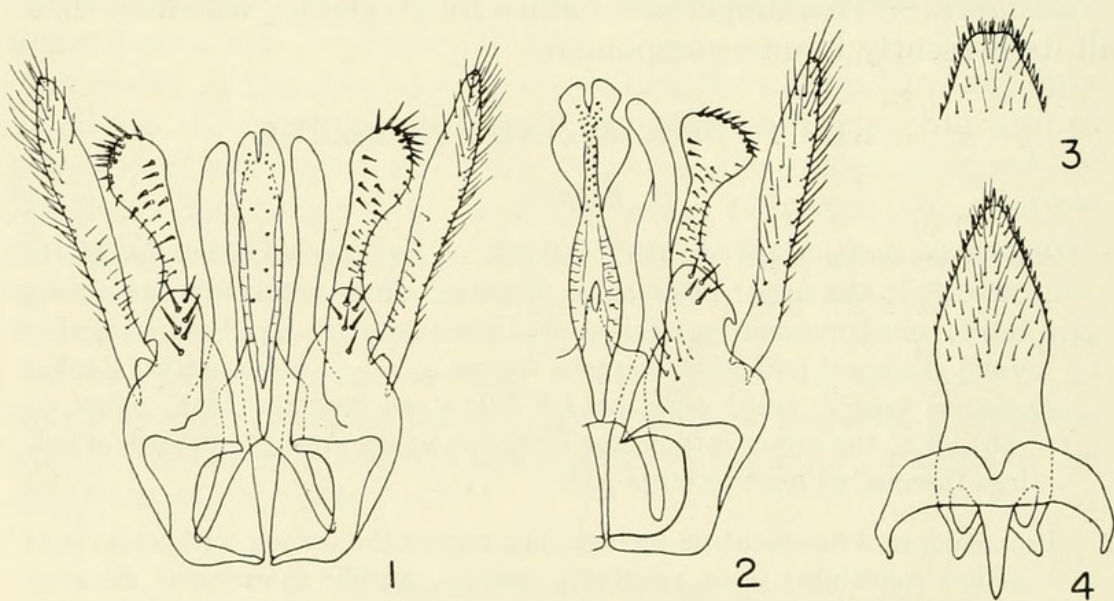


Fig. 1. Male genitalia of *Agenioideus* (*Enbanksia*) *minutus* (Banks), ventral aspect.

Fig. 2. Same of *A.(E.) accoleus lucanus* (Banks), left side omitted.

Fig. 3. Tip of subgenital plate of male *A.(E.) minutus* (Banks).

Fig. 4. Subgenital plate of male *A.(E.) accoleus lucanus* (Banks).

middle of the femora) bright rufo-castaneous; fore wings with a strong brown band from the marginal cell through the outer discoidal cell, some specimens weakly tinged with brown around the basal vein. Clypeus $2.9 \times$ as wide as high. Front broad, middle interocular distance $.65-.69 \times$ transfacial distance; upper interocular distance $.88-.94 \times$ lower interocular distance; POL : OOL = 4:3. Third antennal segment three only slightly if at all longer than four, measuring $2.0-3.5 \times$ as long as thick, $.35-.45 \times$ upper interocular distance. Propodeum somewhat more strongly convex and abdomen stouter than in the species which follows. All claws weakly dentate.

Male. — Length 5–6 mm; fore wing 4–5 mm. Black; pronotum marked with pale yellow on the collar and in a broad band along the posterior margin; coxae, trochanters, and basal parts of femora black, legs otherwise ferruginous except tarsi dusky; apical half of mandibles rufo-testaceous; antennae dark brown except scape pale beneath; wings clear hyaline, with a whitish bloom, veins and stigma brown. Clypeus $3 \times$ as wide as high, truncate. Head broad, vertex forming a strong arc above the eye tops; front broad, middle interocular distance $.67-.69 \times$ transfacial distance; upper and lower interocular distances subequal, but middle interocular distance $1.2-1.3 \times$ upper interocular distance; POL:OOL = 7:4. Third antennal segment very small, slightly wider than long, not longer than segment two or more than half the length of four. Postnotum slightly shorter than metanotum; propodeum in profile forming a somewhat higher arc than in the following species. Subgenital plate narrowly truncate apically (Fig. 3); genitalia as shown in Figure 1.

Distribution. — Southern Brazil, Paraguay, and eastern Peru.

Specimens examined. — 8 ♀♀, 3 ♂♂. BRAZIL: 7 ♀♀, 1 ♂, Nova Teutonia, Santa Catarina, Nov.–Feb. (F. Plaumann) [Mus. Comp. Zool., Cornell Univ., Coll. G. R. Ferguson]; 1 ♀, Tres Lagoas, Matto Grosso [type, Cornell Univ.]. PARAGUAY: 1 ♂, Caacupe, Oct. 25, 1955 (F. Schade) [Coll. G. R. Ferguson] PERU: 1 ♂, Avispas, Madre de Dios, 400 meters, Sept. 10–30, 1962 (L. Peña) [Mus. Comp. Zool.].

2a. AGENIOIDEUS (ENBANKSIA) ACCOLEUS ACCOLEUS (Banks) new combination

Sericopompilus accoleus Banks, 1947, Bull. Mus. Comp. Zool. Harvard, 99: 433. [Type: ♀, BRAZIL: Maracajú, Matto Grosso, Apr.–May 1937 (G. Fairchild) (Mus. Comp. Zool.)]

Female. — Length 8.5 mm; fore wing 8.7 mm. Dark brownish-fuscous except as follows: mandibles and clypeus pale ferruginous, the latter with yellow blotching on each side; basal two antennal segments pale ferruginous, the remainder brownish; pronotum and mesoscutum ferruginous, except the collar marked with pale yellow and the posterior pronotal margin indistinctly marked with yellowish; front tibiae and tarsi testaceous; wings hyaline, fore wing with a strong brown band across the basal vein and a broader band across the wing at the marginal cell. Clypeus $2.4 \times$ as wide as high. Front relatively narrow, middle interocular distance $.56 \times$ transfacial distance; upper interocular distance $.80 \times$ lower interocular distance; POL : OOL = 8:5. Third antennal segment $5 \times$ as long as thick, $.8$ as long as the upper interocular distance. Slope of propodeum low and even, median line somewhat impressed. Claws strongly dentate, the inner ray acute, in the front tarsi the two rays rather close together, subparallel.

Male. — Length 7 mm; fore wing 6.5 mm. Dark brownish-fuscous except pronotal collar marked with pale yellow, remainder of pronotum ferruginous; mesoscutum, scutellum, metanotum, and upper two-thirds of the mesopleura also ferruginous; antennae brown except scape whitish below, flagellum testaceous below; legs brown except for the usual spot on the hind tibiae and the pale spurs; fore wings with a dark band at the marginal cell as in the female, but with only a weak, narrow infuscation at the basal vein. Clypeus $2.5 \times$ as wide as high. Front rather narrow, middle interocular distance $.59 \times$ transfacial distance; upper interocular distance very slightly exceeding lower interocular; POL : OOL = 7:5; vertex weakly humped at the ocellar triangle. Third antennal segment rather short although longer than second, measuring about $1.2 \times$ as long as thick. Postnotum nearly as long as metanotum; slope of propodeum very low and even. Terminalia as described under *accoleus lucanus*.

Distribution — Brazil (states of Matto Grosso and São Paulo).

Specimens examined. — Only the type and allotype, the latter from Campinas, São Paulo, March 1924 (F. X. Williams) [Mus. Comp. Zool.].

2b. *AGENIOIDEUS* (ENBANKSIA) *ACCOLEUS LUCANUS* (Banks) new status, new combination

Sericopompilus lucanus Banks, 1947, Bull. Mus. Comp. Zool., Harvard, 99: 434. [Type: ♀, BRAZIL: Nova Teutonia, Santa Catarina, 25 Jan. 1939 (F. Plaumann) (Mus. Comp. Zool.)]

Female. — Length 6.5–8.5 mm; fore wing 6.5–9.0 mm. Black, except as follows: mandibles and clypeus pale ferruginous, the latter sometimes with obscure yellowish blotching, sometimes infuscated on the upper half; basal 2.0–2.5 antennal segments testaceous; pronotum marked with pale yellow on the collar and usually with a more or less complete yellowish band along the posterior margin; legs fuscous, front tibiae and tarsi somewhat paler than the remainder; wings banded as in the nominate subspecies. Middle interocular distance $.59-.61 \times$ transfacial distance; upper interocular distance $.82-.86 \times$ lower interocular. Third antennal segment $4.5-5.0 \times$ as long as thick, equal to $.65-.75 \times$ upper interocular distance. Claws of front tarsus variable, the inner ray close to the outer ray or somewhat removed from it. Other features as described for *a. accoleus*.

Male. — Length 6.0–6.5 mm; fore wing 5.0–5.5 mm. Dark brownish-fuscous except mouthparts and clypeus rufo-testaceous, basal two antennal segments and under side of segment three (and sometimes four) testaceous, front legs beyond the trochanters and also middle tibiae sometimes rufo-testaceous; wings banded as in female but the band over the basal vein weak. Middle interocular distance $.62-.66 \times$ transfacial distance; upper and lower interocular distances subequal. Third antennal segment $1.3-1.6 \times$ as long as thick, sometimes barely shorter than fourth segment. Subgenital plate subacute apically (Fig. 4). Genitalia differing from those of *minutus* in having both the aedoeagus and the digiti more broadly expanded apically (Fig. 2).

Distribution — Southern Brazil (Santa Catarina).

Specimens examined. — 13 ♀♀, 4 ♂♂, all from Nova Teutonia, Santa Catarina, Oct.–March (F. Plaumann) [Mus. Comp. Zool., Coll. G. R. Ferguson].

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