

A Brazilian *Psenulus* (Hymenoptera, Sphecidae, Psenini)

by

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ABSTRACT. — A female of *Psenulus improvisus* sp. nov. is described as the first *Psenulus* from Brazil. New records of the related *P. aztecus* Bohart & Grissell and *P. mayorum* Bohart & Grissell, both originally recorded from Mexico, are given. Erythrization in *P. aztecus* and geographical variation of *P. mayorum* are discussed.

Thus far only one specimen belonging to the genus *Psenulus* was known from South America, namely a male of *P. mayorum* Bohart & Grissell collected in Venezuela. This species was first recorded from Mexico and together with the Mexican *P. aztecus* Bohart & Grissell belongs to a group which differs considerably from the nearctic representatives of the genus. This group is mainly characterized by the narrow interantennal carina and the structure of the pygidium of the female, the pygidial area itself being reduced to a minute triangle.

To my surprise I found, amongst material received from Dr. R. M. Bohart, University of California, Davis, U.S.A. (UCD), a relatively large female specimen of a *Psenulus* from Brazil. It was collected by Mr. Fritz Plaumann at Nova Teutonia, the locality where this gentleman has been collecting for many years. We may safely assume that *Psenulus* is scarcely represented in Brazil and, probably, in the rest of Central South America.

I take this opportunity to thank Dr. Bohart for his kindness in allowing me to study his material. My gratitude is also extended to Drs. L. Masner, W. R. M. Mason and C. M. Yoshimoto of the Entomology Research Institute, Ottawa (CNC), to Mr. Colin R. Vardy, British Museum (Natural History), London (BM), Dr. C. van Achterberg and Mr. C. van Heijningen, Rijksmuseum van Natuurlijke Historie, Leiden (ML) and Dr. A. S. Menke, National Museum of Natural History, Washington, D. C. (USNM). Mrs. Drs. C. van Driel-Murray, Leiderdorp, was again so kind as to read and correct the English text.

Psenulus improvisus sp. nov.

Female. — Length about 9.5 mm. Head and thorax black. Base of mandibles yellowish, rest of mandibles brown, palpi yellowish-brown. Underside of scape of antennae yellow, underside of basal half and of apex of flagellum reddish-brown. Pronotal tubercles, tegulae and veins of wings brown, stigma pale brown. Foreside of fore femora, fore tibiae and foreside of mid tibiae yellow, posterior surface of tibiae and tarsi dark brown. Gaster black, but first tergite except for large black mark reddish, last gastral segment dark brown.

Frons and vertex smooth and shining, posterior ocelli with lateral sharply defined narrow groove, a similar groove in front of anterior ocellus. POD somewhat smaller than OOD. Raised part of frontal carina somewhat thickened, dorsally rounded and shining (fig. 1). Frontal carina ending below in a transverse carina. Below this carina a shallow circular depression. Clypeus convex, densely finely punctate, interstices about size of punctures. Median part of clypeus raised, narrowly protruding (fig. 1), margin dull, very slightly emarginate. Clypeal margin on either side of projection with deep semicircular depression. Mandibles bidentate. Occipital carina distinct, especially lower part, foreside crenulate, dorsally somewhat curved, below ending in hypostomal carina. Antennae clavate, segments 7-11 shorter than broad.

Foreside of pronotum bordered by a high carina which is emarginate in the middle; pronotal corners rounded. Lower margin of propleura almost straight. Scutum shining, densely finely punctate, interstices larger than punctures. Prescutal sutures sharp on anterior $\frac{2}{3}$ of scutum. Parapsidal sutures sharply defined. Scutellum shining, almost impunctate. Propodeal enclosure shining, laterally with oblique carinae. Behind propodeal enclosure a broad smooth and shining area, back of propodeum dull, densely reticulato-carinate, separated from smooth area by a finely striate zone. Sides of thorax shining, indistinctly punctate; anterior oblique suture

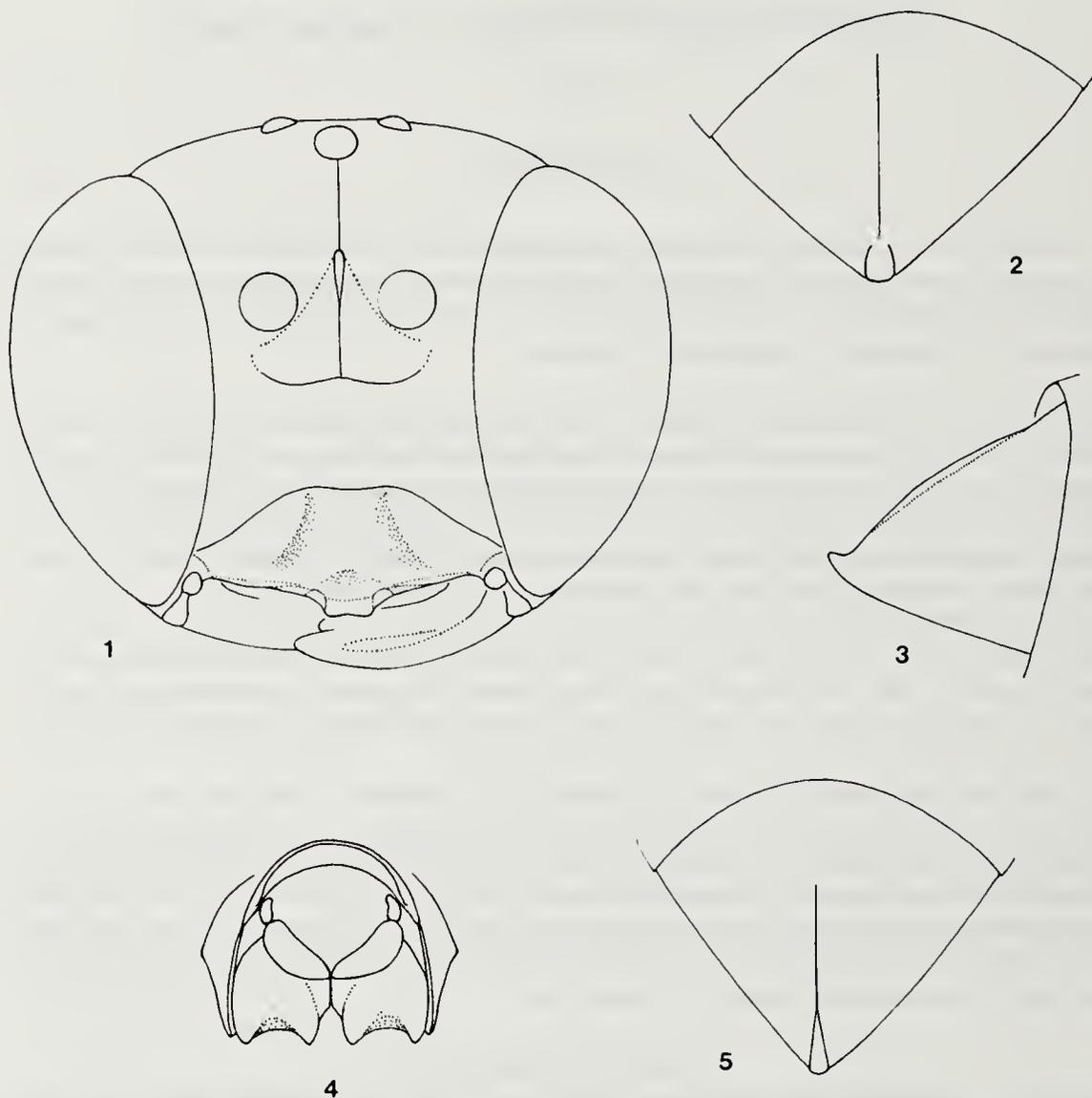


Fig. 1-3. *Psenulus improvisus* sp. nov., ♀, holotype. 1, head; 2-3, sixth gastral tergite with pygidial area, dorsal and lateral aspect. Figs. 4-5. *Psenulus mayorum* Bohart & Grissell, ♀, Trinidad. 4, pronotum in frontal aspect with propleura; 5, sixth gastral tergite with pygidial area.

foveolate, widened upper part with a few longitudinal carinae. Mesosternum finely punctate. Lower part of propleura not distinctly dentate. Legs normal. Second recurrent vein of fore wings ending in third submarginal cell. Petiole about twice length of first tergite, almost cylindrical, dorsally somewhat flattened, posteriorly with narrow depression. First tergite slightly longer than broad. Last tergite with long narrow median keel which is about as long as normally exposed part of tergite, in lateral view somewhat raised in the middle (fig. 3); apex of tergite with minute, apically blunt pygidial area (fig. 2).

Face with silvery pubescence, mostly appressed; greater part of clypeus with erect hairs only. Vertex, dorsal and lateral sides of thorax with long golden-brown hairs, pubescence on scutellum and metanotum denser and more golden. Mesosternum and lower part of back of propodeum greyish-white pubescent. Epicnemia with patch of dense yellowish-brown pubescence. Gaster and wings with short brownish pubescence. Along margin of dorsal side of petiole a row of fine short hairs, laterally and ventrally some long erect hairs. Sternites 4-5 entirely with short and dense yellowish-brown pubescence.

Male unknown.

Brazil: 1 ♀, holotype, Nova Teutonia, 27°11' latitude, 52°23' longitude, 300—500 m, Nov. 1968, Fritz Plaumann (UCD).

The pygidial area of *P. improvisus* and the median carina of the last tergite are similar to those of *P. aztecus* and *P. mayorum*. The occipital carina is curved as in *P. aztecus*, while the clypeal margin much resembles that of *P. mayorum*.

Psenulus aztecus Bohart & Grissell

Bohart & Grissell, 1969, *Pan-Pacif. Ent.* 45: 219—220; ♂, Mexico. Van Lith, 1977, *Ent. Ber., Amst.* 37: 45—47; ♀ and ♂, Mexico.

The description of the female of this species was based on five specimens with black gaster and one female with gaster beyond petiole red, all collected in Sinaloa, Mexico. Since then additional material was received, collected in the states of Morelos and Chiapas, Mexico. It now seems likely that *P. aztecus* is one of the few Psenini which, at least in the female sex, exhibit considerable erythrization in the southeastern part of their area of distribution (cf. *Pluto rufibasis* (Malloch)). A female from Morelos has a black pronotum and gaster and all trochanters are dark; seven females from Chiapas in the southeast of Mexico have a yellow pronotum, their gaster beyond the petiole is red and all trochanters are yellowish. The female with red gaster, earlier (Van Lith, 1977) recorded from Sinaloa has also all of the trochanters yellowish, but its pronotum is dark.

It may be that the damaged female from Veracruz, then recorded as an unnamed new species (Van Lith, 1977), is either an extremely brightly coloured variety of *P. aztecus* or a geographical subspecies thereof. The gaster including the petiole and the entire hind legs are reddish, the dorsal side of the pronotum is yellowish-white.

The males from Jalisco (holotype) and Sinaloa have a black pronotum, in the male from Morelos it is partly yellow, in that of the males from Chiapas more extensively yellow. The gaster is always black or dark brown, the hind margins of the tergites sometimes narrowly whitish (discoloured?). The colour of the trochanters varies, in the male from Morelos they are all yellowish.

New records: Morelos: 1 ♀ and 1 ♂, 7.3 mi south Yautepec, 3000 ft, 15 Aug. 1962, Marston and Naumann (University of Kansas); dark form. Chiapas: 4 ♀, 20 mi north Huixtla, 3000 ft, 6 June 1969, W. R. M. Mason; 1 ♂, 32 mi west San Christobal Junction 190—195 Highways, 12 May 1969, H. J. Teskey; 2 ♀, San Christobal las Casas, 7200 ft, 6 June 1969, Malaise trap; 1 ♀ and 3 ♂, Muste, 440 m, near Huixtla, 17 Aug.-19 Nov. 1970, Malaise trap, Welling (CNC); all females from Chiapas have a red gaster.

Psenulus mayorum Bohart & Grissell

Bohart & Grissell, 1969, *Pan-Pacif. Ent.* 45: 216—219; ♀, Mexico.
Van Lith, 1977, *Ent. Ber., Amst.* 37: 47—48; ♂, Venezuela, Honduras.

New record from Venezuela: 1 ♀, Aragua, 2 km north of Ocumare De La Costa, 21—22 June 1976, A. S. Menke and D. Vincent (USNM).

First record from Surinam: 1 ♂, Paramaribo, 10 Nov. 1960, P. H. van Doesburg Jr., coll. P. Vreeden (ML).

First records from Trinidad: 4 ♀ and 3 ♂, St. George, St. Augustine, 15 June-13 Aug. 1976, Malaise trap, J. S. Noyes (BM).

According to the description of the holotype female its pubescence is mostly silvery, yellowed on vertex and scutum. The four females from Trinidad are entirely whitish pubescent, the pubescence of the face is silvery and appressed.

The female from Venezuela and the male from Surinam are rather different, with frons, vertex, pronotum, scutum, scutellum and metanotum distinctly pale golden. The face of the female from Venezuela is also purely pale golden, that of the male from Surinam is silvery. The face of the male recorded earlier from Venezuela is also silvery. These differences in the colour of the pubescence may point to geographical variation. Additional specimens, from Mexico as well as from South America would be welcome for further study of this problem.

If the base of the second gastral tergite is sufficiently exposed, a lateral red spot can be seen. These spots are also more or less distinct in the females from Trinidad.

The propleura differ from those of *P. aztecus* and *P. improvisus*; the ventral margin is distinctly bidentate in frontal aspect (fig. 4). In *P. aztecus* and *P. improvisus* this margin is almost straight. Usually, however, these parts are concealed by the fore legs or the head. The pygidial area of the female of *P. mayorum* (fig. 5) is somewhat narrower than that of *P. improvisus* (fig. 2).

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