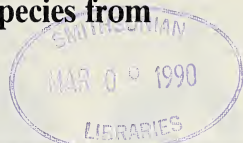


# *Bombus krusemani* – a new bumblebee species from Guatemala (Hymenoptera: Apidae)

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*Abstract:* A new species of bumblebee, *Bombus krusemani*, is described. The description is based on 7 queens and 3 workers all taken by the author near Antigua, Guatemala in November 1988. The new species is apparently closely related to *B. brachycephalus* Handlirsch and therefore most likely to be assigned to the subgenus *Fraternobombus* Skorikov.

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## Introduction

Western hemisphere bumblebees were extensively described by Franklin (1913, 1915) and later by Milliron (1971, 1973) who unfortunately did not live to complete his monograph. Frison (1925/26) described a number of new forms and Cockerell (1949) reported on bumblebees in Honduras. Central America seems to possess a fairly distinct bumblebee fauna of its own. Of the bumblebees found in North America only two taxa, viz. *Bombus pennsylvanicus pennsylvanicus* (Degeer, 1773) and *B. rufocinctus* Cresson, 1863 occur in Mexico. A few others transgress slightly the USA-Mexican border.

Some South American bumblebees also occur in Central America. *Bombus pullatus* Franklin, 1913 – an entirely black species – is found up to South Mexico. *Bombus voluceloides* (Gribodo, 1892) and *B. melaleucus* Handlirsch, 1888 occur also in Panama and Costa Rica.

Collecting of bumblebees in Central America seems to have been limited in recent decades. Kruseman was active in El Salvador in 1952 as his captures preserved in the Zoological Museum, Amsterdam witness. Milliron collected in Mexico in 1962. The author has collected in Mexico, including parts of Chiapas adjacent to Guatemala, in 1984 and 1988. From available data it would appear that hardly any recent collecting has taken place in Guatemala. The most recent years of collecting

given by Milliron (1973) are 1949 and 1951. Earlier captures reported by Franklin (1915) were by G. C. Champion who took the types of *B. albioniger* Franklin, 1915 near Zunil. One of the worker types of *B. digressus* Milliron, 1962 came from Val de Fuego, Guatemala. Published records of *B. wilmattae* Cockerell, 1912 are also mainly from Guatemala.

It is thus perhaps not entirely surprising that an hitherto unknown species has been recently taken by the author in that country.

## *Bombus krusemani* nov. spec.

The following description is based on seven queens and three workers taken on November 9th and 10th, 1988, 17 km South of Antigua Guatemala, along a dirt road (No. 14) leading to Esquintla in the valley between the extinct volcanoes Agua and Fuego at 1350 m altitude – the latter information taken from maps available in Antigua of the Instituto Geografico Militar.

The queens all carried pollen on the corbiculae and are pretty worn. The workers look much fresher. No males were seen. Obviously at the time of collecting nests had been recently established.

The type series was collected on *Salvia polystachya* Ortega together with *B. mexicanus* Cresson, 1878 (1 queen, 7 workers and 3 males) and *B. wilmattae* (6 workers).

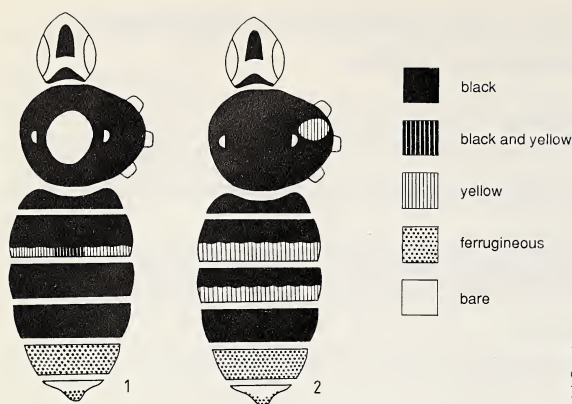


Fig. 1-2. Colour pattern of holotype queen of *Bombus krusemani* n.sp. 1, holotype queen; 2, a worker.

The holotype and a paratype worker are deposited in the Zoological Museum, Amsterdam. The other specimens are in the collection of the author.

### Description

#### Queen

*Length*: 18-20 mm; interalar width 5.7-6.2 mm (average 5.8 mm).

*Head*: slightly higher than wide. Ocelli well below supraorbital line, situated in an arch; distance as between ocelli about as wide as their diameters. Clypeus broader than high, convex and covered with mostly coarse punctures and some finer ones in the middle. Malar space about half the distal width, about equal to the third antennal segment (A3). A3 a little less than twice as long as A5; A4 equal to A5. Labral furrow broad. Weak but distinct sulcus obliquus and no incisura lateralis.

*Legs*: mid basitarsus with posterior angle obtuse. Corbicula black.

*Pile*: rather short but not very dense, showing chitineous covering not only on thorax but also on abdomen where the hairs are decumbent on tergites 2, 3 and 4.

*Colour*: head, thorax, and legs black. Abdominal tergite 1 black with a few reddish-brown hairs laterally, distal two thirds of tergite 2 black, basal third yellow, in the middle mixed

with blackish brown hairs; tergite 3 and 4 black, tergite 5 ferruginous brown with a few blackish hairs interspersed in the middle; tergite 6 with short blackish hairs, ferruginous near sting. Venter black (fig. 1).

*Wings*: strongly hyaline, brownish-black.

*Variation*: Four queens differ from the holotype in the reduction of the yellow colouration on tergite 2 to a basal fringe and the presence of ferruginous hairs on the lateral sides on tergite 5 only.

#### Worker

*Length*: 13 mm, interalar width 3.8 mm. Morphological characteristics similar to those of the queen. Pubescence not decumbent but bristle-like. Chitineous covering shows also on the thorax in these not worn specimens.

*Colour*: two of the three workers show the same colouration as the holotype. The third one has a patch of pale yellow on the pleura below the wing basis; the basal third of tergite 3 is also yellow (fig. 2).

The new species is in colouration unlike any of the known Central American bumblebees and the four infringing species mentioned above. There is no other bumblebee in the Western Hemisphere in which the only yellow on the abdomen is the basal part of the second tergite.

### Etymology

This new species is named in honour of Dr. G. Kruseman, retired keeper of the Entomological Department of the Zoological Museum, Amsterdam who stimulated and accompanied the author's youthful first phase of bumblebee collecting and thus established an apparently ineradicable interest.

### Discussion

In this paper the traditional species concepts are retained following Richards (1968). The more recent division of bumblebees in several genera as proposed by Tkalcu (1972) and elaborated by Reinig (1981) and Rasmont (1983) is not adopted here. Recent publications on Western Hemisphere bumblebees do not use this system either (Thorp et al., 1983, Laverly & Harder, 1988).

It is difficult to place this new species unequivocally into a subgenus. Using Richards' (1968) keys one arrives at *Fraternobombus* Skorikov, 1922. Franklin's keys (1913) lead to *Bombus brachycephalus* Handlirsch, 1888. *Bombus krusemani* may indeed be close to that species which was placed in *Fraternobombus* by Skorikov (1922). *B. brachycephalus* is quite constant in colouration in the female casts: black with tergites 4-6 light ferruginous, the males being chromatically very variable. Frison (1928) published his *B. neotropicus* as a new species from Guatemala but Milliron (1973b: 261) pointed out that Frison possessed only two variable males of *B. brachycephalus*.

Milliron (1971) placed *B. brachycephalus* in a separate group but his subgeneric division has been criticized. There is no recent world species list, as the one published by Skorikov (1922) is outdated and the comprehensive survey by Rasmont (1983) is limited to European bumblebees up to the Ural.

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