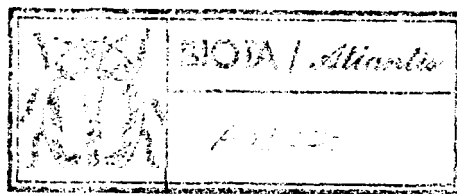


Bombus canariensis Pérez, 1895 n.stat and *B. maderensis* n.sp. from the Macaronesian Islands

STELLAN ERLANDSSON



Erlandsson, S.: *Bombus canariensis* Pérez, 1895 n.stat. and *E. maderensis* n.sp. from the Macaronesian Islands.

Ent. scand. 10:187-192. Lund, Sweden 15 October 1979. ISSN 0013-8711.

J. Pérez (1895) described *Bombus terrestris* var. *canariensis*. This variety now is found to represent a separate species; with reference to the Code article 45:3d (1961) the name *Bombus canariensis* Pérez, 1895 n.stat. is used. On the Island of Madeira *Bombus maderensis* n.sp. of the *B. terrestris*-group was collected in Funchal. It is described and figured here.

S. Erlandsson. Swedish hlus. of nat. Hist., Sect. of Ent., S-104 05 Stockholm, Sweden.

So far one species of the genus *Bombus* s.str. is known from the Canary Islands. Pérez (1893) established that it was different from the true *Bombus terrestris* (L.) and named it var. *canariensis*.

Pittioni (1939) regarded it as a separate species and named it *B. schmidtii*. However, the description is based on a single female and Pittioni seemed to be unaware of earlier names.

Krüger (1954, 1956) described *B. terrestris* from different areas using the term "Ethnos" for specimens characteristic of a certain territory, e.g. the Canary Islands. Vogt (in Krüger 1954:298) writes "Dagegen mochte ich darauf nachweisen, dass Krüger den Begriff "Ethnos" meint nicht in meinen Sinn, sondern als Synonym mit dem Begriff "Population" verwendet."

Bischoff (1937) has determined specimens of *B. terrestris* from Madeira to *U. terrestris* var. *ferrugineus* Schmiedeknecht. These specimens were collected by O. Lundblad and are in the Swedish hlus. of nat. Hist. However, this variety is described from Thüringen in E. Germany (Schmiedeknecht 1878:361) and reported from different localities in Spain (Ceballos 1956:462). I have also seen female and male from the Iberian Peninsula, but *B. terrestris* from Madeira is quite separate from this variety.

During my visits to Madeira and Tenerife I had the opportunity to collect *Bombus*. When seeing the almost black Canarian *Bombus* I believed it to be different from *B. terrestris*. In order to clarify its taxonomic status I compared it with specimens from Madeira and Sweden (terra

loca). From the Canary Islands I only had females and workers at my disposal, but Professor A. Machado, Univ. of La Laguna (Tenerife) very kindly sent me a fine collection of males and workers captured in El Cedro (Gomera). Moreover, I used the collection in the Swedish Mus. of nat. Hist. and small collections captured by K.-J. Hedqvist and L.-Å. Janzon.

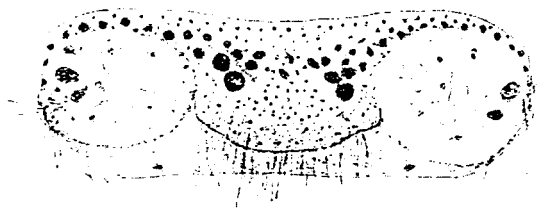
The differences in coloration, the form of the sting and the genital capsule and sternites 7-8 (figs 1-8) were examined.

Pérez (1895:191) gave the following description of *Bombus terrestris* var. *canariensis*: "♀. Entièrement noire, sauf les derniers segments blancs, les poils des tarsi brun-roux." "Dans un individu unique du sexe male, quelques poils jaunâtres seulement, à la partir antérieure du corselet. L'organe copulateur ne présente aucune différence appréciable d'avec l'espèce européenne."

Saunders (1903:218) wrote of *B. terrestris* L. "Numerous ♂♀ and ♀ from various localities in Tenerife. F. A. Bellamy, March and April 1902".

"All specimens are entirely black, with only the apex of the abdomen white. A very unusual variety of this species: the armature, however, is like that of normal species."

Both Pérez and Saunders were of the opinion that there is no differences between the armature of the scape of Canarian and European males. But they only examined the external form of the scape, whereas for detailed investigation of the genitalia and sting it is also necessary to investigate the interior of the genital capsule.



1 a



1 b



1 c

S. G. A. A. I.

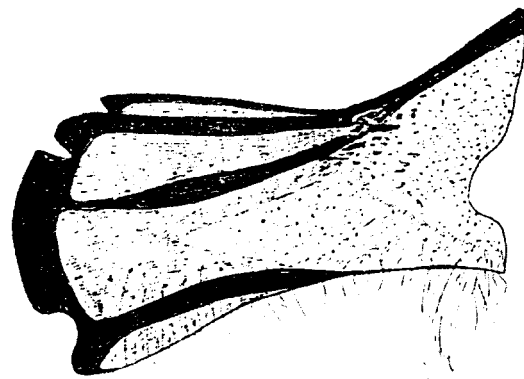
Fig. 1. Labrum of female. - a. *Bombus terrestris*. - b. *B. canariensis*. - c. *B. maderensis*.

Pittioni (1939:253-254) has given a more correct description of the female.

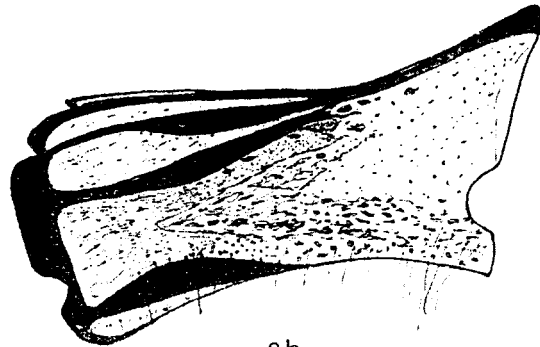
Keys to the Macaronesian *Bombus* ssp.

MALE

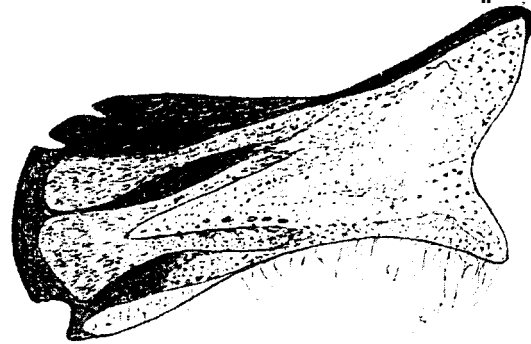
- 1. Specimens black and white. Head black-haired. Clypeus convex, shining, large, punctured. Malar area (fig. 5 b). Antenna (fig. 4 b). Thorax black (some specimens have vestige of yellowish collar). Tergites 1-4 black, 5-7 white. Sternites 7-8 (figs 6 b, 7 b). Genital capsule (fig. 8 b) *Bombus canariensis* Pérez
- Specimens black, white and yellow 2
- 2. Head black-haired, long coat. Clypeus shining, punctured. Malar area (fig. 5 c). Antenna (fig. 4 c). Thorax black with a yellow-ochre collar. Tergite 1 black, 2 yellow-ochre, 3 black, 4-7 white or white-yellow. Sternites 7-8 (figs 6 c, 7 c). Genital capsule (fig. 8 c) *Bombus maderensis* n.sp.



2 a



2 b



2 c

S. G. A. A. I.

Fig. 2. Left mandible of female. - a. *Bombus terrestris*. - b. *B. canariensis*. - c. *B. maderensis*.

- Head black, long hairs. Clypeus shining, convex, closely punctured. Malar area (fig. 5 a). Antenna (fig. 4 a). Thorax black with a more or less wide sulphurous-yellow to yellow collar. Tergite 1 black, 2 yellow, 3 and anterior part of 4 black, posterior part of 4-7 white. Sternites 7-8 (figs 6 a, 7 a). Genital capsule (fig. 8 a) *Bombus terrestris* (L.)

QUEEN, WORKER

- 1. Specimens black and white. Labrum with acute

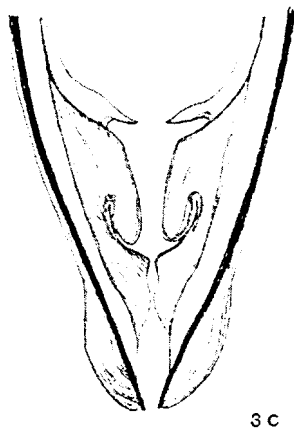
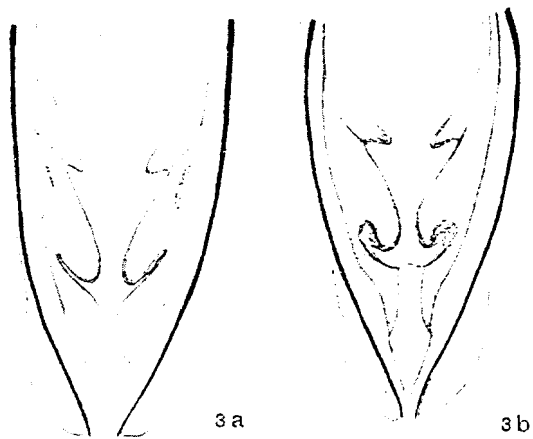


Fig. 3. Dorsal end of sting. - a. *Bombus terrestris*. - b. *B. canariensis*. - c. *B. maderensis*.

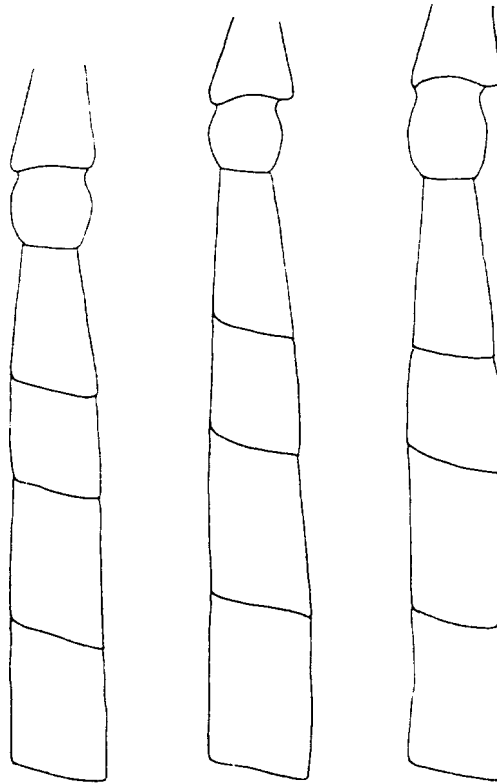


Fig. 4. Male, antennal segments 2-6. - a. *Bombus ferrugineus*. - b. *B. canariensis*. - c. *B. maderensis*.

- lamella in marpin with dark yellow hairs (fig. 1 b). Thorax black. Tergites 1-3 black. Sternites 4-5 yellow-red, ciliated. Dorsal end of sting (fig. 3 b) *Bombus canariensis* Pérez
- Specimens black, white and yellow 2
2. Labrum partly with large dots, on each side a shining spot. Lamella in marpin almost pale, level with red-yellow hairs (fig. 1 c). Thorax black with broad yellow-ochre collar. Tergite 1 black. 2 wide yellow-ochre, 3 black. Sternites 4-5 in marpin with long ciliae. Dorsal end of sting (fig. 3 c) *Bombus maderensis* n.sp.
- Labrum on each side with a large punctated spot (fig. 1 c). Thorax black with a more or less wide sulphurous-yellow collar. Tergite 1 black. 3 sulphurous-yellow, 3 black. Sternites 4-5 with white hairs. Dorsal end of sting (fig. 3 a) *Bombus terrestris* (L.)

Bombus canariensis Pérez. 1895 n.stat.
Figs 1-8, b.

Bombus sorocënsis (F.) by Brullé 1839.
Bombus sorocënsis (F.) by Gribodo 1883

- Bombus terrestris* (L.) var. *canariensis* Pérez. 1895.
Bombus terrestris (L.) by Saunders 1903.
Bombus terrestris canariensis Pérez by Dusmet 1924.
Bombus terrestris canariensis Pérez by Bischoff 1937.
Bombus schmidtii Pittioni. 1939.
Bombus terrestris canariensis Pérez by Altena 1949.
Bombus terrestris Rasse canariensis by Krüger 1956.
Bombus terrestris canariensis Pérez by Lieftinck 1958.

Type area: Canary Islands, Tenerife.
Type material: *Lectotype* ♀, "Îles Canaries Canaria. Ch. Alluaud 1890." Blue label: "Museum Paris. Coll. J. Pérez 1915." hereby designated. - *Paralectotype* ♂, "Îles Canaries Tenerife. Ch. Alluaud 1890." Blue label: "Museum Paris. Coll. J. Pérez 1915." - *B. Tkalcú* has labeled the female as lectotype *Bombus terrestris* var. *canariensis* Pérez and the male as allotype *B. terrestris* var. *canariensis* Pérez. This designation was never published, however. - Both types are in coll. Mus. Natn. d'hist. nat., Paris.

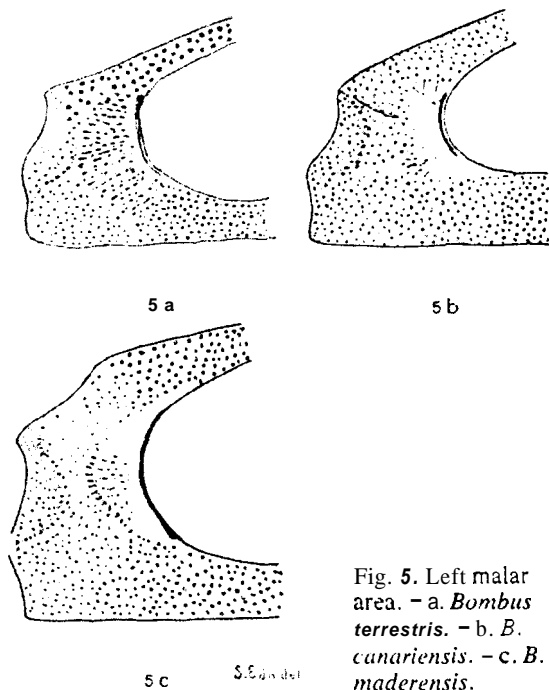


Fig. 5. Left malar area. - a. *Bombus terrestris*. - b. *B. canariensis*. - c. *B. maderensis*.

Diagnosis: *B. canariensis* is closely related to *maderensis* n.sp. and *terrestris* but differs from them by the complete absence of yellow colours. See also the key above.

Description

QUEEN, WORKER

Head black-haired. Clypeus convex, shining and closely punctured; disc of clypeus sparsely punctured. Margin with a few yellow-red hairs. Labrum with acute lamellae in margin with dense yellow-red hairs (fig. 1 b). Malar area shining, malar space $\frac{2}{3}$ that of mandible base. Antenna black, segment II $2 \times$ as long as width at apex, segments III-IV of same length, but shorter than segment II. Ocelli distinctly sunken below general surface of head.

Thoracic coat rather long, **black**. Wings hyaline, veins brown-black.

Legs with black hairs, end of metatarsus and joints of tarsi with yellow-red hairs. Hind tibia red-brown, shining, corbula black with interspersed red-brown hairs.

Abdomen: Tergites 1-3 black-haired, 4-5 white, 6 black, in the margin with yellow-red

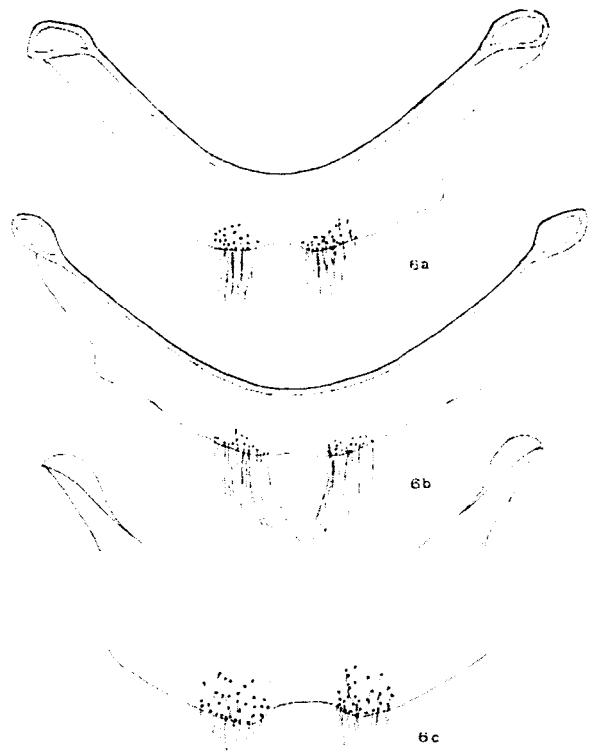


Fig. 6. Sternite 7 of male. - a. *Bombus terrestris*. - b. *B. canariensis*. - c. *B. maderensis*.

hairs. Sternites 4-5 in the margin yellow-red ciliated.

Length: Queen 20-24 mm. Worker 11-16 mm.

MALE

Head black-haired. Clypeus convex, shining, large, punctured with long black hairs. Malar area shining, convex, punctured (fig. 5 b). Antenna black, segment II about $1.5 \times$ as long as III but $2 \times$ as long as wide at the base (fig. 4 b).

Thorax black-haired, wings hyaline, veins yellow-brown. Hind tibia shining in the middle almost free of dots. Metatarsi with yellow-red and black hairs, tarsi red-yellow.

Abdomen: tergites 1-4 black, only in the margin of tergite 4 with pale hairs, tergites 5-7 white-haired.

Length: about 15-18 mm.

Variation: the thorax is not generally black-haired. Among the males from El Cedro (Gomera) there are several specimens which have the collar with a mixture of black and yellow hairs. This feature was also noted by Pérez. One

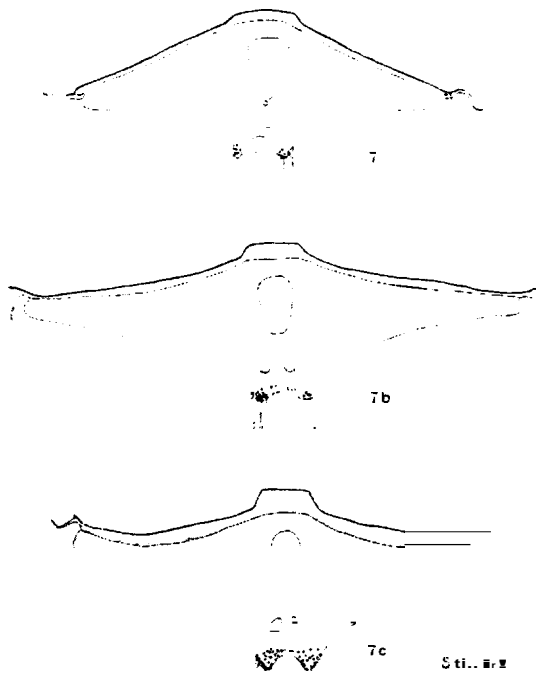


Fig. 7. Sternite 8 of male. - a. *Bombus terrestris*. - b. *B. canariensis*. - c. *B. maderensis*.

female from Cintra (Portugal), determined to *B. terrestris canariensis* had the same colnur pattern as *canariensis*. Investigation of sting, labrum, malar area etc. shows that this female does not belong to *B. canariensis*.

Distribution. *B. canariensis* occurs only in the

Canary Islands. The nearest occurrence of *B. terrestris* is in Algeria.

Material examined: Tenerife: Puerto de la Cruz 21.IV.1960. ♀. Leg. O. Lundblad: 28.XII.1971. ♀♀. On *Abutilon arboreum*, *Ipomaea laeri*: sanie locality, on the following days 31.XII.1971. E. On *Dombeya wellichii*; 3.I.1972. ♀♀. On *Ipomaea*; 12.III.1973. ♂. On *Dombeya*; 12.I.1977. ♀. On *Hibiscus*. All leg. Erlandsson. - On the road from the airport 17.III.1973. ♀♀. Leg. Hedqvist. - Las Mercedes. 1.VI.1960. ♀. Leg. O. Lundblad: 14.III.1973. ♀. Leg. B. Gustafsson. - Las Cañadas 17.XI.1971. ?. Leg. O. Ahlberg. - Orotava. 4.I.1962. ♂. Leg. Erlandsson. - Buenavista, 23.I.1973. ♀ ♂. Leg. Hedqvist. - La Laguna. 14.V.1970. ♂. Leg. A. hlachado. - *Hieru*: 10.VI.1960. 5 ♂. Leg. O. Lundblad. - *Gomera*: El Cedro 1.VIII.1974. 15 ♂, 35 ♀. On *Rubus ulnifolia*. Leg. A. Machado.

Bombus niaderensis n.sp.

Figs 1-8 c

Type area: Madeira, Funchal.

Type material: *Holotype:* ♀, Madeira, Funchal, 25.VII.1972. Leg. S. Erlandsson, in coll. Swedish Mus. nat. Hist., Stockholm. - *Paratypes:* Madeira, Rabacal. 1080m.a.s.l. 17.VII-4.VIII.1935, 37 ♂, 19 ♀. Leg. O. Lundblad. - Caramajo, 1250 m.a.s.l., 6-14.VII.1935. ♀, 10 ♂, 4 ♀. Leg. O. Lundblad. - Funchal, 21.VII.1972, ♀; same locality, on the following days: 25.VII.1972. ♀; 26.VII.1972. ♀♀; 23.VII.1973, ♂; 29.VII.1973, ♂; 3.VII.1973. ♀; 6.VII.1973. ♀. On *Dahlia*, *Tagetes*, *Anthirrhinum majus*. All leg. Erlandsson. Same locality, 15.IX.1976, ♀; 16.IX.1976, ♀; 25.IX.1976, ♀. All leg. L.-Å. Janson.

Diagnosis: Differs from *B. canariensis* in having yellow colour on thorax and abdomen; from *terrestris* by the labrum having a shining spot on each side

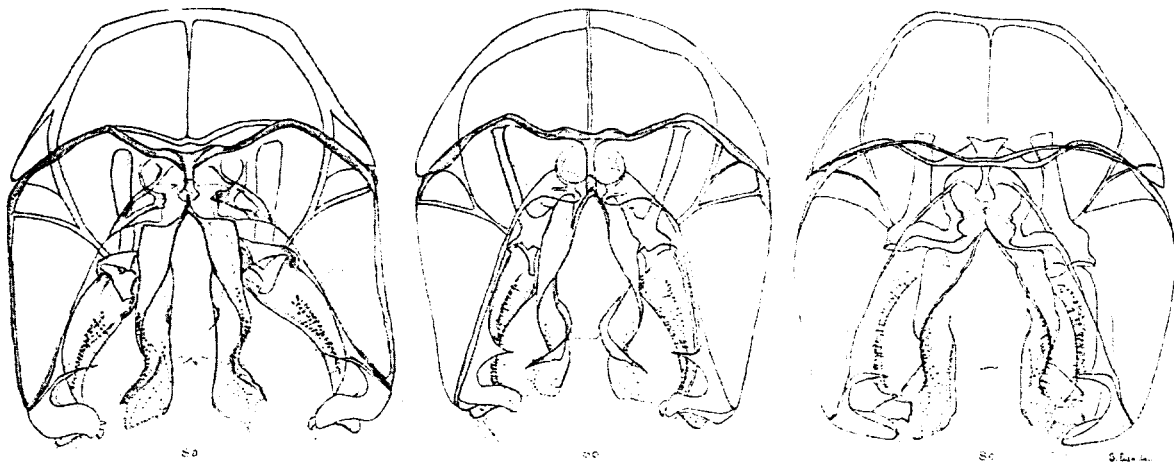


Fig. 8. Genitalia. - a. *Bombus terrestris*. - b. *B. canariensis*. - c. *B. maderensis*.

instead of *terrestris*' large, punctuated spots. See also key above.

Description

QUEEN, WORKER

Head black-haired. Clypeus convex, shining, disc closely punctured, except in middle. Labrum with some large dots and on each side with one shining spot. Larnellae in margin almost entirely level (fig. 1 c). Margin of labrum with red-yellow hairs. Malar area shining. malar space as long as base of mandible. Antenna black, segment II 2 × as long as width at apex, segments III–IV of same length but shorter than segment II. Ocelli distinctly above general surface of head.

Thorax with rather dense, long coat and a broad yellow-ochre collar. Wings hyaline to smoky yellow, veins yellow-brown. Legs with yellow-red hairs, hind tibia black, shining and corbula with red-brown hairs.

Abdomen: tergite 1 black, 2 yellow-ochre, uide. 3 black. 4–5 white to white-yellow, 6 black. Sternites 4–5 in margin long, ciliated.

Length: Queen 20–25 mm, worker 17–18 mm.

MALE

Head with long, black hairs. Clypeus shining, punctured, in margin with pale yellow hairs. Labrum rough punctured with one shining spot on each side (fig. 1 c). Malar area shining, punctured (fig. 5 c). Antenna black, segment II about 1.5 × as long as III, but 3 × as long as width at apex (fig. 4 c).

Thorax black with a yellow-ochre collar. Legs red-brown with yellow-red hairs. Wings hyaline to smoky yellow, veins red-brown.

Abdomen: tergite 1 black, 7 yellow-ochre, 3 black. 5–7 white to white-yellow. Sternites 7–8 (figs 6 c, 7 c). Genitalia (fig. 8 c).

Length about 14–18 mm.

Distribution: Madeira.

References

- ALTENA, C. O. VAN REGTEREN. 1949. Insekten van de Canarische Eilanden. – Versl. buitengew. verg. Med. Ent. Tijd. 124–133.
- BISCHOFF, H.. 1937. Hymenoptera Aculeata (excl. Formicidae und Halticinae) von den Kanarischen Inseln. – Com. Biol. Soc. Fenn. 6(10):1–3.
- BRULLÉ, A.. 1839. In: Barker-Webb, F. & Berthelet, S. Histoire naturelle des Îles Canarie. Entomologie 2:84.
- CEBALLOS, G.. 1956. Catalogo de los himenopteros de España. – Trab. del inst. españ. de entomol. Madrid.
- DUSMET Y ALONSO, J. M., 1924. Algunos Himenopteros de Canarias. – Boll. Real. Soc. Esp. Hist. Nat. 24:455–458.
- GRIBODO, G.. 1883. Le crociere dell yacht "Corsare" IV. Imenotteri. – Ann. Mus. civ. Genova 18:684–690.
- International Code of Zoological Nomenclature adapted by the XV International Congress of Zoology 1961.
- KRÜGER, E.. 1954 and 1956. Phaenoanalytische Studien an einigen Arten der Untergattung *Terrestribombus* O. Vogt. (Hymenoptera, Bombidae. II. Teil). – Tijdsch. voor Entom. deel 97 and 99.
- LIEFTINCK, M. A.. 1958. A preliminary: account of the bees of the Canary Islands (Hym. Apoidea). – Com. Biol. Soc. Fenn. 5:1–31. 1 pl.
- PÉREZ, J., 1895. Voyage de M. Ch. Alluaud aux Îles Canaries (Nov. 1889–Juin 1890), 4e mém. Hymenoptères. – Ann. Soc. Ent. France, 64:191–204.
- PITTIONI, B., 1939. Neue und wenig bekannte Hummeln der Paläarktis (Hymenoptera, Apidae). – Konowia 17:244–263, 2 pl.
- SAUNDERS, E.. 1903. Hymenoptera Aculeata, collected by the Rev. E. Eaton, hl. A. in Madeira and Tenerife, in the spring of 1902, including notes on species taken by the late T. Vernon Wollaston and F. A. Bellamy. – Trans. Ent. Soc. London 1903:207–216.
- SCHMIEDEKNECHT, O., 1978. Monographie der in Thüringen vorkommenden Arten der Hymenopteren-Gattung *Bombus* mit einer allgemeinen Einleitung in dieses Genera. – Jenaische Ztschr. f. Naturwiss. 12:359–361.