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## A review of the genus *Homonotus* DAHLBOM, 1843 in the West Palearctic region with description of a new species (Hymenoptera, Pompilidae)

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**Abstract:** The genus *Homonotus* is revised in the West and Central Palearctic region. A key to species is given. *H. maroccanus* nov.sp. is described from Morocco by male and female, holotype is a female. *Homonotus niger* is restored from synonymy. It was previously regarded to be synonymous with *Homonotus sanguinolentus*. The following new synonyms are proposed: *Wesmaelinus caucasicus* RADOSZKOWSKI, 1888 syn.nov., *Pompilus affinis* STEIN, 1859, nov.syn. and *Homonotus turanicus* GUSSAKOVSKIJ 1952 nov.syn. under *Homonotus sanguinolentus*; *Homonotus balcanicus* Haupt, 1927 syn. nov.; *Homonotus collaris* Gussakovskij, 1952 nov.syn., and *Homonotus ruficollis* HAUPT, 1962 nov.syn. under *Homonotus transcaspicus* (RADOSZKOWSKI, 1893).

**Key words:** Hymenoptera, Pompilidae, *Homonotus*, West Palearctic region, key to species.

### Introduction

*Homonotus* is a small genus of the family Pompilidae with seven species in the West and Central Palearctic region. It was never revised completely, and the taxonomic status of many nominal taxa was unclear until today. In the meantime, I could examine a large sample of more than 200 specimens mainly from the collection of the Oberösterreichisches Landesmuseum Linz, Austria, and from some other collections, among them some type specimens. As a result, all species from the study area could be clarified, with additional information about their distribution and characters for their recognition. In the present contribution, the genus is revised and a key to species is given.

### Material and methods

#### Morphological terms

Morphological terms follow BOHART & MENKE (1976). Additionally, the following terms are used:

**Malar space:** Space between eye and mandible is the malar space (and not "gena" as in some older publications).

**Gena** means the area behind eyes (seen in lateral view), and is measured always in

lateral view. Length of gena versus length of eye is measured in the middle of the eye. Other gena characteristics: Above: gena near upper eye margin, Below: gena near lower eye margin, medially: gena in the middle of the eye.

**Mesosoma** of Pompilidae is divided (seen dorsally from anterior) into pronotum, mesoscutum, scutellum, metanotum, metapostnotum and pronotum, the propodeum is divided into propodeal dorsum and propodeal declivity. Metapostnotum is sometimes reduced to a narrow band and not visible because it is hidden by metanotum.

**Subgenital plate:** the last (VIII) sternite of males.

**Antennomeres** (abbreviated with AS) are consequently counted from the base: scape is AS I, pedicellus is AS II, and flagellomere I is AS III. Females have 12 and males 13 antennomeres.

All measurements of the face were done in frontal view, as are the width of face and width of the eye, always using the maximum width or diameter.

### Acronyms of depositories and other institutions

Berlin.....	Museum for Natural History, Berlin, Germany.
CSE.....	private coll. C. Schmid-Egger, Berlin, Germany
Jacobs .....	private collection H.J. Jacobs, Ranzin, Germany
Leiden.....	Naturalis Biodiversity Center, Leiden, the Netherlands
OLL .....	Oberösterreichisches Landesmuseum, Linz, Austria
Saure.....	private collection, C. Saure, Berlin, Germany
Wien .....	Naturhistorisches Museum Wien, Austria

### Keys to species of *Homonotus* from Palaearctic region

The key includes all species from the Palaearctic region including northern Sahara border in Africa, Arabian peninsula and Iran. *Homonotus iwatai* YASUMATSU, 1932, from the far east of Russia is not included. In some species are additional descriptive characters listed behind the key characters in brackets [...].

#### Key to females

- 1 Forewing with 2 submarginal cells (fig. 8). [body size less than 6 mm] .....2
- Forewing with 3 submarginal cells.....3
- 2 Head and mesosoma light red, abdomen black (fig. 16). Wings hyaline with dark spot from marginal cell to submarginal cell. Egypt ..... *H. semiflavus* PRIESNER
- Head (except of clypeus), mesosoma and abdominal segments I-II black, abdominal segments III-VI red (figs. 3). Wings evenly greyish. Morocco .....  
.....*H. maroccanus* SCHMID-EGGER nov.sp.
- 3 Segment IV-VI (apex) of abdomen red (figs. 11, 12). [Antenna and clypeus red]. Israel, North Africa .....*H. ruficornis* (MAGRETTI)
- Abdomen black .....4

- 4 Gena short, eye (measured in lateral view in the middle of eye) 2.4x as long as gena. Medial part of metanotum rounded. Terga all covered with fine pubescence. Apical clypeal margin widely rounded, without impression or emargination. Longest spur of hindtibia as long as hindbasitarsus. [All black species]. United Arab Emirates ..... *H. arabicus* SCHMID-EGGER .....5
- Genae longer, eye (measured in lateral view in the middle of eye) at most 2.0x as long as genae. Medial part of metanotum apically bifurcate. Tergites with bands of pubescence, or without any pubescence. Apical clypeal margin emarginated or with impression. Longest spur of hindtibia at most 0,9x as long as hindbasitarsus. ....5
- 5 Metanotum dorsally with marked furrow in whole length, apically triangular emarginated. Pronotum, in specimens from Israel also mesoscutum red, remaining mesosoma including propodeum black. [Two females from Syria are all black. They can be distinguished from other black species by the deep furrow on metanotum]. Balkans to Western and Central Asia, southwards to Israel. .... *H. transcaspicus* (RADOSZKOWSKI) .....6
- Metanotum dorsally with weak impression in apical half, basal half all flat. Colour different. ....6
- 6 Mesosoma partly or all red, at least pronotum and propodeum red, often also mesoscutum or whole mesosoma red (figs. 13, 14). Tergite I apically with barley visible bandlike silver pubescence, tergite II basally and apically with large bandlike silver pubescence, tergite III with narrow bandlike silver pubescence. (pubescence may be worn and can best be seen in fresh specimens). Europe to Central Asia, Northwest Africa ..... *H. sanguinolentus* (FABRICIUS) .....6
- Body all black (fig. 10). Tergite I with small lateral spot-like pubescence. Base of tergite II without pubescence, apical margin with narrow lateral spots. Tergite III without band-like pubescence. Europe, very rare in the eastern and southeastern part ..... *H. niger* MARQUET .....6

### Key to males

The males of *H. semiflavus* PRIESNER (Egypt) and of *H. arabicus* SCHMID-EGGER (United Arab Emirates) are unknown.

- 1 Forewing with 2 submarginal cells (fig. 8). [body size less than 6 mm] .....2
- Forewing with 3 submarginal cells .....3
- 2 Egypt ..... see unknown male of *H. semiflavus* PRIESNER
- Morocco. [Head, mesosoma and abdominal segments I-II red, remaining segments red (fig. 5). Second submarginal cell wider than high (fig. 8)]. ..... *H. maroccanus* SCHMID-EGGER nov.sp. ....3
- 3 Segments III-VII of abdomen red (fig. 12). [Antenna and clypeus red]. Israel, North Africa ..... *H. ruficornis* (MAGRETTI) .....2
- Abdomen black .....2
- 4 Distribution: Arabia: ..... see unknown male of *H. arabicus*.
- Others .....3
- 5 Metanotum with deep medial furrow on whole length, apically triangular emarginated. [Pronotum red in a few specimens from Central Asia, otherwise black]. Balkans to Western and Central Asia, southwards to Israel ..... *H. transcaspicus* (RADOSZKOWSKI) .....5
- Metanotum in basal half flat, without or only with weak emargination. Medial furrow and apical emargination of metanotum different, always shorter and less deep as in *H. transcaspicus*. [Propodeum black]. Tunisia, Europe to Central Asia. [Both species are not distinguishable in male sex with certainty. See also description] .....5
- ..... *H. sanguinolentus* (FABRICIUS) and *H. niger* MARQUET

## Taxonomy

### ***Homonotus arabicus* SCHMID-EGGER, 2017, fig. 1**

*Homonotus arabicus* SCHMID-EGGER, 2017, 391. Holotype and paratype, females, United Arab Emirates, Wadi Bih (Holotype coll. CSE, paratype coll. R. Wahis).

**D i a g n o s i s :** The female of *H. arabicus* is unique, with an all black body colour, narrow gena, a flat and apically rounded metanotum, and a dense pubescence on tergites. For detailed description see SCHMID-EGGER (2017). The male is undescribed.

**D i s t r i b u t i o n :** United Arab Emirates.

### ***Homonotus maroccanus* SCHMID-EGGER nov.sp., figs 2-9**

**H o l o t y p e :** Morocco: female 8.v.2003 Tiznit, leg. M. Halada (OLL). Paratype: male same data as holotype. Both specimens were identified as *H. aegyptiacus* by H. Wolf, 2014.

**D i a g n o s i s :** *Homonotus maroccanus* nov.sp. is characterized by two submarginal cells in forewing (other species have three submarginal cells). It shares this special character with *H. semiflavus* from Egypt. *H. maroccanus* can be distinguished from *H. semiflavus* by colour pattern: head apart from clypeus and mesosoma is all black in *H. maroccanus*, and tergites III-VI in females and III-VII in males are red, whereas head and mesosoma are red and abdomen is black *H. semiflavus*. Also, submarginal cell II is longer (1.4x as long as wide) in *H. maroccanus* as in *H. semiflavus* (as long as wide). Medial part of metanotum is flat medially in the new species, and bifurcate in *H. semiflavus*. The male is also characterized by a special form of tergal base I (laterally and medially depressed, with raising in-between, fig. 9, however difficult to recognize on photo). This depression is unique among examined *Homonotus* species.

**D e s c r i p t i o n f e m a l e :** Body length 5 mm. Colour: Black with the following parts light red: clypeus, antenna including scape (apex of antenna darker than base), most parts of foreleg except coxa, midtibia partly, midtarsi, hindtarsi (legs are brownish red with some darker parts). Tegula brownish. Abdominal segments III-VI dark reddish. Spurs of mid- and hindtibia and base of hindbasitarsus white. Body covered with scattered appressed silver pubescence. Wing venation dark, wing transparent.

Morphology: Antenna, head, mesosoma and wing venation see figures 1, 2, 6 and 7. Clypeus in form of a semi-circle. Mesosoma comparatively slender (see figs.). Propodeal declivity convexe. Body shiny. Longest spur of midtibia as long as midmetatarsus, other spur half as long. Longest spur of hindtibia 2/3 as long as hindbasitarsis, shorter spur half as long as hindbasitarsus. Foretarsomeres without spines.

**D e s c r i p t i o n m a l e :** Body length 4.5 mm. Male agree with female in all aspects except of the following differences: Vertex shorter than in female. Apico-lateral spines of propodeum longer and slender as in female. Tergite I laterally and baso-dorsally with depression, medial depression U-shaped, with marked baso-lateral elevation between medial and lateral depression (fig. 9).

**D i s t r i b u t i o n :** Morocco.

### ***Homonotus niger* (MARQUET, 1879), changed status, fig. 10**

*Ferreola nigra* MARQUET, 1879: 474, female. Holotype female, Italy (Toulouse, type lost, R. Wahis pers. comm.). Synonymised with *H. sanguinolentus* by HAUPT (1927: 289). **Changed status.**

*Pompilus doctor* DALLA TORRE, 1897: 286. New combination and new status. Replacement name for

*Ferreola nigra* MARQUET, 1879; nec *Salius niger* RADOSZKOWSKI, 1877 in *Pompilus* (WAHIS, 1986).

**R e c o r d s :** males are only listed when associated with females: Austria: 1 female 12.viii.1993 Steiermark, Deutsch Haseldorf (OLL). France 2 females 13.v.1971 Corsica, Calvi (OLL). Germany, 1 female 17.vii.1996 Bavaria, Kitzingen, Military area KlosterForst; 2 females 20.vii.2010 Schleswig Holstein, Weissenhäuser Brök (CSE); 2 females 27.vi.2009 Mecklenburg Vorpommern, Mariendorf auf Rügen, 54.33N 13.68E (Jacobs); 1 female 28.vii.1998 Berlin, Blankenfelde, Köppchensee; 1 female 22.vi.2008 Brandenburg, Uckermark, Groß Dölln, Flughafen (Saure). Italy, 1 female 11.vi.1996 Aosta Valley, Pondel 880 m NN. (CSE); 1 female 1 male Triest 4.vi.1959 (OLL). Netherlands: some specimens from different locations (Leiden). Slovakia: 1 female 26.vii.1993 Chotin (OLL). Tszech Republic: 1 female 28.vi.2010 Boh. occ, Prunelov; female 4.viii.2003 Miloyice OLL), Spain: 1 female viii.1933 Cercadilla, Estacion Alpina, 1500m (Leiden). 1 female 18.v.1992 Prov. Zaragoza, Pinha de Ebro (CSE).

**D i s c u s s i o n :** *Homonotus* species from Europa, West and Central Asia were not treated consistently in the past. R. Wahis (see Fauna Europaea, <https://fauna-eu.org/>) recognized only one European species, *H. sanguinolentus*, whereas WOLF (1972) recognized two European species, *H. sanguinolentus* and *E. balcanicus*. In Central Asia, Wolf (pers. comm.) regarded a third species to be present, *H. collaris*. Species recognition in general is difficult because of different colour forms in females, and the lack of good morphological diagnostic characters.

The examination of about 200 new *Homonotus* specimens results in the following conclusions:

- Three taxa of this species group are occurring in the treated area.
- Females of these taxa can be recognized by colour pattern, with some exceptions. Males of two taxa (*H. niger* and *H. sanguinolentus*) are not distinguishable by morphology or colour pattern with certainty.
- One taxon (*H. transcaspicus*) can be recognized by morphological characters in males and females. It is a valid species without doubt. It is characterized by form of metanotum, by colour pattern of females, and by distribution pattern. Genetic data (Schmid-Egger in prep.) support its state as valid species. For nomenclature see below.
- Both remaining taxa, *H. niger* and *H. sanguinolentus*, are only distinguishable by colour pattern of females. Some morphological characters of males (mainly in pattern of tergal pubescence, form of metanotum etc.) cannot be confirmed with certainty because not enough fresh specimens were available for exact examination. Provisional genetic data (Schmid-Egger in prep.) are not conclusive. There are two genetic clusters within specimens from Central Europe but most data were inferred from males and cannot be used for species recognition.
- Remaining nominal taxa could be clarified and are synonyms of one of the three mentioned species.

For that reason, the main question in the present study is the treatment of the two European taxa *H. niger* and *H. sanguinolentus*. Most former and present authors recognize only one species with two female colour forms. However, there is no explanation for the occurrence of this two quite different and partly sympatric forms. The forms differ also by the following characters:

- The black form (*H. niger*) occurs mainly in western and Central Europe, eastwards to Poland (WISNIOWSKI, 2009), and also in southern Europe.

- The red form (*H. sanguinolentus*) does not occur in the western and south-western parts of Germany, and is rare in western Europe (e.g. it occurs in the Netherlands, H. Nieuwenhuijsen pers. comm). In Germany it is restricted to warm and dry meadows (mainly "Steppenrasen" habitats) in the eastern part of the country. It is not known from Poland (WISNIEWSKI 2009).
- There are no transitional colour forms between both taxa. The female of *H. niger* is all black, without traces of red on pronotum or propodeum. The colour pattern of *H. sanguinolentus* females varies from an all red mesosoma to some black parts in medial mesosoma, but pronotum and propodeum is always all red.

In my opinion, the concept of two valid species is more likely than a concept of colour forms only. Generally, the change from red to black (not uncommon in Pompilidae) passes in north-south direction (e.g. in *Arachnospila*, *Priocnemis* etc., whereas many species have black forms in south Europe), and often transition forms occur in these species. Also, distribution pattern supports the concept of two species, because both taxa have a separated distribution area with a wide overlapping area. *H. niger* seems to have a West or Southwest European origin, whereas *H. sanguinolentus* is most likely a southeastern European or Continental species, similar to *H. transcaspicus*.

For that reason, I treat the black form as a valid species, different from *H. sanguinolentus* s.str. The red form (female) clearly refers to the description of *Sphex sanguinolenta* FABRICIUS, 1793, and so the valid name for that taxon is consequently *Homonotus sanguinolentus*. The black (female) form refers to the description of *Ferreola nigra* MARQUET, 1879, described from Italy. The type of the latter seems to be lost (R. Wahis pers. comm.), but the description fits unambiguously to the black form of "*H. sanguinolentus*". So, the black form has the valid name *H. niger*.

A problem remains with the males, which cannot be recognized with certainty (maybe later studies with more fresh material will confirm the below described characters, but for the moment they are not suited for a certain species recognition).

**D i a g n o s i s :** The female of *H. niger* is all black, whereas the female of *H. sanguinolentus* has mesosoma partly or all red. Males of both species are black and similar in colour. The species also can be distinguished in both sexes by form and size of pubescent tergal bands. In *H. niger* they are less developed compared with *H. sanguinolentus*, and lack in males more or less. The recognition of males is not always easy, because pubescence may worn down. Smaller males of *H. sanguinolentus* also may lack parts of the typical pubescence. Another character is tergal structure in males. It is more shiny with some bluish shimmer and larger interspaces (as large as puncture diameter) in males of *H. niger*, and with a dense punctuation with partly invisible interspaces and an duller impression in *H. sanguinolentus*. For recognition of the similar *H. transcaspicus* see below.

**F e m a l e :** 8-11 mm. **Colour:** body all black. Mandible may be partly red. Tibial spurs white. Wings infusate. **Morphology:** Apical clypeal margin with small median emargination, or straight, and with a median impression. Gena above as wide as length of scape, below ca. 0,3x length of scape. Pronotum 0,8x as long as wide. Scutellum apically with small impression. Metanotum with weak medial impression, apically slightly triangular emarginated, with wide obtuse angle, in one species nearly flat. Longer hindtibial spur 0,75-0,9x as long as hindmetatarsus. Cubital cell III longer than cubital cell II. Tergite I

apically with lateral short band of scattered white pubescence. Tergite II apically with band of white pubescence, medially widely interrupted (gap as long as shorter spur of hindtibia), as wide as 2/3 length of scape. Other morphological characters as length of gena, of cubital cells or of antennal segment are variable.

**Male:** 5-9 mm. **Colour:** body all black, apex of mandible with some red, tibial spurs white. **Morphology:** Agree in main characters with female. Tergites laterally with some brownish setae, no tergal bands of white pubescence visible. Base of tergite II with some white and very fine pubescence, barely visible and much weaker as in *H. sanguinolentus*. Tergal surface shiny, with a weak bluish shimmer, finely punctured with interspaces partly as large as puncture diameter or larger. Pronotum 0,7x as long as wide (measured in the middle of pronotum).

**Distribution:** The overall distribution of *H. niger* is still unknown, because the species was confused with *H. sanguinolentus*, and most publications do not refer to the colour of females. The present records show a Central and West European distribution with some scattered records from Southwest Europe. The species occur eastwards to Poland and Czech Republic.

### ***Homonotus ruficornis* (MAGRETTI, 1884), figs 11, 12**

*Salius ruficornis* MAGRETTI, 1884: 569 male, lectotype female (coll Mus. Genova, designated by R. Wahis, pers. comm.).

*Wesmaelinus aegyptiacus* RADOSZKOWSKI, 1888: 473, male, holotype male, Egypt (Berlin). Examined. Synonymized with *Homonotus ruficornis* (MAGRETTI, 1884) by ARNOLD, 1939: 51. As *Homonotus aegyptiacus*: PRIESNER, 1955: 194 (Key). **Synonymy confirmed.**

*Homonotus ruficornis* HAUPT, 1962: 70, male. Holotype male Jericho, 9.VII. Paratype male: Jericho, 1.VII (Tel Aviv). Synonymized with *Homonotus aegyptiacus* (RADOSZKOWSKI, 1888) by PRIESNER, 1966: 149. The name also is preoccupied by *Salius ruficornis* MAGRETTI. **Synonymy confirmed.**

**Records:** **Egypt** male (Berlin, holotype of *Wesmaelinus aegyptiacus*); male Asfar Mai 1936 (Wien). **Tanzania:** female 12.-16.iv.1936 Nyassa See, Mbamba Bay (Wien).

**Diagnosis:** The species differs from remaining palaearctic species by a red apex of abdomen (red are tergites IV-VI in females and tergites III-VI in males). Clypeus and antennae are red.

**Female:** 7.5-10 mm. **Colour:** Black with the following parts light red: clypeus, mandible, antenna including scape, tarsi, abdominal segments III-VI. Clypeus, parts of legs and declivity of propodeum with long white pubescence. Tibial spurs white, wings slightly infusate. **Morphology:** Apical clypeal margin evenly rounded. Gena above somewhat shorter than scape, below half as long as scape. Scutellum and metanotum without impression, apically truncate, resp. rounded (metanotum). Longer hindtibial spur as long as hindtibia.

**Male.** Body length 6,5-9 mm. **Colour:** Black, red are: Apical clypeal margin, antenna (apically darker), tergites and sternites III-VII, tarsal segments partly. Wings somewhat infusate, apical spurs of mid- and hindtibia whitish. **Morphology:** Apical clypeal evenly rounded, without any emargination. Gena narrow, as large as 1,5 hindocellar diameter. Distance between hindocellus and hindmargin of head as long as 0,6x length of antennal segment III. Metanotum flat, apically rounded.

**Distribution:** Egypt, Israel (PRIESNER 1966), Central and Southern Africa (ARNOLD 1935).

***Homonotus sanguinolentus* (FABRICIUS, 1793), figs 13-15**

*Sphex sanguinolentus* FABRICIUS, 1793. Ent. syst. II: 211 n. 54.

*Wesmaelinus caucasicus* RADOSZKOWSKI, 1888, 472, female, Caucasus. Examined, designated as Holotype. **New synonym.**

*Wesmaelinus costae* TOURNIER, 1889: XXIV, male, female. Syracuse. Not examined, description refer to a female of *Homonotus sanguinolentus*. **Synonymy** of WAHIS (1986) **confirmed**.

*Pompilus affinis* STEIN, 1859: 63. Male, female, male designated as lectotype by Ohlke (unpubl.), Mehadia, southern Hungary (Berlin). Examined. **New synonym.**

*Pompilus laesus* MOCSÁRY, 1878. Description and treatment of HAUPT (1962) refer to *Homonotus sanguinolentus*. Not examined. **Synonymy confirmed.**

*Homonotus turanicus* GUSSAKOVSKIJ, 1952, 211, male, Stalinabad (now Dushanbe in Tadjikistan). Not examined. **New synonym.**

*Homonotus balcanicus luctuosus* NOVEL & RIBAUT, 1958. Synonymised with *H. sanguinolentus* by WAHIS (2006).

**Records:** males are only listed, when associated with females: Austria: 7 females Oberweiden; Neusiedlersee/Winden, Neusiedl, Seefeld/Niederösterreich 1 female 8.vii.2014 Niederösterreich, Seefeld (OLL). Bulgaria: 1 female 14.viii.1993 Vlaha (OLL). Germany: 1 female 10.vii.2011 Sachsen-Anhalt, Hecklingen; 1 male 1.viii.2002 Brandenburg, Zossen TÜP Wünsdorf (Saure). 2 females 2.viii.2015 Thüringen, Günstedt (N Sömmerda) (CSE). Iran: 1 female 11.vi.1977 W Eisar SSE Novshar; female 25.vii.1977 Elburs, 75 km S Chalus, 2400 m NN (OLL). Italy: 1 female 16.vii.1995 Pisa (CSE). Kazakhstan: 1 male, 1 female 31.v.2001 Charyn Valley W Chunza (CSE). Netherlands: some specimens from different locations (Leiden). Romania: 1 female 1.viii.1998 Transsilvania, Fizer (OLL). Russia: 1 female 22.vi.1949 Tuva Sosnova (CSE). Slovakia: 3 females Sturovo; 1 female Moldava (OLL). Spain: 1 male 1 female 19.vii.1963 Pyrenees (location unreadable) (OLL). Czech Republic: 2 females Moravia, Cejo (OLL). Tunisia: 1 female 14.v.2001 Monastir (CSE). Ukraine: 1 female July 2000 Crimea, Anatra (OLL).

**Discussion:** For treatment of the red and black form of *H. sanguinolentus* s.lat. see discussion at *H. niger*. Three synonyms are discussed here:

- *Wesmaelinus caucasicus* RADOSZKOWSKI, 1888: A female from Berlin Museum has an old handwritten label "*caucasicus*" and a printed red typ label. I designated it as holotype of *Wesmaelinus caucasicus*, now in *Homonotus*. It is a small female of *H. sanguinolentus* with all red mesosoma. *H. caucasicus* is a junior synonym of *H. sanguinolentus*. **New synonym.**
- *Pompilus affinis* STEIN, 1859 also refers clearly to *H. sanguinolentus* and is therefore a **new synonym**. The examined type series includes very small specimens (males and females between 6-6,5 mm, one female with 8 mm).
- *Homonotus turanicus* GUSSAKOVSKIJ, 1952: The description (in Russian language) refers clearly to a male of *H. sanguinolentus*. GUSSAKOVSKIJ (1952) mentions the special tergal pubescence and the less impressed metanotum. For that reason, the taxon is a junior synonym of *H. sanguinolentus*. **New synonym.**

**Diagnosis:** The female of *H. sanguinolentus* s. str. is characterized by a partly or all red mesosoma. The form and extension of tergal pubescent bands is also distinctive: tergite I has apically a weak, tergite II has each basally and apically a large continuous band, tergite III has a narrow apical band. Tergal band III is medially narrowed. However, pubescence is not always visible, especially when specimen is worn. Apical clypeal margin is straight with a median impression. The similar *H. transcaspicus* can be recognized by a black mesosoma apart from red pronotum (mesoscutum and scutellum is red in one specimen from Israel). See also diagnosis at *H. transcaspicus*.



The male of *H. sanguinolentus* is all black and therefore similar to *H. niger*. See diagnosis at *H. niger* for recognition.

**F e m a l e :** Body length 7-9 mm. **Colour:** Black, red are the outer margin of clypeus, whole mesosoma except of black mesoscutum, scutellum and metanotum in most specimens from Europe. Some specimens (e.g. type specimens of *H. affinis* from Hungary) have mesosoma all red, without black parts. **Morphology:** Similar to that of *H. niger*, with the exception of tergal pubescence.

**M a l e :** Body length 7-9 mm. All black, mandible partly reddish, tibial spurs white, wings infusate. Agree in general with the male of *H. niger*, with the following exception: white pubescence forming a band on: apex of tergite I (lack in some specimens), base and apex of tergite II. Basal band as large as 0,3x length of tergite, apical band narrower, as large as width of hindmetatarsus. Pubescence may be worn off. Tergal puncture dense, most interspaces 0,2-0,5x puncture diameter.

**V a r i a t i o n :** Females from Tunisia and Italy (Pisa) have only pronotum and propodeum red, remaining mesosoma is black.

**D i s t r i b u t i o n :** The overall distribution of *H. sanguinolentus* is still unknown, because the species was confused with *H. niger*, and most publications do not refer to the colour of females. The present records show a Central Asian, eastern and southern European distribution. In the west, the species reaches East Germany and Italy. However, there are also some records from the Netherlands which may represent an isolated outpost. The easternmost findings originate from Kazakhstan and from Russia. A single record comes from Northwest Africa.

### ***Homonotus semiflavus* PRIESNER, 1955, fig. 16**

*Homonotus semiflavus* PRIESNER, 1955: 196, female. Female holotype: Egypt (Wien, leg. H. Priesner). Examined.

**R e c o r d s :** Egypt: 17.1.1933 female, Wadi Agrab, South Eastern Desert (Wien, leg. Priesner, Holotype).

**D i a g n o s i s a n d D e s c r i p t i o n :** The female is unique by having only 2 submarginal cells, by body color (all light red except abdomen), by small body size (5.2 mm) and by transparent wings with a dark patch around marginal and submarginal cell. Apical clypeal margin is widely truncate without any impression or emargination, metanotum dorsally rounded, apically with small triangular emargination, with very obtuse angle. Eye 2.1 as long as gena, measured in middle of eye.

**M a l e :** Unknown.

**D i s t r i b u t i o n :** Egypt, Yemen (female in coll. Wahis, pers. comm.).

### ***Homonotus transcaspicus* (RADOSZKOWSKI, 1893), figs 17-20**

*Wesmaelinus transcaspicus* RADOSZKOWSKI, 1893: 60, Female. Environs de Merv. [The oasis of Merv (37°39'46.09"N, 62°11'33.07"E) is situated in Turkmenistan on the Murghab River, 40 km to the east from Mary (A. Antropov pers.comm.)]. A male in the Berlin collection with original handwritten label "*transcaspicus*" from Radoszkowski is designated as Holotype.

*Homonotus balcanicus* HAUPT, 1927: 292, female. Holotype female: Montenegro, Lipa b. Cetinje, 600m, 19.VI.1911 (leg. Spaney- Schumacher, Berlin). Examined, **new synonym**.

*Homonotus collaris* GUSSAKOWSKI, 1952: 211, male, female. Type female: 7.VIII 1933 (leg. B. Popov). male: 12 VII 1934.: 804. Not examined, **new synonym**.

*Homonotus ruficollis* HAUPT, 1962: 70 Male. Holotype male: Ramat Hasharon, 19.VII (Tel Aviv). Paratype male: Ramat Hasharon, 19.VII (Tel Aviv). Not examined, **new synonym**.

R e c o r d s : Bulgaria: 12 females 12 males 1967-1971 Sandanski and Slancev Brjag (OLL). Croatia: 1 female 22.vi.1965 Baska, Insel Krk (OLL). Israel: 1 female 2.vi.2012 Habikurim, N32°30'/E 34°54' (CSE). Italy: 1 male 14.vi.1991 Noli (Savona), Ligurien (OLL). Montenegro: 1 female 19.vi.1911 Lipa b. Cetinje, 600m (holotype of *H. balcanicus*). (Berlin). Syria: 4 females 22.v.1996 40 km NE Damascus (OLL). Turkey: 1 female 20 km S Iskenderum, 3 km S Güzlyaya 5.vii.1996, 2 males 20.vi.1998 SSE Milas (CSE); 1 female 10.vi.1998 21.v.1970 Mut; 1 female 1 male 8.v.1970 Urfu; 1 female 1 male 8.vii.1997 25 km E Malatya; 1 male 11.vi.1964 Kusdasi, 1 male 12.vi.1970 Urgüp/Göreme; 1 male 16.viii.1991 Nemrut Dag 2000 m NN; 2 males 20.vii.2006 20 km SW Burdur (OLL). Turkmenistan: 1 female 13.v.1993 Sandikatzienv. (OLL). Female. Environs de Merv. (37°39'46.09"N, 62°11'33.07"E). Holotype of *H. transcaspicus*. (Berlin). Uzbekistan: 1 female 8 males 12.v.1994 Papngan, 20 km NW Kokand, 41.2N 70.6E; 1 male 28.4.1978 Buchara, Kysyl-Kum (OLL).

D i s c u s s i o n : *Homonotus transcaspicus* was not recognized as separate species by most former authors. H. Wolf (pers. comm) treated all red-coloured females from Central Asia as *H. sanguinolentus* or as *H. collaris*. During the present study, it was possible to clear the taxonomic situation of the *Homonotus* species from Central and West Asia and East Europe as well as the nomenclatorial situation of different taxa names. Only YASUMATSU (1932) lists all these species, without further comment, as valid.

It is clear now by the present results that most specimens from this area belong to one species, different from *H. sanguinolentus*. The first available name is *Wesmaelinus transcaspicus* RADOSZKOWSKI, 1893 (now in genus *Homonotus*), and therefore other names often used in the past (see above) become junior synonyms of this taxon name. *Homonotus transcaspicus* can clearly be distinguished from the similar *H. sanguinolentus* and *H. niger* in both sexes by the deeply impressed metanotum. Females also differ by colour pattern. Genetic barcoding supports this species concept (Schmid-Egger in prep.).

It is noteworthy, that already RADOSZKOWSKI (1893: for *H. transcaspicus*) and GUSSAKOWSKI (1952: for *H. collaris*) recognized the deeply impressed metanotum as different between *H. transcaspicus* and *H. sanguinolentus* s.lat. However, GUSSAKOWSKI (1952) overlooked the description of RADOSZKOWSKI (1893). Haupt described the species twice from Balkans as *Homonotus balcanicus* and from Israel as *Homonotus ruficollis*, and WOLF (1972) also used this character in his key for Central European Pompilidae, but had no clear species concept for the whole genus outside of Central Europe (e.g. WOLF 2003).

The type specimen of *Wesmaelinus transcaspicus* is a male and not a female as indicated in the description of RADOSZKOWSKI (1893). This male in the Berlin collection carries a handwritten label "*transcaspicus*", what is the original handwriting of Radoszkowski (A. Antropov pers. com.) Because there is no other type specimen in the Moscow collection, and many types of Radoszkowski had been transferred to Berlin, I treat it as the true type. Radoszkowski probably confused the sex. The detailed description of Radoszkowski is exact and refers without doubt to that species. For that reason, I designate this male as holotype. It belongs to a male with red pronotum, what is much rarer than the all black form of males.

The examined type species of *Homonotus balcanicus* HAUPT, 1927 agree with *H.*

*transcaspicus* and is a **new synonym**. *Homonotus balcanicus* was treated as a synonym of *H. sanguinolentus* in YILDIRIM & WAHIS (2011).

*Homonotus ruficollis* was described by HAUPT (1962) from Israel by males only. The description agrees with the above mentioned male, a newly collected female from Israel is also similar in morphology and colour pattern with the exception of a red mesoscutum. Consequently, *H. ruficollis* is also a junior synonym of *H. transcaspicus*. nov.syn.

*Homonotus collaris* GUSSAKOWSKIJ (1952) is a true *H. transcaspicus* and therefore also a **new synonym** of the latter. The type was not examined, but the description (in Russian) is precisely and includes important characters as the deeply impressed metanotum and the red thorax colour of the male.

**D i a g n o s i s** : *Homonotus transcaspicus* is unique among Palearctic *Homonotus* by its marked longitudinal medial furrow on the metanotum. This furrow is always as long as metanotum, and often divides the metanotum in two parts, whereas it is restricted to the apical half or third in *H. niger* and *H. sanguinicollis*. The character is easy visible in (most) males and more variable in females. Females always have a red pronotum, whereas the remaining metasoma including propodeum is black. Two females from Syria (among 4 females from the same area) have the pronotum black, but the deeply impressed metanotum identifies the specimens clearly. Males are all black or have pronotum red (the latter in Central Asia only).

**F e m a l e** : Body length 7-8 mm. Colour: Black, red are the apical clypeal margin and the pronotum. Apical margin of tergite I and base of tergite II with lateral bands of silvery pubescence, bands medially widely interrupted (bands each 1/3 of tergal width. Tergite II apically with continuous band. Bands as large as width of hindtibia apically (in lateral view), basal band II somewhat larger. Wings infusate, apical spurs of mid- and hindtibia yellowish. Morphology: Apical clypeal margin in 2/3 of its length slightly emarginated. Maximal length of gena and distance between hindocellus and hindmargin of head as long as 0,8x length of antennal segment III. Antennal segment III as long as antennal segment IV. Apex of scutellum with impression, metanotum with longitudinal furrow, apically triangular emarginated.

**M a l e** : Body length 6-7 mm. Black, red are the apical clypeal margin and the pronotum. Pubescent bands of tergite similar to female. Morphology: Apical clypeal margin widely rounded, with a very small median impression. Gena above as wide as length of scape, below narrow (less than midocellar diameter). Pronotum 1.4x as wide as long. Apex of scutellum with impression, metanotum with longitudinal furrow, apically triangular emarginated. Hindtibial spurs white, 0,8x as long as metatarsus.

**V a r i a t i o n** : Two females from Syria (among 4 females) have pronotum black, but the deeply impressed metanotum identifies the specimens clearly. A female from Israel has pronotum and also mesoscutum red. Some males from Central Asia (among them the type specimens) have the pronotum red. These red males occur together with black males, because in 9 males from Kokand (Uzbekistan) collected on the same date, only one male has the pronotum red.

**D i s t r i b u t i o n** : From Central Asia to Balkans and eastern Mediterranean area, southwards to Israel. The distribution in the Mediterranean area is not clear. An isolated record from northwestern Italy (Liguria) bases on males only and may be doubtful.

## Nomen dubium

### *Homonotus albocalcaratus* (RADOSZKOWSKI, 1888)

*Wesmaelinus albocalcaratus* RADOSZKOWSKI, 1888: 472. Males and females, "Orenbourg, Caucase, Sibérie" (coll. Eversmann).

**D i s c u s s i o n .** This species was never revised and only listed by YASUMATSU (1932: 297), nor was a type mentioned in literature. Its true identity is not clear to me. From the description is it all black and shiny, and probably refers to a species from the eastern Palaearctic region.

## Zusammenfassung

Die Gattung *Homonotus* wird in der westlichen und zentralen Paläarktids revidiert. Ein Schlüssel für die Arten wird erstellt. *H. maroccanus* nov.sp. wird in beiden Geschlechtern aus Marokko beschrieben, der Holotypus ist ein Weibchen. *Homonotus niger* wird aus der Synonymie in den Rang einer validen Art gestellt. Die folgenden neuen Synonyme werden vorgeschlagen: *Wesmaelinus caucasicus* RADOSZKOWSKI, 1888 nov.syn., *Pompilus affinis* STEIN, 1859, nov.syn. und *Homonotus turanicus* GUSSAKOVSKIJ 1952 nov.syn. als *Homonotus sanguinolentus*; *Homonotus balcanicus* HAUPT, 1927 nov.syn.; *Homonotus collaris* GUSSAKOVSKIJ, 1952 nov.syn., und *Homonotus ruficollis* HAUPT, 1962 nov.syn. als *Homonotus transcaspicus* (RADOSZKOWSKI, 1893).

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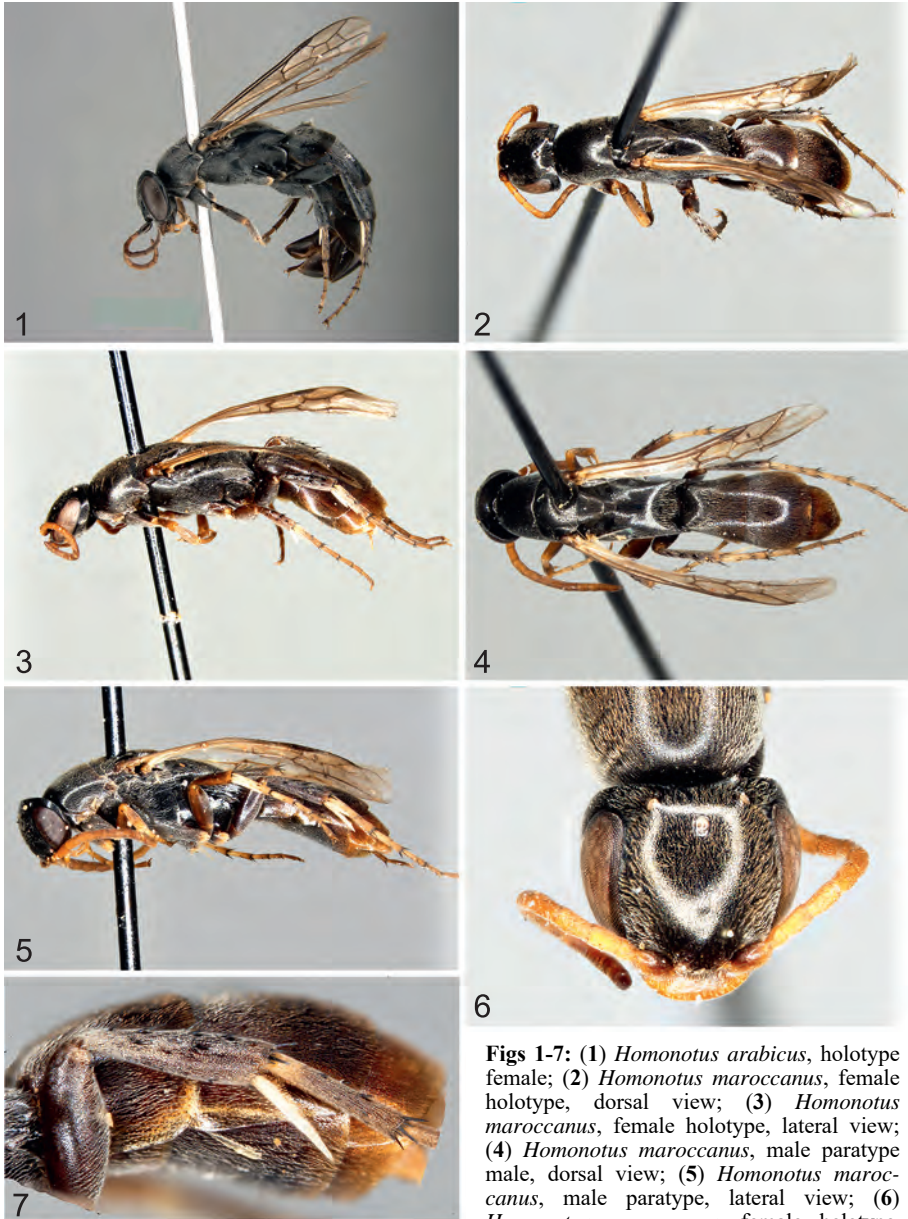
I thank Ester Ockermüller (OLL), Fritz Gusenleitner (OLL), Dominique Zimmermann (Wien), Chris Saure (Berlin), Achim Jacobs (Ranzin/Germany), Hans Nieuwenhuijsen (Netherlands) and Lukas Kirschey (Berlin) for loan of species and further information. Lukas Kirschey also supported the photographing with the Leica system in the Berlin Museum for Natural History. Alexander V. Antropov (Moscow) gave important information about type material of O. Radoszkowski. My sincerely thanks goes also to Raymond Wahis (Chaufontaine/Belgium), who supported my work with Pompilidae for many years now and who gave some information to the present project, and to Stefan Schmidt (München/Germany) for reviewing the draft.

## References

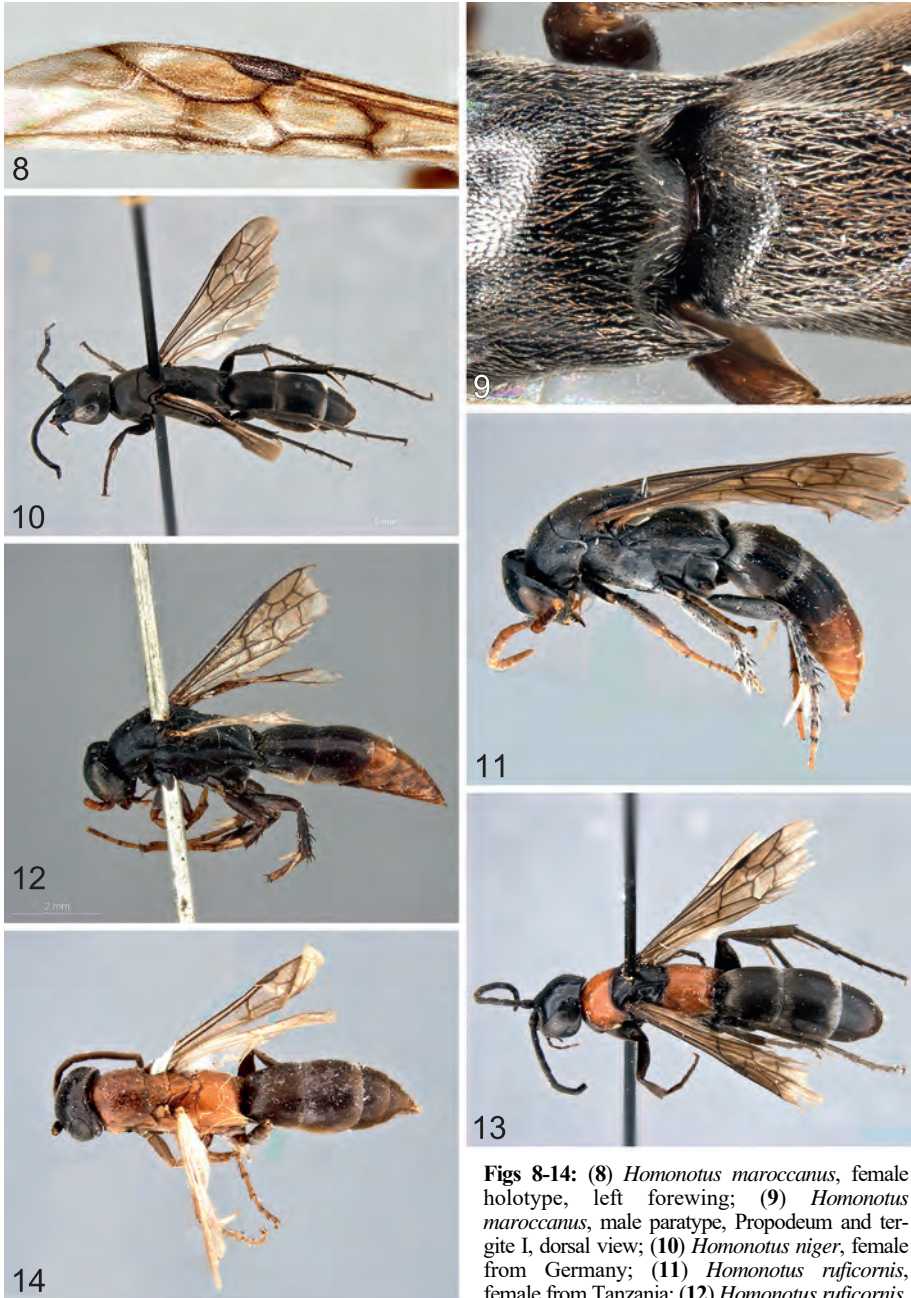
- ARNOLD G. (1935): The Psammocharidae (olim Pompilidae) of the Ethiopian region. Part IV. Subfamily Psammocharinae. — *Annals of the Transvaal Museum* **15**: 413-483.
- BOHART R.M & A.S. MENKE (1976): Sphecids wasps of the World, a generic revision. — University of California Press, Berkeley, Los Angeles, London; 695 pp.
- GUSSAKOVSKIJ V. (1952): Neue und wenig bekannte Psammochariden- und Spheciden-Arten des westlichen Tadjikistan. — *Trudij Zoo. Ins. Akad. Nauk SSSR* **10**: 199-288.
- PRIESNER H. (1966): On some Pompilidae of Israel. — *Israel Journal of entomology* **1**: 89-152.
- RADOSZKOWSKI O. (1893): Faune hyménoptérologique transcaspicienne. — *Horae Soc. ent. Rossicae* **27**: 58-61.
- SCHMID-EGGER C. (2017): Order Hymenoptera, family Pompilidae. — *Arthropod fauna of the UAE* **6**: 350-416. Abu Dhabi.

- WISNIOWSKI B. (2009): Spider hunting wasps (Hymenoptera, Pompilidae) of Poland. — *Ojcow*, 2009, 432 pp.
- WOLF H. (1972): Hymenoptera Pompilidae. — *Insecta Helvetica Fauna* **5**: 176 pp, Zürich.
- WOLF H. (2003): Wegwespen aus Zentralasien und dem Iran (Hymenoptera, Pompilidae). — *Linzer biologische Beiträge* **35** (2): 801-811.
- YASUMATSU K. (1932): A list of the species of the genus *Homonotus* of the world, with description of a new species of the genus from Japan (Hymenoptera, Psammocharidae). — *Annot. Zool. Japan* **13**: 297-302.
- YILDIRIM E. & R. WAHIS (2011): Contribution to the knowledge of the Pompilidae (Hymenoptera, Aculeata) fauna of Turkey with the checklist of species. — *Turk. J. Zool.* **35**: 677-688.

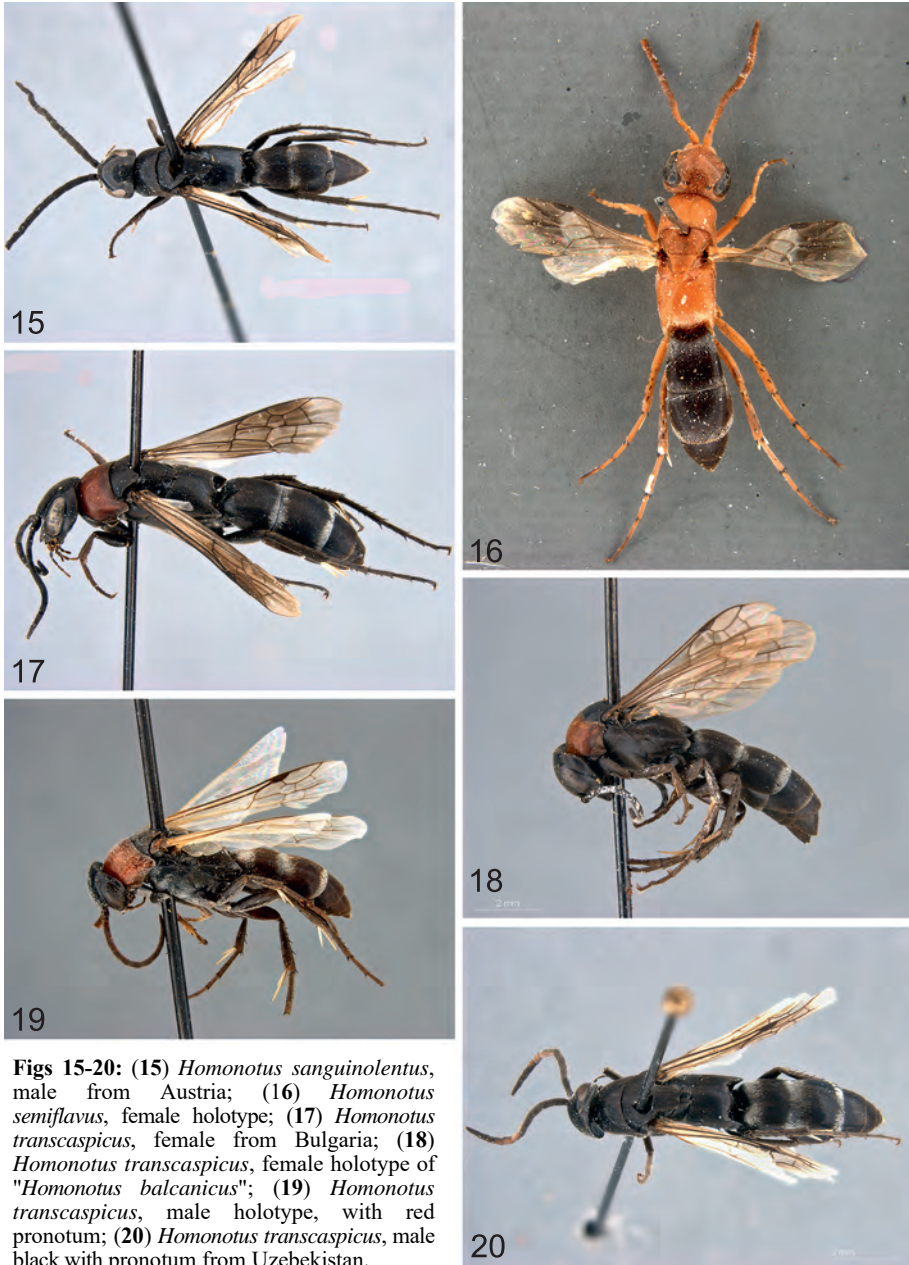
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**Figs 1-7:** (1) *Homonotus arabicus*, holotype female; (2) *Homonotus maroccanus*, female holotype, dorsal view; (3) *Homonotus maroccanus*, female holotype, lateral view; (4) *Homonotus maroccanus*, male paratype male, dorsal view; (5) *Homonotus maroccanus*, male paratype, lateral view; (6) *Homonotus maroccanus*, female holotype, head; (7) *Homonotus maroccanus*, female holotype, left hindleg.



**Figs 8-14:** (8) *Homonotus maroccanus*, female holotype, left forewing; (9) *Homonotus maroccanus*, male paratype, Propodeum and tergite I, dorsal view; (10) *Homonotus niger*, female from Germany; (11) *Homonotus ruficornis*, female from Tanzania; (12) *Homonotus ruficornis*, male holotype of "*Wesmaelinus aegyptiacus*"; (13) *Homonotus sanguinolentus*, female from Austria; (14) *Homonotus sanguinolentus*, female holotype of "*Wesmaelinus caucasicus*".



**Figs 15-20:** (15) *Homonotus sanguinolentus*, male from Austria; (16) *Homonotus semiflavus*, female holotype; (17) *Homonotus transcaspicus*, female from Bulgaria; (18) *Homonotus transcaspicus*, female holotype of "*Homonotus balcanicus*"; (19) *Homonotus transcaspicus*, male holotype, with red pronotum; (20) *Homonotus transcaspicus*, male black with pronotum from Uzbekistan.



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