

Two new species of a new genus of Sphecidae from Senegal and Yemen (Hymenoptera)

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Abstract: *Xanthosphecium* gen. nov. *harteni* spec. nov. from Yemen, and *X. sahelensis* spec. nov. from Senegal are described.

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Introduction

Among the material from a malaise trap set up by Mr. A. van Harten, Yemeni German Plant Protection Project, in Al Kowd, Yemen, a single female of a new species was found. Among material obtained during a research program in Senegal (Everts, 1990) two female specimens of another species were discovered. Both species belong to the same, apparently undescribed, genus.

The type material is deposited in the collections of the Zoological Museum of Amsterdam (ZMA) and the Laboratory of Entomology, University of Wageningen (LUW).

Xanthosphecium gen. nov.

(figs. 1, 2, 4)

Generic diagnosis

Xanthosphecium is easily recognized by its special wing venation. [For wing terminology see Bohart & Menke (1976), fig. 5, page 18.] Marginal cell short, not touching the costal margin; two submarginal cells, the first receiving the first recurrent vein and the second the reduced second recurrent vein (fig. 1). Submarginal cell II posteriorly nearly three times as wide as anteriorly. Discoidal cell I closed. Discoidal cell II open (Cu₁ and 2m-cu reduced). In hindwing only a closed submedial cell

present. Medium vein diverging at cu-a. Jugal excision deep, three fourth of the length of the jugal lobe; anal excision present (fig. 2).

Head almost twice as wide as mesonotum. Inner eye margin slightly concave. Distance between the eyes across vertex and across clypeus equal. Apical margin of clypeus with two pointed teeth. Base of clypeus partly surrounding the antennal sockets. Occipital carina reduced to a mesodorsal remnant. Hypostomal carina posteriorly present and anteriorly absent. Palpal formula 5-3. Scrobal sulcus absent; episternal sulcus well defined.

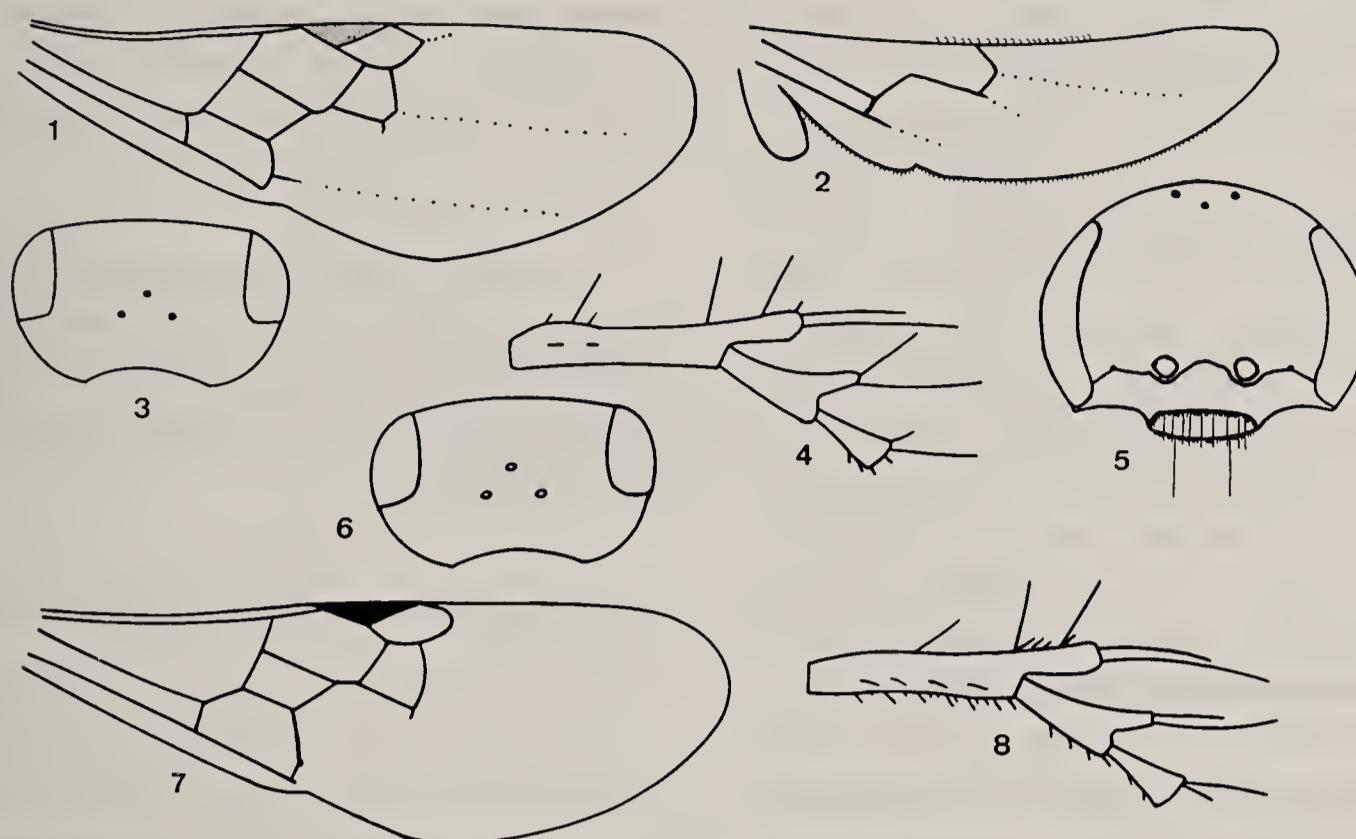
Propodeum large: midlength of dorsum equal to basal width; enclosure absent; spiracle separated from propodeal base by about three times its length. Tergum I without oblique basal carina. Head and thorax without pubescence. Sternites with apical hairs. Tergum VI with flat pygidial plate, with lateral carina.

Metatarsus I and next tarsomere with long external lobes with long spines at the apex (fig. 4). Claws unarmed. All tibiae with one spine each.

Type-species: *Xanthosphecium harteni* spec. nov.

Systematics

Pulawski (1992) gives an extensive discussion of the characteristics of *Eremiasphecius* Kohl (1897), which shows the superficial similarity to *Xanthosphecium*. However, *Xanthosphe-*



Figs. 1-8. *Xanthosphecius* spp; 1-4, *Xanthosphecius harteni* spec. nov.; 5-8, *Xanthosphecius sahelensis* spec. nov.; 1, forewing; 2, hindwing; 3, head, dorsal view; 4, tarsus I; 5, head, front view; 6, head, dorsal view; 7, forewing; 8, tarsus I.

cium can be distinguished easily from *Eremiasphecium* by the number of submarginal cells: two in the new genus and three in *Eremiasphecium*. *Eremiasphecium* has two closed discoidal cells (except *budrysi* with an open discoidal cell II) and *Xanthosphecius* one closed and one open discoidal cell. The new genus also differs from *Eremiasphecium* in colour; the black markings are very few and small in *Xanthosphecius*.

The similarity of *Xanthosphecius* and *Eremiasphecium* places *Xanthosphecius* in the tribe Eremiaspeciini. Alexander (1992) states a close relationship between the bees and the Philanthinae (i.e. tribes Aphilanthopini, Cercerini, Philanthini, and Pseudoscoliini). The tribes Eremiaspeciini and Odonthospeciini, which Bohart & Menke (1976) placed in the Philanthinae, do not form a monophyletic grouping with these other four tribes. As Alexander does not suggest in which subfamily the Eremiaspeciini should be placed they will stay in the Philanthinae for the time being.

Following Bohart & Menke (1976, p. 58) the "Key to tribes of Sphecidae" should be amended as follows. Number 32 second couplet should read: Hindwing media diverging at cu-a, palpal formula 5-3, mandibular sockets closed (mandibles must be spread), forewing

with three or two submarginal cells, small and rare wasps from Mediterranean, Transcasian, Mongolia, West Africa, and Southern Arabian Peninsula.....Eremiaspeciini

Etymology: The new generic name *Xanthosphecius* is an arbitrary combination of the greek xanthos meaning yellow, and the greek sphecius meaning vespula.

Xanthosphecius harteni spec. nov. (figs. 1-4)

Type material:

Holotype: ♀, Yemen, Al Kowd, 27.x.-15.xi.1992, mal. trap, A. van Harten (ZMA).

Description

Female 4 mm. Colour yellow and white with a few black spots. Head anteriorly yellow and posteriorly white. Palpi white (formula 5-3). Mandible unidentate, white with apical one third light ferruginous. External side of mandible with some hairs about as long as flagellomere I. Mandibular socket closed. Clypeus seven times wider than high, apical margin bidentate; distance between the two teeth equal to the distance between one tooth and the

compound eye. Clypeus somewhat bulging in the middle, without hairs on apical margin. Base of clypeus half way round antennal sockets. Labrum as wide as the distance between the two teeth of the clypeus, rounded at apex. Apex of labrum with short hairs and two long, forward protuding hairs, as long as flagellomeres I and II combined. Gena glabrous, shiny with short microscopical lines. Antenna ivory white with short pubescence. Flagellomeres I-X as wide as three fourth of the length. Head seen from above very large behind the eyes (fig. 3). Inner eye margin somewhat concave. Ocellar measurements: OOL : POL = 13 : 5 and OOL : SOL = 13 : 4. The posterior ocelli are placed on an imaginary line interconnecting the posterior corners of the compound eyes.

Pronotum white; collar bulging and clearly separated from the mesonotum by a deep suture. Collar laterally with fine black lines. Mesonotum dorsally orange with two longitudinal yellow lines, very finely punctated. Scutellum and metanotum white. Irregular black spot lateral of mesonotum. Tegula white. Propodeum white with a yellow marginated Y-formed black spot, running from base till lower end of hindslope. Propodeal enclosure somewhat longer than wide at base, finely punctated. Mesopleuron glabrous and white. Scrobe light brown. Side of propodeum with oblique fine carinas.

Tergite I white with narrow black median line from base to half way the tergite. Tergites II-VI with basal half yellow and apical half white. Tergite VI with flat V-shaped pygidial plate defined by lateral carina and rounded at apex. Sternites shining white with one row of long straight hairs at apical margins.

Wings hyaline; stigma white. Forewing with two submarginal cells, one closed and one open discoidal cell; cu1 and 2 m-cu strongly reduced (fig. 1). Marginal cell short, not touching the costal margin. First submarginal cell receiving first recurrent vein. Second submarginal cell with reduced 2m-cu. Veins light brown. Hindwing with submedial cell. Median vein diverging at cu-a. Jugal lobe at least half the size of anal lobe (fig. 2).

Legs ivory white. Metatarsus I and next tar-

somere with a long lobe with spines at the apex (fig. 4). Claws unarmed, brown. All tibiae with one apical spine each. Hindtibia with three external rows of small spines.

Male unknown.

Etymology: I am very pleased to name this species after Mr. A. van Harten, who collected so much material for the Zoological Museum Amsterdam in the Cape Verde Islands as well as in Yemen.

Xanthosphecius sahelensis spec. nov. (figs. 5-8)

Type material

Holotype: ♀, Senegal, 25-35 KM sud de Richard Toll, piège malaise, 13.ix.1989, leg. H. v. d. Valk c.s. (LUW). Paratype: ♀, same data as holotype (ZMA).

Description

Female 4.5 mm. Colour dirty white, partly translucent and with some black spots. Palpi dirty white (formula 5-3); apical point of last segment of maxillary palpus red. Mandible unidentate, apical one third light ferruginous, base dirty white. External side of mandible with a few hairs as long as flagellomere I. Mandibular socket closed. Apex of labrum weakly arched with short hairs and two long hairs equally long as flagellomeres I and II combined. Clypeus seven times wider than high; apical margin bidentate; distance between the two teeth equal to the distance from one tooth to the compound eye (fig. 5). Clypeus somewhat bulging in the middle. Apex of clypeus with seven long, forward protuding hairs between the two teeth. Base of clypeus half way round antennal sockets. Labrum as wide as the distance between the two teeth of the clypeus, rounded at apex. Pedicel and flagellomeres II-IX one fourth longer than wide. Flagellomeres I and X twice as long as wide. Eye black with brown irregular lines. Ocelli round and light brown. Two transverse tiny black stripes behind posterior ocelli. Ocellar measurements: OOL : POL = 14 : 8 and OOL : SOL = 14 : 5. The posterior ocelli are placed

Table 1. Differences in characteristics between *Xanthospheciun harteni* spec. nov. and *X. sahelensis* spec. nov.

	<i>X. harteni</i> spec. nov.	<i>X. sahelensis</i> spec. nov.
Mandible	clear white	dirty white
Frons	yellow	translucent
Compound eye	white	blackish with irregular brown stripes
Gena	glabrous	some pubescence
Mesonotum	orange yellow with two longitudinal yellow lines	translucent, light brown
Propodeum	white with yellow marginated Y-formed black spot continuing in a narrow line on hindslope	black with broad black line on hindslope
Tergites II-V	without black marking	with black oval spot
Stigma	white	brown

on an imaginary line interconnecting the posterior corners of the eyes (fig. 6). Inner eye margin somewhat concave. Frons translucent with microscopical vertical lines. Head bulging behind compound eyes. Gena with some pubescence and microscopical lines in between.

Pronotum with a high collar and three small black stripes, one central and two lateral diverging backwards. Mesonotum translucent and shining with six structural transversal lines at each side. Dorsum microscopically punctated. Between scutellum and tegula a black spot. Tegula ivory white. Irregular black spot between postscutellum and hindwing. Dorsum of propodeum equally long and wide at base, black, and very finely punctated. Hindslope of propodeum with broad black vertical line. Side of propodeum with oblique fine carinas. Lower metapleural area translucent with some oblique fine carinas.

Gaster ivory white. First tergite with a medial black line. Tergites II and IV with transversal black spots at the base. Tergite VI with flat V-shaped pygidial plate defined by lateral carina and rounded at apex. Sternites with long straight hairs at apical margin.

Wings hyaline with some short pubescence. Stigma brown. Marginal cell oval, equally long as stigma, not touching the costal margin. Two submarginal cells; the first receiving first recurrent vein, the second with a strongly reduced 2m-cu. First discoidal cell present, second discoidal cell open, Cu1 absent (fig. 7). Hindwing with submedial cell. Medium vein diverging at cu-a. Jugal lobe at least half the

size of the anal lobe. Hindwing the same as in *X. harteni*, see figure 2.

Hindtibia externally with three rows of small spines. All tibiae with one apical spine each. Metatarsus I and next tarsomere with unusual long lobe with two spines at the apex reaching beyond the apex of the next tarsomere (fig. 8). Claws unarmed, light brown.

Male unknown.

Etymology: The species is named after the Sahel zone in which the specimens were collected.

Comparative notes

The two new species of the genus resemble very much, but still differ in the characteristics summarized in table 1.

References

- ALEXANDER, B. A., 1992. An exploratory analysis of cladistic relationships within the superfamily Apoidea, with special reference to Sphecid wasps (Hymenoptera). – *J. Hym. Res.* 1: 25-61.
- BOHART, R. M. & A. S. MENKE, 1976. *Sphecid wasps of the world. A generic revision*: i-ix, 1-695. University California Press, Berkeley, Los Angeles, London.
- EVERTS, J. W., 1990. *Environmental effects of chemical locust and grasshopper control*: 1-277. FAO, Rome.
- KOHL, F. F., 1897. Eremiasphecium Kohl. Eine neue Gattung der Hymenopteren aus der Familie der Sphegiden. – *Annln naturh. Mus. Wien* 12: 67-70.
- PULAWSKI, W. J., 1992. A review of Eremiasphecium Kohl, 1897 (Hymenoptera: Sphecidae). – *Entomofauna* 13: 397-408.