



## Ants of the Genus *SOLENOPSIS* Westwood, 1840 (Hymenoptera: Formicidae) in Egypt with a description of the worker castes of *S. cooperi* Donisthorpe, 1947

MOSTAFA R. SHARAF<sup>1</sup>, BRIAN TAYLOR<sup>2</sup> & CHRISTIANA KLINGENBERG<sup>3</sup>

<sup>1</sup>Entomology Department, Faculty of Science, Ain Shams University, Cairo, Egypt. E-mail: antsharaf@yahoo.com

<sup>2</sup>11, Grazingfield, Wilford, Nottingham, NG11 7FN, U.K. E-mail dr.brian.taylor@ntlworld.com

<sup>3</sup>Staatliches Museum für Naturkunde, 76133 Karlsruhe, Germany. E-mail: klingenberg@smnk.de

### Abstract

The Egyptian species of the ant genus *Solenopsis* Westwood, 1840, are revised and keyed. Four species are recognized: *S. cooperi* Donisthorpe, 1947; *S. lou* Forel, 1902; *S. occipitalis* Santschi, 1911; and *S. kochi* Finzi, 1936 (**stat. n.**). *Solenopsis occipitalis* is recorded for the first time from Egypt. *Solenopsis kochi* is redescribed and elevated to species rank. *Solenopsis bakri* Sharaf, 2007 is synonymized under *S. cooperi*. The workers of *S. cooperi* are described for the first time, males and alate gynes are measured, and ecological notes on habitats are given. Available literature records of all the species are reviewed.

**Key words:** Ant Fauna, Egypt, *Solenopsis*, *Solenopsis cooperi*, Palearctic, North Africa, Myrmicinae

### Introduction

This paper forms part of the ongoing internet effort to fully document and record all information on the ants of Egypt (Taylor & Sharaf, 2007, ongoing). The genus *Solenopsis* Westwood, 1840, is one of the largest ant genera. It includes more than 250 described species and subspecies distributed in tropical countries and temperate regions worldwide (Bolton 1995, Agosti et. al. 2000). Members of this genus nest in soil, sand mounds, and litter and are generalized foragers (Brown, 2000).

There is an unclear issue of genus status. Bolton (1995: 27) lists the genus *Solenopsis* Westwood, 1840, as having a junior synonym *Diplorhoptrum* Mayr, 1855. The earliest authority for the synonymization was Mayr (1862: 751) but Baroni Urbani (1968a: 68) revived *Diplorhoptrum* as a separate genus. The determining factor was claimed to be a distinctive conformation of the laminae volsellares of the European populations of *Solenopsis*. Baroni Urbani did not refer to Mayr's synonymy and seems otherwise to have made comparison only with the neotropical type species *S. geminata* (F.). This separation has been followed by Dlussky & Radchenko (1994) and Lomholdt & Rasmussen (1986). Bolton (1987: 285) noted that the peculiar male genitalia were limited to the *fugax*-species group while stating that the male genitalia of species-groups other than the *fugax*- and *geminata*-groups had not been compared. Most researchers continue to treat *Diplorhoptrum* as a junior synonym but a few have re-adopted *Diplorhoptrum* as a separate genus. In our experience of specimens from Egypt, and of indigenous and immigrant species (*S. geminata* and *S. globularia*) found in sub-Saharan Africa, the minors of the *geminata* species-group are not distinctively different in overall form from the species that do not have major workers. Therefore, in the absence of, say, genetic evidence, we prefer to retain the concept of a single genus, *Solenopsis*.

The genus members are monomorphic or polymorphic. The workers can be distinguished from all other genera of the subfamily Myrmicinae by the combination of the following characters: Mandibles with three or four teeth. Palp formula 2,2 or 1,2. Clypeus strongly longitudinally bicarinate, with the median area sharply

elevated and deeply inserted between the closely approximated frontal lobes. Anterior margin of clypeus with a single unpaired long median seta. Antennae 10-segmented (very rarely 9-segmented) with a 2-segmented club. Frontal carinae and antennal scrobes absent. Propodeum unarmed.

Gynes are distinguished by the following characters: Larger to much larger than the conspecific worker. Antennae usually 11-segmented, less often 10-segmented, with a 2-segmented club and, usually, one more antennomere than their workers. Head of generalized form, except in parasitic species which have the head broadened anteriorly at the level of the clypeus so that the clypeal carinae are strongly divergent. Propodeum greatly rounded. Petiole node broader than in the worker. Postpetiole broadly attached to the gaster. Males have the following features: Antennae 12-segmented (occasionally 13-segmented); scapes rather short and barrel-shaped. Clypeus rounded and swollen, only shallowly inserted between the antennal sockets; clypeal setae not in clear patterns. Mandibles weakly developed, with only one or 2 teeth. Petiole and postpetiole as in the gyne but postpetiole more broadly attached to the gaster.

In his genus-level global study of the ants related to *Solenopsis* and *Pheidologeton* Mayr, 1862, Ettershank (1966: 134) listed 257 *Solenopsis* taxa. There are very few species-level analyses and no useful papers on this taxonomically difficult group in the eastern Mediterranean region. Egyptian *Solenopsis* ants have received little attention other than the work of Finzi (1936), who provided the sole taxonomic revision, and a study of ants of the Sinai Peninsula (Mohammed, 1979, and Sharaf, 2006). We now know *Solenopsis* is represented in Egypt by four species: *S. cooperi*, *S. lou*, *S. occipitalis* and *S. kochi*. For those, the original descriptions are cursory, lack good illustrations or measurements, and do not provide adequate separation. Therefore, we redescribe and measure all the castes of the available species.

## Measurements and indices

Measurements in mm and indices are as follows:

TL = Total Length; the outstretched length of the ant from the mandibular apex to the gastral apex.

HW = Head Width; the maximum width of the head behind eyes in full face view.

HL = Head Length; the maximum length of the head, excluding the mandibles.

CI = Cephalic Index ( $HW \times 100/HL$ ).

SL = Scape Length, excluding basal neck.

SI = Scape Index ( $SL \times 100/HW$ ).

EL = Eye Length; the maximum diameter of the eye.

ML = Mesosoma Length; the length of the mesosoma in lateral view, from the point at which the pronotum meets the cervical shield to the posterior base of the propodeal lobes or teeth.

PL = Petiole Length; the maximum length measured in dorsal view, from the anterior margin to the posterior margin.

PW = Petiole Width; maximum width measured in dorsal view.

PPL = Postpetiole Length; maximum length measured in dorsal view.

PPW = Postpetiole Width; maximum width measured in dorsal view.

All measurements were given in millimetres and follow the standard measurements (Bolton, 1987). The photographic images were taken using a high-resolution camera (JVC KY-F70B) attached to a Leica Z6 APO stereo-microscope. The microscope was equipped with a Z-Stepper to enable the generation of usually 30 images in different focus layers from which a montage image was computed using the software package AutoMontage® of Syncroscopy [<http://www.syncroscopy.com>].

## Abbreviations of Collections

AINC      Ain Shams University Collection, Faculty of Science, Cairo, Egypt.

ALFC      Alfieri Collection, Faculty of Agriculture, El-Azhar University, Cairo, Egypt.

|      |   |
|------|---|
| BMNH | The Natural History Museum, London, United Kingdom.   |
| BTC  | Brian Taylor Collection, U.K., to be deposited in the Oxford University Museum, United Kingdom. |
| EESC | Egyptian Entomological Society Collection, Cairo, Egypt.  |
| MCZC | Museum of Comparative Zoology, Cambridge, MA, U.S.A.  |
| MHNG | Muséum d'Histoire Naturelle, Geneva, Switzerland.   |
| NHMB | Naturhistorisches Museum, Basel, Switzerland.   |
| SMNK | Staatliches Museum für Naturkunde Karlsruhe, Germany.   |
| SHC  | Mostafa Sharaf Collection, Egypt.   |

## Keys to *Solenopsis* from Egypt

### Worker

- 1 Eyes with more than one facet ..... 2
- Eyes with a single facet ..... 3
- 2 Eyes with 9 facets, the outer circle of facets enclosing a single relatively large facet; head with weakly convex sides and an impressed occipital margin (Plate 2, Figs. a, b, c) ..... *lou*
- Eyes with 12 facets and 4 facets in the longest row; head with nearly parallel sides and a distinctive flattened profile (Plate 1, Figs. d–f) ..... major workers of *cooperi*
- 3 Head in face view with nearly parallel sides; head in lateral view with flat dorsal and ventral surfaces; propodeum profile with distinct angle at junction of dorsum and declivity; CI ca 78, SI ca 80 (Plate 1, Figs. a–c) ..... minor workers of *cooperi*
- Head in face view with sides nearly parallel or shallowly convex; head in lateral view with convex dorsal and ventral surfaces; propodeum profile with a smoothly rounded transition from dorsum to declivity; CI ca 85 or more, SI ca 75 ..... 4
- 4 TL 2.0; head in face view with shallowly convex sides with widely rounded posterior corners; eye length 0.04 times head width (EL 0.02) (Plate 2, Figs d–e) ..... *kochi*
- TL 1.30–1.71; head in face view with clearly parallel sides; eye length 0.1 times head width (EL 0.04–0.05) ..... *occipitalis*

### Gynes

- 1 Body uniform dark brown, TL 5.7 or more (Plate 2 f–g) ..... *kochi*
- Body bicoloured with gaster lighter than head and mesosoma, TL 4.50–5.60 ..... 2
- 2 Head, mesosoma, and waist dark brown, TL 5.30–5.60, SI 64–79, CI 88–93 ..... *lou*
- Head, mesosoma, and waist light brown or yellowish brown, with distinctive large ocelli, TL 4.50–4.75, SI 78–91, CI 73–79 (Plate 1 g–i) ..... *cooperi*

### Males

- 1 Relatively small but with distinctive large ocelli, overall dark brown with contrasting white funiculi and legs, TL 3.0–3.6, HL 0.50 or less (Plate 1 j–l) ..... *cooperi*
- Larger, TL 4.36–5.30, HL 0.60 or more ..... 2
- 2 Overall black with yellow funiculi ..... *lou*
- Overall piceous with yellowish-brown funiculi (Plate 3) ..... *kochi*

## Descriptions

### *Solenopsis cooperi* Donisthorpe, 1947

(Plate 1)

*Solenopsis cooperi* Donisthorpe, 1947: 110. Holotype gyne and paratype gynes and males, EGYPT: Siwa, 15 & 24.v.1935 (*J. Omer-Cooper*) (BMNH) [examined].

*Solenopsis bakri* Sharaf in Fadl, 2007: 242. Holotype worker, one alate gyne, one male and syntype workers, EGYPT:

**Worker.** TL 1.53–1.76, HL 0.41–0.56, HW 0.34–0.45, SL 0.25–0.35, EL 0.02, AL 0.42–0.62, PL 0.12–0.21, PW 0.12–0.17, PPL 0.10–0.14, PPW 0.08–0.17, SI 73–77, CI 80–83 (12 measured).



**PLATE 1.** *Solenopsis cooperi* (a–c) small worker, (a) head in full-face view, (b) body in profile, (c) dorsal view; (d–f) large worker, (d) head in full-face view, (e) body in profile, (f) dorsal view; (g–i) alate gyne, (g) head in full-face view, (h) body in profile, (i) dorsal view; (j–l) male, (j) head in full-face view, (k) body in profile, (l) dorsal view.

The workers examined could be divided into two size groups, suggesting dimorphism. Worker

dimorphism has not been reported for Egyptian *Solenopsis*, but it is known for *S. orbula* from Corsica (Emery, 1916). Both major and minor workers were collected from a nest in association with gynes and males. Both groups of workers have a similar head shape, especially the flattened profile. The morphological differences are as follows:

**Minor worker** (Plate 1, Fig. a, b, c). Head relatively long and narrow, with a distinctive narrow profile; CI ca. 78. Mandibles quite narrow with only moderate teeth, the apical tooth somewhat elongated. Clypeus with a weakly impressed anterior margin and distinct but not sharp carinae. Frontal lobes set quite far apart. Frontal notch distinct. SI ca. 80. Head smooth and shiny with very minute hair pits. Promesonotum with a smooth profile, anteriorly rounded but posteriorly flat. Metanotal groove distinct, quite shallow and continuous dorsally. Propodeum with a distinctive dorsal longitudinal impression and posteriorly terminating in angular corners. Propodeal spiracles vertically ovoid and facing posteriorly. Petiole anterior peduncle short and narrow; viewed from above this is quite distinct. Petiole node quite high and narrow. Body with relatively few scattered short hairs. Overall colour dusky yellow, with the posterior of the gaster darkened.

**Major worker** (Plate 1, Fig. d, e, f). Head smooth with widely scattered but distinct hair pits; CI ca. 80. Mandibles narrow. Clypeus with only a weakly impressed anterior margin and very weak carinae. Frontal lobes set moderately far apart. Scape with a narrow base broadening after the mid-point and widest at about the two-thirds point, SI ca. 70. Promesonotum profile smooth and uninterrupted, almost flat posterior to the anterior convex half of the pronotum. Metanotal groove distinctly impressed. Propodeum with a small circular spiracle. Petiole node quite low with a domed profile. Gaster distinctly lighter than rest of the body. Overall with sparse, fine, relatively short, erect hairs.

The workers are readily distinguished from the known circum-Mediterranean species by the long peduncle to the petiole; the relatively high, narrowly rounded petiole profile; the proportionally longer head which is flattened in lateral view; and the angular, near dentate and longitudinally weakly furrowed propodeal dorsum.

**Gyne** (Plate 1, Figs g, h, i). Paratype. TL 4.0, HL 0.75, HW 0.55, SL 0.50, EL 0.15, AL 1.0, SI 91, CI 73 (1 measured).

Additional material: TL 4.50–4.75; HL 0.75; HW 0.57–0.60; SL 0.47–0.475; EL 0.17–0.20; AL 1.15; SI 78–83; CI 79 (2 measured).

The large ocelli are very distinctive compared to the other circum-Mediterranean species.

**Male** (Plate 1, Figs j, k, l). Paratypes. TL 3.0, HL 0.35–0.45, HW 0.40–0.45, SL 0.10, EL 0.25, AL 1.10–1.25, SI 22–25, CI 100–114 (3 measured).

**Additional material.** TL 3.0–3.6, HL 0.45–0.50, HW 0.40–0.52, SL 0.075–0.20, EL 0.17–0.25, AL 1.05–1.22, SI 21–43, CI 89–104 (7 measured).

The newly collected specimens appear to match the rather short description of *S. cooperi* given by Donisthorpe (1947), i.e. notably being brown, smooth & shining, with pale yellow appendages. The large ocelli also appear to be distinctive compared to the other circum-Mediterranean species.

*Solenopsis cooperi* has remained little known since the description by Donisthorpe (1947) when only the gynes and males were collected from Siwa Oasis in the western desert (previously known as the Libyan Desert). It appears to be restricted to Egypt. During two field trips carried out by the first author to Saloga Island Protectorate (located in the River Nile in Aswan) and to Abu-Swelam village (El-Minyia Governorate, Upper Egypt), many workers, males and two alate gynes were collected. These were mistakenly described as a new species by Sharaf *in* Fadl (2007). By comparing the sexual castes collected with the type material deposited in the ant collection of the British Museum of Natural History, we have confidence in our description of the associated workers and our further notes on the sexuals. Thus, the worker caste of *S. cooperi* is described for the first time and measurements of all castes are given.

Very little is known of the biology of *S. cooperi*, except for the colony from which our specimens were collected. This colony was small and in loose sandy soil at the base of an old tree. It is likely the species has a broad distribution and may be present at many other localities in Egypt or North Africa, especially in the Nile Valley and its islands, because the abundance of transport on the Nile ensures no place can be considered



isolated. In addition, a single worker specimen was collected from Abu-Swelam village in the Nile valley far from Aswan. The original finding (Donisthorpe, 1942) at Siwa Oasis also is a long way from the Aswan location of the second finding.

**Material examined.** 32 workers, 2 ♀, 7 ♂; Egypt, Saloga Islands Protectorate, Aswan (Upper Egypt), 2.v.2002; 24.05° N; 32.56° E (*M. R. Sharaf*); 1 worker, Abu-Swelam (El-Minyia Governorate, Upper Egypt), 29.vi.2003; 28.06° N; 30.45° E (*M. R. Sharaf*). Three workers were deposited in BTC; five will be placed in the EESC; two will be at SMNK and the remaining workers in SHC.

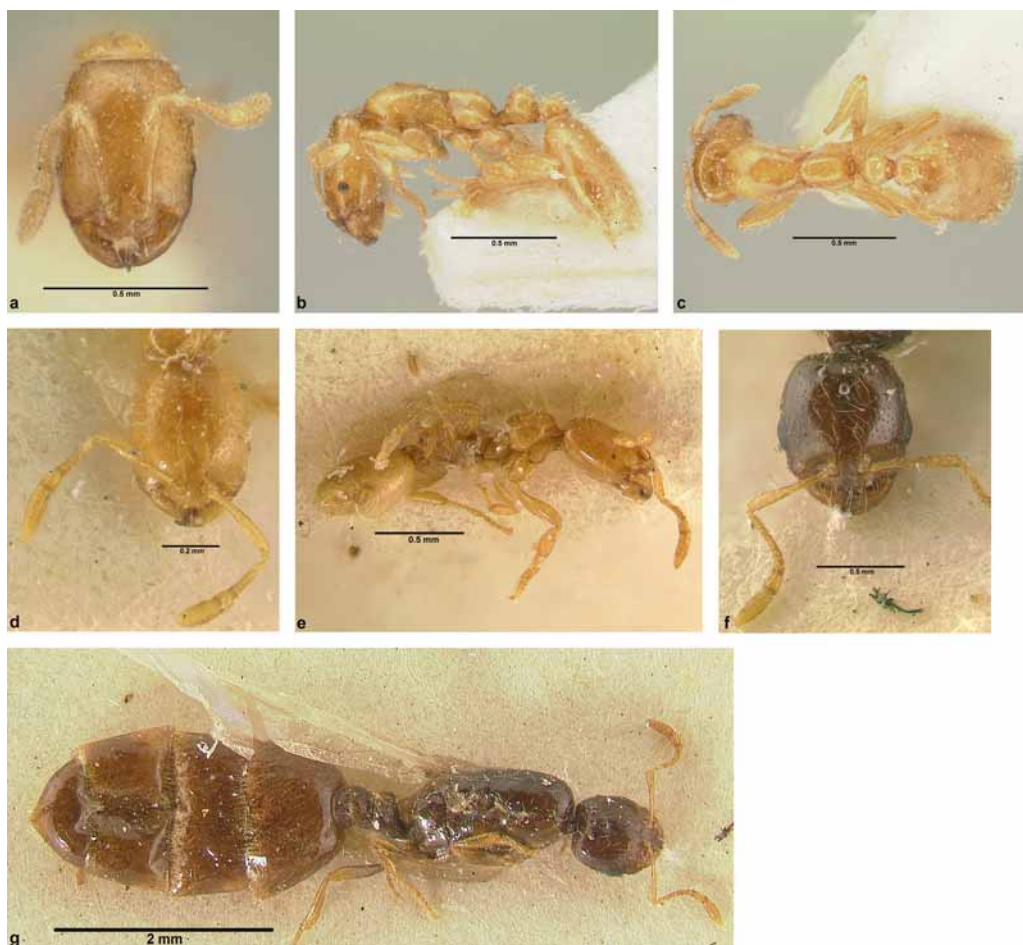
**Previous records.** Burg El-Arab (Alexandria), 20.iii.1956 (**ALFC**); Burg El-Arab (Alexandria), 20.iii.1956 (**AINC**) (Mohammed, 1979; based on sexuals only).

### *Solenopsis lou* Forel

(Plate 2)

*Solenopsis lou* Forel, 1902: 152. Syntype gyne and male, ALGERIA: Biskra, Hammam Saladin, 12.iv.1896 (*Diehl*) (MHNG) [examined]. Santschi, 1911: 81: description of worker. Gyne illustrated without comments by Santschi (1934, Fig. 3).

**Worker. Plate 2 (Fig. a, b, c)** TL 1.50–2.00, HL 0.45–0.55, HW 0.30–0.47, SL 0.27–0.38, PL 0.15–0.22, PW 0.12–0.15, PPL 0.10–0.28, PPW 0.12–0.15, AL 0.48–0.62, EL 0.02–0.05, SI 80–90, CI 67–85 (7 measured).



**PLATE 2.** (a–c) *Solenopsis lou* worker (a) Full face-view, (b) body in profile, (c) dorsal view; (d–g) *Solenopsis kochi* (d) worker head in full-face view, (e) worker body in profile; (f) alate gyne head in full-face view, (g) alate gyne dorsal view.

Eyes with 9 facets, the outer circle of facets enclosing a single relatively large facet. Head with a higher

CI, i.e. relatively longer and narrower, than the other species, also with a deeper profile. The head is parallel-sided up to the two-thirds point then narrowing significantly and with broadly rounded posterior corners. Clypeus with a distinctly impressed anterior margin and sharply defined carinae. Frontal lobes close together. Mandibles similar to those on the major worker of *cooperi* in being quite broad and with strong black teeth. Scapes slender, thickened weakly in the apical one-third, and quite short. Head with a finely sculptured surface and scattered but distinct hair pits. Promesonotum with an unbroken, shallowly convex profile. Metanotal groove deep and sharply margined on the dorsum but interrupted laterally. Basal face of propodeum making a continuous curve with declivity; propodeal spiracle small. Petiole node quite high but thick, with a domed dorsum and a short stout peduncle. Overall with quite abundant, fine, short erect hairs. Colour uniform throughout.

**Gyne.** TL 5.3–5.6, HL 0.75–0.80, HW 0.70, SL 0.45–0.55, EL 0.25, AL 1.60, SI 64–79, CI 88–93 (2 measured).

**Male.** TL 4.40–5.30, HL 0.60–0.70, HW 0.65–0.70, SL 0.25–0.35, EL 0.25–0.30, AL 1.50–2.00, SI 36–50, CI 100–117 (4 measured).

**Material examined.** 1 worker, Saloga Islands (Aswan), 2.v.2002, 24.05° N; 32.56° E; (*M. R. Sharaf*); 11 workers; Mafareq (South Sinai), 5.iii.1998; 28.42° N; 33.19° E. (*M. R. Sharaf*) (SHC).

**Previous records.** Helwan, 13.iii.1935 (Finzi, 1936).

### *Solenopsis occipitalis* Santschi

*Solenopsis occipitalis* Santschi 1911: 83. Syntype workers, TUNISIA: Ain-Draham and Le Kef (*Normand*) (NHMB) [examined].

**Worker.** TL 1.30–1.71, HL 0.41–0.48, HW 0.38–0.41, SL 0.26–0.29, PL 0.12–0.17, PW 0.12–0.15, PPL 0.09–0.11, PPW 0.14–0.15, EL 0.04–0.05, AL 0.44–0.49, SI 68–70, CI 85–95 (4 measured).

Head rectangular, a little longer than broad. Occipital margin straight with rounded posterior corners. Clypeal carinae divergent anteriorly and running to the margin where they project as a pair of well developed teeth. Eyes with a single facet situated at the anterior third of the head sides. Mandibles armed with four teeth. Mesosoma quite short, promesonotum convex. Metanotal groove distinct. Propodeum short, high and clearly convex, with the basal face making a continuous arc with the declivity. Petiole narrow and little higher than long. A smooth and shining species. Pilosity pale, fine and abundant. Body colour yellow. Masticatory margin of the mandibles and the first gastral tergite dark brown; antennae and legs yellow.

Santschi described the eyes of this species as consisting of three facets, but only a single, oval and relatively large facet was seen in all type workers. In addition he mentioned that the masticatory margin of the mandibles, the occiput, petiole and the first gastral tergite were dark brown; with the antennae and legs yellow. We find this species is unicolorous yellow except for the masticatory margin of the mandibles and the first gastral tergite which are pale brown. It is recorded for the first time from Egypt. A single worker was collected from Mafareq (South Sinai) but unfortunately it was damaged after being photographed.

**Material examined.** 1 worker, Mafareq (South Sinai), 5.III.1998; 28.42° N; 33.19° E. (*M. R. Sharaf*).

### *Solenopsis kochi* Finzi Stat.n.

(Plate 2, 3)

*Solenopsis orbula* ssp. *kochi* Finzi, 1936: 178, fig. 8. Syntype worker, EGYPT: Soloum (Salloum), 23.iii.1933, 31.31° N; 25.09° E (*C. Koch*); Syntype males, Helouan (Helwan, Cairo), 27.iii.1933, 29.51° N; 31.20° E (*W. Wittmer*); Syntype gynes, Marsa Matrouh, 21.iii.1933 (unknown collector); Ikingi Mariout, 18.iii.1935, 31.01° N; 29.48° E; Cairo, 12.ii.1933 (MCZC) [examined].

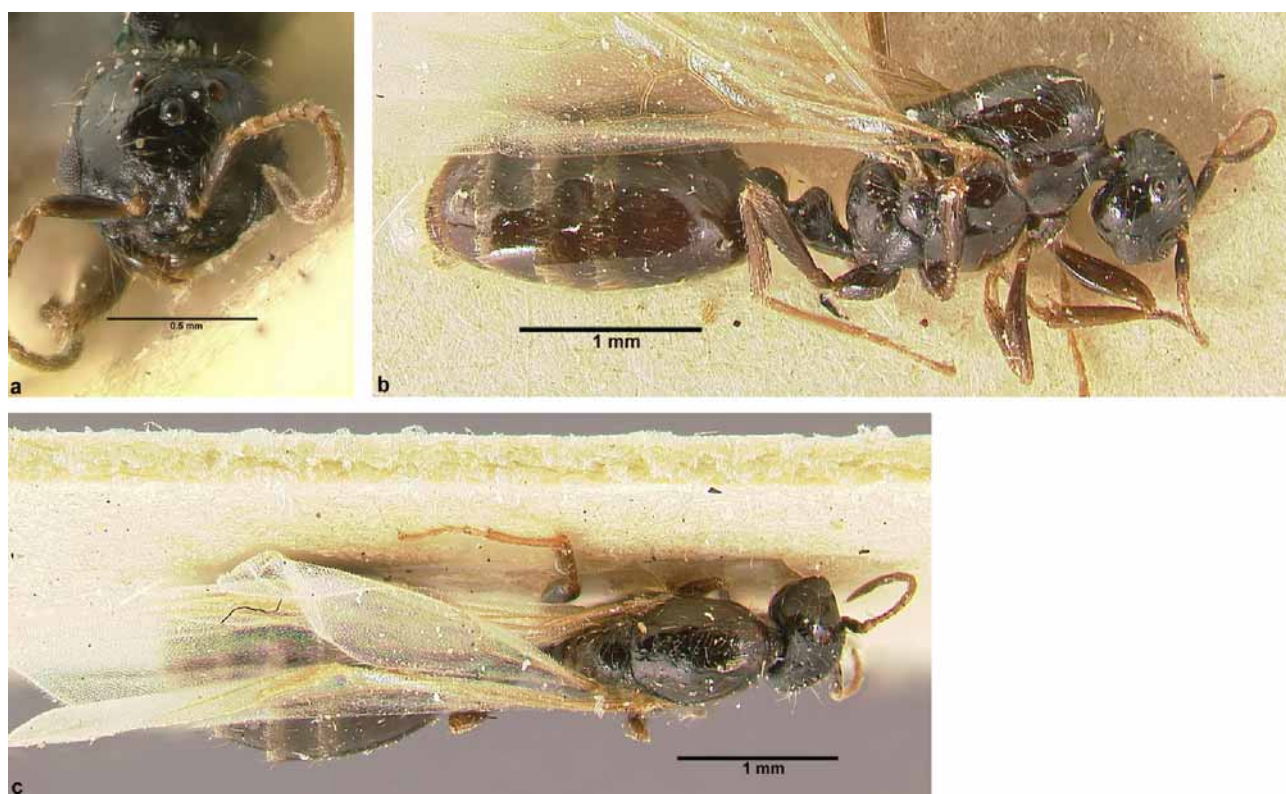
**Syntype worker** (Plate 2, Fig. d, e). TL 2.0, HL 0.48, HW 0.41, SL 0.30, EL 0.02, AL 0.54, SI 73, CI 85.

Head not much longer than broad with slightly convex sides. Occipital margin straight with rounded corners. Head dorsum smooth and shining. Mandibles unsculptured, smooth and shining with long yellow hairs and brown teeth. Anterior clypeal margin with the median portion narrowly concave and with a lateral pair of short, broad basal teeth. Eyes minute, with a single facet set laterally well below midline of head and about 0.04 times the head width. Mesosoma with a distinct metanotal groove. Basal face of propodeum not forming an angle with the declivity. All parts of the head and body with abundant, scattered, long yellow hairs. Colour uniformly yellow. The badly mounted type specimen does not show clearly the characters of the petiole and the postpetiole.

**Gyne** (Plate 2, Fig. f, g). TL 5.7, HL 0.76, HW 0.70, SL 0.54, EL 0.25, AL 1.47, SI 77, CI 92.

Head slightly longer than broad with its dorsum smooth and shining with abundant scattered yellow hair pits. Anterior clypeal margin weakly concave. First funicular segment longer than the three following funicular segments together. Eyes large and oval with 17 facets in the longest row. Ocelli oval, the anterior one distinctly larger than the posterior ones. Occipital margin straight with rounded corners. Metanotal groove distinct. Head, mandibular teeth, mesosoma, petiole and postpetiole dark brown; gaster and mandibles light brown; antennae and legs yellow. Whole body smooth and shining with scattered yellow hairs.

**Male** (Plate 3, Fig. a, b, c). TL 4.36, HL 0.63, HW 0.68, SL 0.26, EL 0.26, AL 1.54, SI 38, CI 108.



**PLATE 3.** *Solenopsis kochi* male, (a) head in full-face view, (b) body in profile, (c) dorsal view.

Head broader than long with strongly curved sides; above the eyes smooth and shiny; areas in front of eyes, between frontal lobes and between posterior ocelli distinctly rugulose. Mandibles narrow, armed with three teeth. Antennae 13-segmented, scapes long, about 3.7 times longer than broad; first funiculus segment relatively long, 1.6 times longer than broad and thick at its distal end; the following segments are clearly longer than broad, increasing in length toward the end of the funiculus. Dorsum with scattered, long yellow hairs. Mesosoma smooth and shining with scattered long yellow hairs. Petiolar node in profile rounded. Gastral tergites with a few scattered yellow hairs that are abundant at the posterior margins.

*Solenopsis kochi* was described from workers, gynes and males collected by C. Koch, W. Wittmer and an unknown person from different localities including Salloum, Heluan, Ikingi Mariut, Marsa Matrouh and Cairo



(Finzi, 1936) This species seems not to have been collected since the original description, as there are no specimens in the Egyptian Entomological collections. As stated in the original description, the head is not much longer than broad with slightly convex sides (Finzi, 1936). This is the most distinctive character for separating this species from *S. orbula*. After examining the type, MRS has been able to confirm Finzi's description. The lateral margin of the head in *S. kochi* clearly is convex while it is straight in *S. orbula*. Consequently, the head is broader in *S. kochi* (HW 0.41 versus HW 0.32 in *S. orbula*). In addition, it was found that *S. kochi* is consistently larger than *S. orbula* (TL 2.0 versus TL 1.4). Moreover, the scape length in *S. kochi* is somewhat longer than in *S. orbula* (SL 0.3 versus SL 0.2). For completeness the measurements of the holotype worker of *S. orbula* are TL 1.4, HL 0.40, HW 0.32, SL 0.20, EL 0.02, AL 0.40, SI 50, CI 80.

It is hoped that the results given here will dispel at least a little of the taxonomic fog surrounding the Egyptian *Solenopsis* and perhaps clear the way for more detailed systematic work on this genus. Our expectation is that careful exploration would yield many additional and interesting members of the genus *Solenopsis*. Many parts of Egypt remain poorly collected and likely ant habitats are distributed over the huge deserts and mountainous areas of the country.

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