

Further additions to the ant fauna (Hymenoptera: Formicidae) of Yemen

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Abstract. Ant species and genera collected in Yemen and new to the Arabian fauna include *Dolioponera* sp., *Pachycondyla flavopilosa*, *Probolomyrmex brevisrostris*, *Dicroaspis laevidens*, *Smithistruma emmae*, *Bothriomyrmex* sp., *Camponotus armenius* and *C. robechii*. First descriptions are given of *Tetramorium hirsutum* n. sp. and *Plagiolepis breviscapa* n. sp. Additional species for Yemen include the tramp species *Technomyrmex albipes* and *Tetramorium bicarinatum*.

Kurzfassung. Im Jemen wurden verschiedene Gattungen und Arten von Ameisen gesammelt, die neu für die arabische Fauna sind: *Dolioponera* sp., *Pachycondyla flavopilosa*, *Probolomyrmex brevisrostris*, *Dicroaspis laevidens*, *Smithistruma emmae*, *Bothriomyrmex* sp., *Camponotus armenius* und *C. robechii*. Zwei Arten, *Tetramorium hirsutum* n. sp. und *Plagiolepis breviscapa* n. sp. werden neu beschrieben. *Technomyrmex albipes* und *Tetramorium bicarinatum* wurden im Jemen zum ersten Mal als vom Menschen verschleppte Arten festgestellt.

Key words. Formicidae, ants, Yemen, Arabian Peninsula, Middle East.

Introduction

In the last published paper on the ants of Yemen (COLLINGWOOD & VAN HARTEN 2001) the number of ant species recorded from that country was estimated to be 148. Further material, mostly from Malaise and light traps, was sorted by the junior author (AvH) and queen, male and worker ants were sent for identification to the senior author (CAC). Only new additions to the Yemen fauna are discussed in this paper but reference is also made to a recent revision of the genus *Cardiocondyla* by SEIFERT (2003).

Material and methods

The types of the new species will be deposited in the Liverpool Museum, Liverpool, UK, and other specimens are provisionally retained in the senior author's collection.

Collection localities: Al Kadan: 15°16'N, 43°12'E; Al Kowd: 13°05'N, 45°22'E; Al Qatn: 15°49'N, 48°28'E; Ghail Ba Wazir: 14°46'N, 49°21'E; Khamis Bani Sa'd: 15°11'N, 43°25'E; Lahj: 13°04'N, 44°53'E; 12 km NW of Manakhah: 15°05'N, 43°42'E; Seyun: 15°56'N, 48°46'E; Ta'izz: 13°35'N, 44°02'E; Wadi Kadyut: 16°43'N, 51°20'E.

The following abbreviations are used in the descriptions: TL = total length; HL = head length; HW = head width; PL = petiole length; PW = petiole width; PPW = postpetiole width; ScL = scape length; CI = HW/HL x 100; SI = ScL/HW x 100; Measurements are all in mm.

Species accounts

Ponerinae

Dolioponera sp. (Fig. 1)

Material: Yemen: Seyun, worker & male, X-XI.2002, light trap, A. VAN HARTEN & G. BA SAHEH leg.

Worker: TL 3.25, HL 0.84, HW 0.65, PL 0.30, PW 0.29. Alitrunk length 0.83. Head mildly incavate; frontal lobes expanded laterally, separated by a distinct median furrow; clypeus projects as a thick lobe; antennal insertions close set, scape short, thick; funiculus segments 2 to 9 transverse, the apical club swollen. Alitrunk long with flat dorsum, petiole a thick subrectangular lobe. Colour shining yellow-brown, body clothed with fine long adherent hairs. – Male: TL 3.45, HW 0.68, ScL 0.27, PL 0.28, PW 0.29. Eyes large and prominent, placed forward. Colour shining black; legs, antennae and wings pale.

This apparently unique genus was described from a worker, as the species *Dolioponera fustigera* from west equatorial Africa, by BROWN (1974). It is not certain that the Yemen specimens belong to the same species.

Pachycondyla flavopilosa Weber, 1942

Type locality: Sudan.

Material: Yemen, Khamis Bani Sa'd, 5 workers, 7.VII.1999, in leaf litter, A. VAN HARTEN leg. This species is recognised by the pale brownish colour, profuse fine hairs over body, legs and scape, squamiform petiole node and the mandibles, which lack the posterolateral pit characteristic of the common *P. senaarensis* (Mayr).

Pachycondyla ambigua Weber, 1942

Type locality: Sudan.

Material: Yemen: Al Qatn, single worker, 29.V.2002, A. VAN HARTEN leg. This is a new record for Yemen; previously recorded once from Fayfa, Saudi Arabia.

Probolomyrmex brevisrostris Forel, 1910 (Fig. 2)

Type locality: Ethiopia.

Material: Yemen: Lahj, male, III-V.2002, in Malaise trap, A. VAN HARTEN & A. SALLAM leg.; 12 km NW of Manakhah, queen, 6.VII-21.VIII.2002, in Malaise trap, A. VAN HARTEN leg.

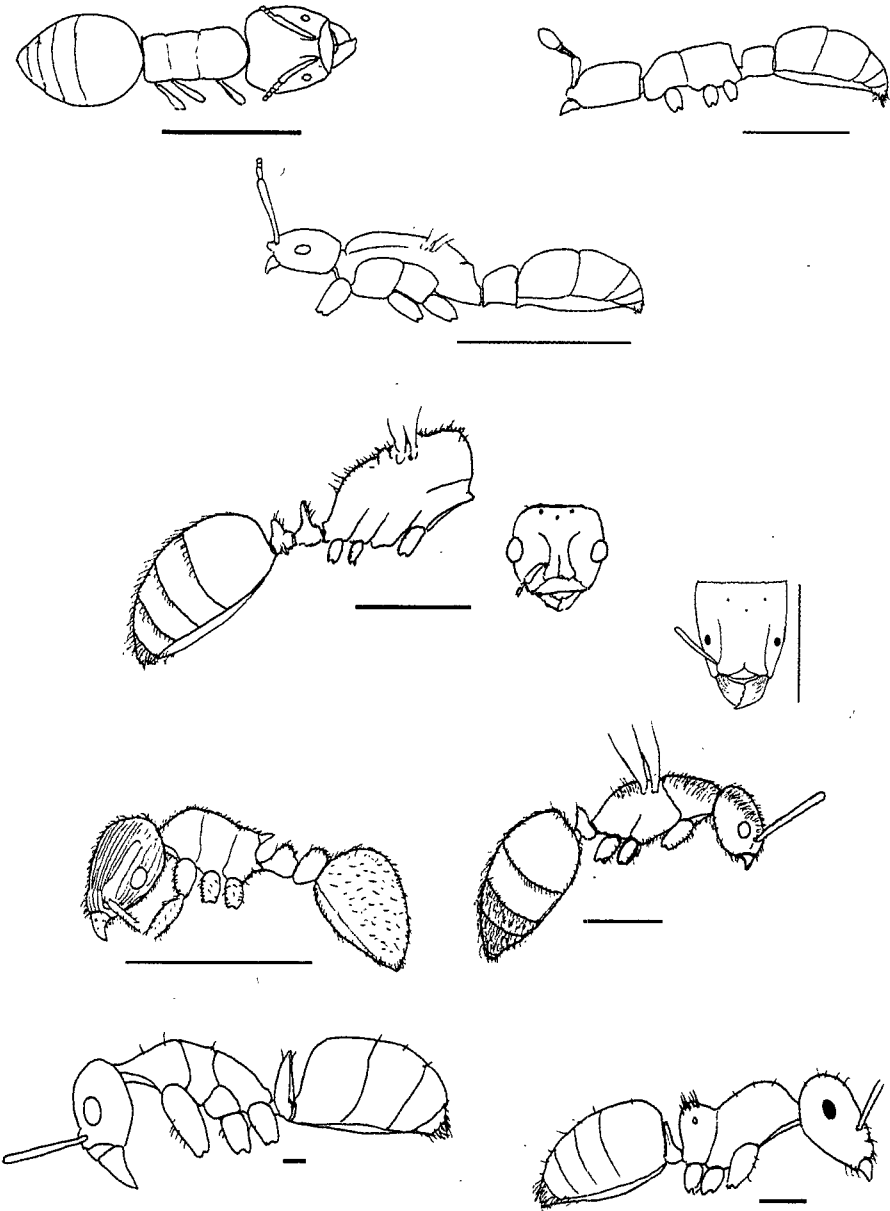
Description. Queen: TL 2.43, HL 0.46, HW 0.36, ScL 0.38, Eye L 0.18. Antenna 12 segmented. – Male: TL 2.45, HL 0.48, HW 0.39, ScL 0.39, Eye L 0.19. Antenna 13 segmented, apical segment L 0.16. Ocelli prominent, colour pale brown, wings pale. Clypeus and frons form a broad projecting shelf on which the antennae are situated.

Myrmicinae

Dicroaspis laevidens (Santschi, 1919) (Fig. 3)

Type locality: Zaire. Redescribed by BOLTON (1981).

Material: Yemen: Al Kowd, male, V.2001, in light trap, A. VAN HARTEN & S. AL HARURI leg.; Al Mahrah, Wadi Kadyut, queen, 23.VIII.2002, A. VAN HARTEN leg.



Figs. 1–8. 1. *Dolioponera* worker, profile view; 2. *Probolomyrmex brevisrostris* male, profile view; 3. *Dicroaspis laevidens*, a. male, profile of body, b. male, dorsal view of head, c. queen, dorsal view of head; 4. *Tetramorium hirsutum* worker, profile view; 5. *Bothriomyrmex* sp. queen, profile view; 6. *Camponotus armenius* worker, profile view; *Camponotus robecchii* worker, profile view; 8. *Plagiolepis breviscapa* worker, dorsal view. Scale bar: 1.0 mm (Fig. 3c: 0.5 mm).

Description. The male is black with yellow legs and antennae; the scape is very short, the first funiculus quadrate, the second twice as long as wide. TL 3.70. The postpetiole seen in profile has a small ventrolateral tooth-like projection, as in the queen. The head is almost square with wide spaced ocelli and small eyes. – Queen: TL 3.20, HL 0.71, HW 0.64, ScL 0.42, propodeal spine 0.32, eye L 0.21. The head is broadest above the eyes, almost rectangular.

***Smithistruma emmae* (Emery, 1890)**

Type locality: Antilles.

Material: Yemen: Ghail Ba Wazir, 3 workers, XII.2002, in Malaise trap, A. VAN HARTEN & M. HUBAISHAN leg.

This is a widely distributed tramp species (BOLTON 1983). It is distinguished from similar species in the *Strumigenys* group by the short head and short 4-segmented antennae. This is the first dacetine ant to be recorded from the Arabian Peninsula.

***Tetramorium bicarinatum* (Nylander, 1946)**

Material: Yemen: Al Kowd, 1 queen, V.2001, at light, A. VAN HARTEN & S. AL HARURI. This widely distributed and common tramp species is a first record for Yemen.

***Tetramorium hirsutum* n. sp. (Fig. 4)**

Holotype: worker, Lahj, IX.2000, in Malaise trap, A. VAN HARTEN & A. SALLAM leg. – Paratypes: queens and workers, same data as holotype.

Description. Worker: TL 2.36 (2.25-2.37), HL 0.61, HW 0.53, ScL 0.36, PW 0.24, PPW 0.27, Eye L 0.145. The mandibles are clear with scattered punctures. The clypeus is notched; the segmented antennae have wide, well-developed scrobes. In dorsal view the pronotum is sharply angled, the propodeum has short strong teeth, the nodes are slightly broader than long with rounded sides. In profile the alitrunk is a smoothly rounded dome. The head and alitrunk have longitudinal rugose sculpture. All surfaces including antennae and legs are clothed with dense fine short hairs. Colour light brown. – Queen: TL 2.53, HW 0.59. The scrobes are well developed, the general body sculpture is more reticulopunctate than that of the worker, pilosity dense as in the worker.

This small species differs from others in the same size range by the clypeus with its median notch, distinct antennal scrobes, excessive pilosity and the smoothly rounded alitrunk dorsum. This combination of characters seemingly excludes this species from any of the groups listed by BOLTON (1980) in the Afrotropical zoogeographic region.

Dolichoderinae

***Bothriomyrmex* sp. (Fig. 5)**

Material: Yemen: Ta'izz, single queen, IV.2002, in light trap, A. VAN HARTEN & A. R. AL YARIMI leg.

This is the first record of this genus from Arabia. The specimen is not the same as *B. breviceps* from Morocco and Tunisia and cannot as yet be identified. There are long hairs over and under the head and over alitrunk and gaster. The colour is light brown.

***Technomyrmex albipes* Smith, 1886**

Material: Yemen: Al Kadan, one worker, VI.2003, in light trap, A. VAN HARTEN & T. ABDUL HAQ leg. This is a first record for Yemen of this common tramp species.

Formicinae***Camponotus armenius* Forel, 1910 (Fig. 6)**

Type locality: South-East Africa.

Material: Yemen: 12 km NW of Manakhah, single worker, 6.VII-21.VIII.2002, in Malaise trap, A. VAN HARTEN leg.

Description. TL 18.8, HL 4.08, HW 4.02, ScL 5.20, Eye L 1.15. Alitrunk with a distinct promesonotal suture and a clear mesopropodeal break viewed in profile. The clypeal border is flat, not produced. The mandibles are large, about 0.25 head length. The head, body and legs are evenly medium brown with fine dense sculpture, but the first gaster tergite and lower petiole are yellowish. The petiole is high squamiform with a smoothly rounded dorsum.

***Camponotus robechii* Emery, 1892 (Fig. 7)**

Type locality: Somalia.

Material: Yemen: Ghail Ba Wazir, 7 workers, XII.2002-IV.2003, in Malaise trap, A. VAN HARTEN & M. HUBAISHAN leg.

Description. HL 1.30-1.34, HW 1.28-1.30, ScL 1.10-1.38, PW 0.40. The mandibles are striate with scattered pits; the front of the head and lateral clypeus with a few shallow punctures. The fronts of the head and alitrunk are finely reticulostriate. The pronotal dorsum, petiole node and gaster are more weakly sculptured. Stout hairs are scattered over the head, propodeum, petiole and gaster dorsum. The ventral part of the head is without hairs. The propodeum is high, rounding steeply into the oblique declivitous face. The general shape is as in *C. ilgii* Forel but the colour is lighter. The body size is more variable but generally larger and the head sculpture is weaker.

***Plagiolepis breviscapa* n. sp. (Fig. 8)**

Holotype: worker, Yemen: Lahj, 1.X-17.XII.2001, in Malaise trap, A. VAN HARTEN & A. SALLAM leg. – Paratypes: 7 workers, same data as holotype.

Description: TL 1.40, HL 0.47, HW 0.41, ScL 0.26, CI 87.2, SI 63.4, Eye L 0.09. The head, body and legs are completely pale. The antennal scape is unusually short for the genus. The funicular segments are quadrate.

Discussion

The advantage of Malaise traps and light traps operated over long periods is shown clearly in the number of unusual species new to the Arabian fauna that were collected. In addition to those named here, a number of specimens, especially males, not presently attributable to

species in *Leptothorax*, *Monomorium*, *Pheidole*, *Tapinoma* and *Tetramorium*, remain for further study if and when more material becomes available.

A number of small ants of the genus *Cardiocondyla* were sent by the senior author to Bernhard SEIFERT, Görlitz, Germany, and their descriptions and names have been incorporated in a monographic study of the genus (SEIFERT 2003). The following species described in that monograph were new to Yemen: *Cardiocondyla bicoronata* Seifert n. sp., *C. rugulosa* Seifert n. sp., *C. longiceps* Seifert, n. sp. and *C. fajumensis* Forel, 1913. *Cardiocondyla melena* Seifert n. sp. is probably a replacement name for *C. schuckardi* Forel, a south and west African species previously recorded for Arabia by COLLINGWOOD & AGOSTI (1996).

Taking into consideration these new *Cardiocondyla* species, the addition to the ant fauna known to occur in Yemen is 16 species, raising the total number to 164, whereas the total number of ant species recorded for the Arabian Peninsula is now at least 300.

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