Additions to the Ant Fauna of Yemen

(Hymenoptera, Formicidae)

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Abstract. An account is given of ant species recently collected in Yemen during 1998-2000, using several different trapping methods. Seven genera and 20 species are added to the Yemeni ant fauna. The genera Aenictus, Odontomachus, Oligomyrmex and Axinidris are recorded for the first time from the Arabian Peninsula. New species for the Arabian fauna include Odontomachus troglodytes Santschi, Leptothorax megalops Hamman & Klemm, Monomorium cryptobium (Santschi), Oligomyrmex arabicus sp.n., Camponotus mayri Forel, Camponotus spissinodis Forel and Paratrechina vividula NYLANDER.

Key words. Ants, Yemen, Arabia, faunistics, taxonomy, new species.

1. Introduction

The Arabian Peninsula is very rich in ant species. A total number of almost 300 species of ants have so far been recorded from Arabia (Collingwood 1985, Collingwood & Agosti 1996, Collingwood et. al. 1997), 129 of which were found in Yemen.

From 1998 to 2000 the junior author, assisted by Yemeni colleagues, operated Malaise-traps and light-traps at several localities in Yemen. Ants collected from those traps, as well as some others collected from litter samples and in pitfall-traps, were sent to the senior author for identification.

In the samples, several genera and species not before recorded from Yemen were found. These are listed here. In addition, a new species of Oligomyrmex was recognised and is described below. Records of other species are also included.

The types of the new species will be deposited in the Museum of Liverpool, Liverpool, UK; the other material is in the senior author's collection.

2. Records

Subfamily Aenictinae

Aenictus sp.

Worker, Khamis Bani Sa'd, 27.VII.199, in leaf litter in banana plantation, leg. van Harten; workers, Lahj, VI-VII.1998, X.1999, in Malaise-trap, leg. van Harten & Sallam.

This genus was represented by small pale yellow workers, which could not be identified to species. Length 2.8 mm, head length 0.6 mm, head with 0.5 mm, scape length 0.31 mm. The head is broadly emarginate; the thick scape has several suberect hairs; the clypeal border is crenulate. There are a few subdecumbent hairs on all body surfaces. The sting is short and horizontal. Colour uniformly shining yellow.

This is the first record of the subfamily and the genus from the Arabian Peninsula.

¹ Authors' addresses:

Subfamily Dorylinae

Dorylus affinis Shuckard 1840

Male and workers, Bani Husheish, 23.V.1999, leg. A. FARAH.

In Arabia only known from Yemen.

Subfamily Leptanillinae

Leptanilla islamica Baron Urbani 1977

Males, Lahj, VI-VII.1998, VIII.1998, X.1998, in Malaise-trap, leg. van Harten & Sallam; males, Ta'izz, VIII.1998, in light-trap, leg. van Harten & Awad.

Although males of this species occur frequently in traps, no colony was found in Yemen so far.

Leptanilla sp.

Males, Lahj, VI-VII.1998, VIII.1998, X.1998, in Malaise-trap, leg. van Нантел & Sallam; males, Ta'izz, V.1998, in light-trap, leg. van Нантел & Awad; males, Ta'izz, I.1999, in light-trap, leg. van Нантел & Мануоив.

This species was reported before by Collingwood & Agosti (1996). As no workers have been found until now, the species remains undescribed.

Yavnella sp.

Males, Lahj, VI-VII.1998, VIII.1998, X.1998, in Malaise-trap, leg. van Harten & Sallam; males, Ta'izz, IV.1998, in light-trap, leg. van Harten & Mahyoub.

Also reported by Collingwood & Agosti (1996).

Subfamily Ponerinae

Anochetus traegaordhi Mayr 1904

Workers, Khamis Bani Sa'd, 23.VI.1999, 28.III.2000, in leaf litter in banana plantation, leg. VAN HARTEN.

Recorded for the first time from Yemen; known from Saudi Arabia.

Odontomachus troglodytes Santchi, 1914

Worker, Khamis Bani Sa'd, 9.VI.1999, in leaf litter, leg. VAN HARTEN.

The single worker collected represents the first record for Arabia and Yemen of this common Afrotropical species.

Cryptopone arabica Collingwood & Agosti 1996

Queens, Khamis Bani Sa'd, 27.VII.1999, 31.VIII.1999, 28.III.2000, in leaf litter, leg. VAN HARTEN.

Several winged queens were taken of this interesting species, until now only known from Yemen.

Pachycondyla senaarensis (MAYR 1862)

Males and queens, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Haruri; males and queens, Khamis Bani Sa'd, 28.III.2000, leg. van Harten; workers, Wadi al Barakani, 18.XI.1999, leg. Sallam; workers, Socotra, Delicia, 5.X.1998, leg. van Harten.

This is by far the commonest Ponerine species in Arabia.

Platythyrea modesta EMERY 1899

Males, Lahj, VIII.1998, in Malaise-trap, leg. van Harten & Sallam; males, Ta'izz, IV.1998, V.1998, VIII.1999, in light-trap, leg. van Harten & Awad.

In the Arabian Peninsula this species is known from Saudia Arabia, Oman and Yemen.

Hypoponera eduardi (Forel 1894)

Queen, Sana'a, VIII-IX.1998, in Malaise-trap, leg. van Harten.

This is the first record for this Mediterranean species from Yemen.

Hypoponera ragusai (EMERY 1894)

Queen, Al Kowd, VI 2000, in light-trap, leg. van Harten & Al Haruri, queen, Mayfa'ah, V 1998, in light-trap, leg. van Harten & Afif.

This species is here redorded from Yemen for the first time.

Subfamily Cerapachyinae

Cerapachys longitarsus (MAYR 1878)

Males and queens, Al Kadan, II-III.1998, in Malaise-trap, leg. van Harten & Naser; males and queens, Sana'a, X.1998, in pitfall-traps, leg. van Harten.

The presence of queens permitted the identification of this species. Before, when only males had been found, the species was reported as *Cerapachys* sp. (Collingwood & Agosti 1996).

Subfamily Pseudomyrmecinae

Tetraponeura bifoveolata Mayr 1895

Males and queens, Al Kowd, VII.1999, XII.1999, in light-trap, leg. van Harten & Al Haruri.

This species is widespread in Arabia. A colour-drawing of this species is given in Collingwood & van Harten (1994).

Subfamily Myrmicinae

Cardiocondyla emeryi Forel 1881

Workers, Al Mahrah, Al Ghaida, 14.XI.1997, leg. S. Ba Angood; workers, Al Kadan, Ii-III.1998, in Malaise-trap, leg. van Harten & Naser; workers, Lahj, VI-VII.1998, in Malaise-trap, leg. van Harten & Sallam; queen and workers, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awao; workers, Socotra, Hadibo, 3-5.X.1998, leg. van Harten.

Cardiocondyla nuda (MAYR 1866)

Workers, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awad.

Cardiocondyla schuckardi Forel 1891

Worker, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awad.

Cardiocondyla wroughtonii (Forel 1890)

Worker, Sana'a, X.1998, in pitfall trap, leg. van Harten.

Cardiocondyla yemene Collingwood & Agosti 1996

Queens, Lahj, X.1998, in Malaise-trap, leg. van Harten & Sallam.

This species until now has only been found in Yemen (Sana'a and Wadi Surdud).

Melissotarsus emeryi Forel 1907

Males and queens, Al Kowd, VII.1999, in light-trap, leg. VAN HARTEN & AL HARURI.

Crematogaster affabilis FOREL 1907

Queen, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Haruri; workers, Lahj, VIII.1998, X.1998, V.1999, VI.1999, in Malaise-trap, leg. van Harten & Sallam; queen, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awad.

Crematogaster antaris Forel 1894

Workers, N. of Al Hudaydah, 6.XII.1998, attending mealybugs, leg. van Harten.

Crematogaster delagoensis Forell 1894

Workers, Al Mahrah, Dabin, 11-13.XI.1997, leg. S. Ba Angoop; queens, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awab.

Crematogaster flaviventris Santchi 1910

Workers, Lahj, VI-VII.1998, in Malaise-trap, leg. van Harten & Sallam; workers, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awad.

Crematogaster inermis MAYR

Worker, Lahj, VI-VII.1998, in Malaise-trap, leg. van Harten & Sallam.

This arboreal species is now reported for the first time from Yemen.

Crematogaster luctans Forel 1907

Worker, Khamis Bani Sa'd, 11.X.1999, in leaf litter, leg. van Harten.

This is the first record from Yemen of this mainly African species, which is also known from Saudi Arabia.

Leptothorax angulatus MAYR 1862

Workers, N. of Al Hudaydah, 6.XII.1998, attending mealybugs, leg. van Harten; queens and workers, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Haruri.

Leptothorax megalops Hamman & KLEMM

Male and queens, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Haruri; queens, Ta'izz, X.1999, in light-trap, leg. van Harten & Awab.

This is a small, large-eyed yellow species, first recorded and described from Sudan. Several queens (Fig. 1) and a male were collected and represent the first record for Arabia

Messor aralocaspius (Ruzsky 1902)

Workers, Sana'a, X.1998, in pitfall-traps, leg. van Harten; workers, near Sana'a, III-IV.1998, in pitfall-traps, leg. van Harten.

Monomorium abeillei André 1881

Workers, Lahj, IV.1999, in Malaise-trap, leg. van Harten & Sallam; Sana'a, 3.XII.1998, leg. van Harten.

Monomorium cryptobium (Santschi 1921)

Workers, Khamis Bani Sa'd, 27.VII.1999, in leaf-litter, leg. VAN HARTEN.

This tiny yellow species with minute single-facetted eyes is a first record for Arabia and Yemen. It is a tropical forest leaf litter species.

Monomorium destructor (JERDON, 1851)

Workers, Al Kadan, II-III.1998, in Malaise-trap, leg. van Harten & Naser; workers, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Haruri; workers, Lahj, X.1998, V.1999, in Malaise-trap, leg. van Harten & Sallam.

Monomorium fayfaense Collingwood & Agosti 1996

Worker, Lahj, VI.1999, in Malaise-trap, leg. van Harten & Sallam.

Monomorium gallagheri Collingwood & Agosti 1996

Worker, Al Mahrah, Dabin, 11-13.XI.1997, leg. S. Ba Angood.

This is the first record of M. gallagheri for Yemen. The species is also known from Oman and Saudi Arabia.

Monomorium hanaqe Collingwood & Agosti 1996

Worker, Lahj, VIII.1998, in Malaise-trap, leg. van Harten & Sallam.

Monomorium mahyoubi Collingwood & Agosti 1996

Worker, Lahj, VI-VII.1998, in Malaise-trap, leg. van Harten & Sallam.

Monomorium mayri Forel 1902

Queen and workers, Socotra, Wadi Daneghan, 4.X.1998, Delicia, 5.X.1998, Hadibo, 3-6.X.1998, leg. van Harten.

Monomorium niloticum EMERY 1881

Workers, near Sana'a, III-IV.1998, in pitfall-traps, leg. van Harten; queens and workers, Ta'izz, V.1998, in light-trap, leg. van Harten & Awab.

Monomorium nitidiventre EMERY 1893

Worker, Lahj, IV.1999, in Malaise-trap, leg. van Harten & Sallam.

Monomorium phoenicium Santchi 1927

Worker, Ta'izz, I.1999, in light-trap, leg. van Harten & Mahyoub.

First record of this species for Yemen.

Monomorium wahibiense Collingwood & Agosti 1996

Worker, Al Mahrah, Al Ghaida, 12-14.XI.1997, leg. S. Ba Angood; workers, Lahj, VI-VII.1998, in Malaise-trap, leg. van Harten & Sallam; workers, near Sana'a, III-IV.1998, in pitfall-traps, leg. van Harten.

This species, described from Oman and the United Arab Emirates, is here recorded for the first time from Yemen.

Monomorium yemene Collingwood & Agosti 1996

Worker, Al Mahrah, Dabin, 11-13.XI.1997, leg. S. Ba Angood; workers, Lahj, VI-VII.1998, in Malaise-trap, leg. van Harten & Sallam.

Pheidole megacephala (FABRICIUS 1793)

Workers, near Sana'a, III-IV.1998, in pitfall-traps, leg. van Harten.

Pheidole minuscula BERNARD

Workers, Khamis Bani Sa'd, 23.VI.1999, 27.VII.1999, in leaf litter, leg. van Harten; Lahj, IV.1999, in Malaise-trap, leg. van Harten & Sallam; queens, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awad.

This is the first record for Yemen for the small narrow-headed species.

Pheidole rugaticeps EMERY 1877

Workers, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Haruri; workers, Khamis Bani Sa'd, 9.VI.1999, 28.III.2000, in leaf litter, leg. van Harten.

Pheidole sculpturata MAYR 1866

Workers, Lahj, X.1998, IV.1999, in Malaise-trap, leg. van Harten & Sallam; queen and workers, near Sana'a, III-IV.1998, in pitfall-traps, leg. van Harten.

Pheidole sinaitica MAYR 1862

Queens, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Haruri; workers, near Sana'a, under stone, 18.II.1999; queen and workers, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awad.

Pheidole teneriffana Forel 1893

Queens, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awad.

Pheidole spp.

Many Pheidole males occurred in the Malaise- and light-traps, but at present could not be identified to species.

Tetramorium jizane Collingwood 1985

Workers, Lahj, VIII.1998, in Malaise-trap, leg. van Harten & Sallam; queen and workers, Ta'izz, V.1998, in light-trap, leg. van Harten & Awad.

Tetramorium khyarum Bolton 1980

Worker, Lahj, X.1998, in Malaise-trap, leg. van Harten & Sallam.

Tetramorium sericeiventre EMERY 1877

Workers, Khamis Bani Sa'd, 27.VII.1999, in leaf litter, leg. van Harten; queens and workers, Lahj, VIII.1998, X.1998, in Malaisetrap, leg. van Harten & Sallam; males, queens and workers, Sana'a, III-IV.1998, in pitfall-traps, leg. van Harten; males and queens, Ta'izz, IV.1998, V.1998, in light-trap, leg. van Harten & Awad.

Tetramorium yemene Collingwood & Agosti 1996

Workers, Khamis Bani Sa'd, 23.VI.1999, leg. van Harten; males and queens, Lahj, VIII.1998, in Malaise-trap, leg. van Harten & Sallam.

Oligomyrmex arabicus sp. n. (Figs. 2, 3, 4)

Workers, Al Kowd, VIII.1999, in light-trap, leg. van Harten & AL Haruri. Holotype: major worker; paratypes: 7 minor workers;

Major worker: Total length 2.53 mm, head length 0.75 mm, head width 0.36 mm, scape length 0.63 mm. Eyes minute.

Head long subrectangular with prominent occipital outgrowths at each corner, appearing as blunt teeth in lateral view (Fig. 2). Propodeum with short blunt teeth. Promesonotal dorsal outline simply rounded; metanotal furrow deep with a rounded upright prominence (Fig. 3). Petiole and postpetiole broader than long in dorsal view, petiole broadly triangular in profile. All surfaces with short raised hairs. Head longitudinally striate becoming cross striate at occiput; rest of body almost without sculpture, shining. Colour pale yellowish brown.

Minor worker: Total length 1.3 mm, head length 0.42 mm, head width 0.30 mm, scape length 0.25 mm. Sides of head smoothly rounded, occiput broadly emarginate, almost straight. Propodeum obliquely angled, not dentate, distinctly lower than the promesonotum (Fig. 4). Metanotal furrow deep, nodes simple. Head with sparse decumbent pubescence. Dorsal hairs restricted to clypeal border and gaster apex. Colour uniformly shining yellow.

This is the first record for the genus in Arabia and Yemen. The small workers do not resemble examples from adjacent African territories.

Subfamily Dolichoderinae

Axinidris sp. (Figs. 5, 6)

Worker, Ta'izz, 8.X.1991, leg. van Harten.

A single worker of the relatively unknown genus *Axinidris* Weber 1941 was collected at Ta'izz. This genus with only a few species has hitherto only been recorded from Sahelian Africa.

Total length 1.8 mm, head width 0.44 mm, scape length 0.36 mm. The head (Fig. 6) is rounded heart shaped with a deep occipital emargination. The clypeal border is emarginate. The propodeum has two small tooth-like suberect processi. The alitrunk dorsum is rather flat but with distinct promesonotal and metanotal sutures. The propodeal

spiracle is situated near the dorsal border. The colour is evenly brown with the legs and antennae slightly paler.

Linepithema humile (Mayr 1868)

Worker, Sana'a, 24.XI.1998, attending wax scales, leg. VAN HARTEN.

A single worker of the 'Argentine ant' was taken in company with *Technomyrmex bruneipes* workers attending wax scales. This is the first record in Yemen for this invasive species, previously known in Arabia from gardens at Al Ain in the United Arab Emirates (Collingwood et al. 1997).

Iridomyrmex anceps (Roger 1863)

Male, Mayfa'ah, V.1998, in light-trap, leg. van Harten & AFIF.

This is the first record for Yemen. It is a well known species in the Indian Subcontinent and is well established in town gardens at Al Ain in the United Arab Emirates (Collingwood et al. 1997).

Tapinoma melanocephalum (Fabricius 1793)

Workers, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Haruri; workers, Lahj, IV.1999, in Malaise-trap, leg. van Harten & Sallam; Mayfa'ah, V.1998, in light-trap, leg. van Harten & Afif.

Technomyrmex bruneipes Forel 1895

Workers, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Haruri; workers, Lahj, IV.1999, in Malaise-trap, leg. van Harten & Sallam; Sana'a, 24.XI.1998, attending wax scales, leg. van Harten; workers, near Sana'a, III-IV.1998, in pitfall-traps, leg. van Harten; workers, Ta'izz, V.1998, in light-trap, leg. van Harten & Awad.

Subfamily Formicinae

Anopiolepis longitarsis Collingwood & Agosti 1996

Queens, Al Kowd, VII.1999, in light-trap, leg. van Harten & AL Haruri; male and queens, Ta'izz, V.1998, in light-trap, leg. van Harten & Awab.

Camponotus aegyptiacus EMERY 1915

Males and queens, Lahj, X.1998, V.1999, in Malaise-trap, leg. van Harten & Sallam; worker, Sana'a, 24.VII.1999, leg. J. Breithaupt; workers, near Sana'a, 3.XII.1998, leg. van Harten.

Colour drawings of the male, the queen and workers of this species are given in Collingwood & van Harten, 1994.

Camponotus atlantis Forel 1890

Males, Al Kowd, VII.1999, in light-trap, leg. van Harten & Al Harden; workers, Lahj, V.1999, in Malaise-trap, leg. van Harten & Sallam; males, near Sana'a, III-IV.1998, in pitfall-traps, leg. van Harten; males, queen and workers, Ta'izz, V.1998, in light-trap, leg. van Harten & Awad.

Camponotus foraminosus Forel 1879

Queen, Al Kowd, VIII.1999, in light-trap, leg. van Harten & Al Haruri.

Camponotus flavomarginatus MAYR 1862

Workers, Lahj, V.1999, in Malaise-trap, leg. van Harten & Sallam; queen and workers, Mayfa'ah, V.1998, in light-trap, leg. van Harten & Afir

Camponotus hova Forel 1891

Males, queens and workers, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awab.

Camponotus jizani Collingwood 1985

Workers, Sana'a, IV.1998, in pitfall-traps, leg. van Harten.

Camponotus sericeus (Fabricius 1798)

Workers, Al Mahrah, Al Ghaida, 12-14.XI.1997, leg. S. Ba Angood; males and workers, Lahj, VI-VII.1998, X.1998, in Malaise-trap, leg. van Harten & Sallam; workers, Sana'a, III-IV.1998, X.1998, in pitfall-traps, leg. van Harten; males and queens, Ta'izz, IV-V.1998, in light-trap, leg. van Harten & Awad.

Camponotus spissinodis FOREL 1909

Worker, Sana'a, VIII.1991, leg. van Harten.

This single worker represents a new record for Arabia and Yemen for this North African species.

Cataglyphis lividus (André 1881)

Workers, N. of Al Hudaydah, 6.XII.1998, attending mealybugs, leg. van Harten.

Cataglyphis niger (André 1881)

Workers, near Sana'a, III-IV.1998, X.1998, in pitfall-traps, leg. van Harten; workers, Ta'izz, V.1998, in light-trap, leg. van Harten & Awad.

Lepisiota canescens (EMERY 1897)

Worker, Sana'a, VI.1999, in light-trap, leg. van Harten; workers, near Sana'a, III-IV.1998, X.1998, in pitfall-traps, leg. van Harten.

Lepisiota obtusa (EMERY, 1901)

Worker, near Sana'a, 18.II.1999, under stone, leg. van Harten.

Lepisiota opaciventris (Finzi 1936)

Queens and workers, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awad.

Lepisiota spinisquama (Kuznetsov-Ugamsky 1929)

Workers, Socotra, Wadi Daneghan, 4.X.1998, Delicia, 5.X.1998, leg. VAN HARTEN.

Paratrechina flavipes (Smith 1874)

Workers, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awab; queen and workers, Al Kowd, II.2000, in light-trap, leg. van Harten & AL Haruri.

This is the first record for Yemen for this invasive species from the Orient. It had been already recorded from Oman and the United Arab Emirates.

Paratrechina longicornis (LATREILLE 1802)

Workers, Lahj, X.1998, in Malaise-trap, leg. van Harten & Sallam; males and queens, Ta'izz, V.1998, in light-trap, leg. van Harten & Awad.

Paratrechina vividula (NYLANDER)

Workers, Khamis Bani Sa'd, 28.III.2000, in leaf litter, leg. van Harten.

A cosmopolitan species, recorded from Arabia and Yemen for the first time.

Plagiolepis exigua Forel 1894

Workers, Lahj, VI-VII.1998, X.1998, in Malaise-trap, leg. van Harten & Sallam.

Plagiolepis maura Santschi 1920

Male, Ta'izz, IV.1998, in light-trap, leg. van Harten & Awap; male, Mayfa'ah, V.1998, in light-trap, leg. van Harten & AFIF.

Polyrachis lacteipennis Smith, 1838

Workers, Ibb, Wadi Duri, 19.XI.1999, leg. Sallam.

3. Discussion

In total 78 species are listed, more than half the number of species so far recorded from Yemen. Seven genera (Aenictus, Anochetus, Odontomachus, Oligomyrmex, Axinidris, Linepithema and Iridomyrmex) were recorded for the first time from Yemen, 4 of which are new for the whole Arabian Pensinsula. A total of 20 species could be added to the list of Yemeni ant species, 8 of which are also new for Arabia. The number of ant species known from Yemen has now risen to 149.

It is clear that many ant species can be captured with the help of Malaise- and light-traps. In the present case, 57 species (= 73% of the total number of species) were collected in a Malaise- and/or light trap. However, it is also clear that the leaf litter will contain numerous additional ant species, as 7 of the 19 new records were discovered when searching through leaf litter.

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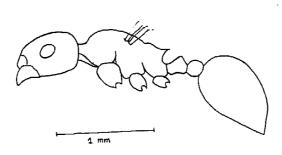
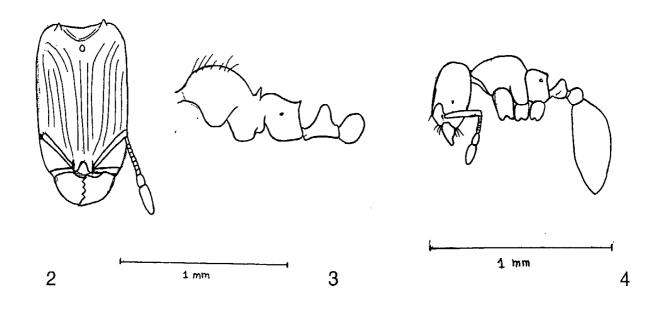
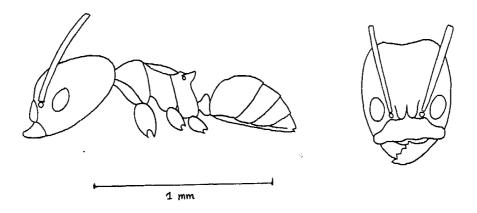


Fig. 1 Leptothorax megalops Hamman & KLEMM, queen: profile.



Figs 2-4 Oligomyrmex arabicus sp.n., major worker: 2 head; 3 alitrunk in profile; minor worker: 4 profile.



Figs 5-6 Axinidris sp., worker: 5 profile; 6 head.