Order Hymenoptera, family Formicidae

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INTRODUCTION

All ants are social insects, the various species living in societies of a dozen to many thousands of worker ants, brood and one or more egg-laying queens. Ants play an important role in the ecosystem in many ways. Their dominance in semi-arid habitats has a regulatory effect on other insects. In addition, they are a source of food for lizards, small predatory mammals, insectivorous birds and arthropods including spiders, ant-lions and beetles.
So far 12629 species of ants have been described worldwide (Antbase, 2011). Most of them occur in the hotter climates. From the Arabian Peninsula and adjacent islands at least 300 species of ants have been recorded (Collingwood, 1985; Collingwood & Agosti, 1996; Collingwood, Tigar & Agosti, 1997; Collingwood & van Harten, 1994, 2001, 2005; Collingwood et al., 2004; Sharaf, 2009; Aldawood & Sharaf, 2009; Aldawood et al., 2010; Aldawood et al., 2011 (in press); Sharaf & Aldawood, 2011a (in press), 2011b (in press)).
Until now only 44 species have been reported from the UAE, which were listed by van Harten (2005).

MATERIALS AND METHODS

This paper deals with ant specimens collected by Barbara Tigar during 1993 and 1995, by the UAE Insect Project during 2004–2010, and by the senior author during two collecting trips to the UAE in 1995 and 2005.
The number of specimens in each sample was not noted and is not indicated in the text. The majority of specimens remains in alcohol, only a few specimens of each species were mounted. The alcohol material will all be deposited in the collection of the Liverpool Museum, Liverpool, UK, and the mounted specimens will be divided between the collection of the Liverpool Museum, the UAE Invertebrate Collection and the collection of D. Agosti. The holotype of *Leptothorax liviae* nov. spec. was deposited in the Naturhistorisches Museum Basel, Switzerland (NHMB), the holotype and some paratypes of *Cataglyphis laylae* nov. spec. in the Musée d'Histoire Naturelle in Geneva, Switzerland (MHNG), the holotype of *Lepisiota elegantissima* nov. spec. as well as some paratypes of *Cataglyphis laylae* nov. spec. in the Nationaal Natuurhistorisch Museum (Naturalis), Leiden, Netherlands (RMNH), and paratypes of *Lepisiota elegantissima* nov. spec. and *Cataglyphis laylae* nov. spec in the Liverpool Museum, Liverpool, UK (NML).
The authors considered that the ants will constitute a very important group for the assessment of biodiversity richness of areas in the UAE to be protected in future. For that reason it was decided to include the maximum possible of illustrations of the species listed. As none of the authors has the facilities to make good photographs, we required the assistance of *www.antweb.org*, a website with a wealth of information about ants. AntWeb Project Leader, Dr. Brian L. Fisher, California Academy of Science, San Francisco, USA, gave us permission to use illustrations from that website. It is hoped that with this information local naturalists will be able to start working on this important insect group. For species that are not illustrated, images might be found at *antweb.org*.

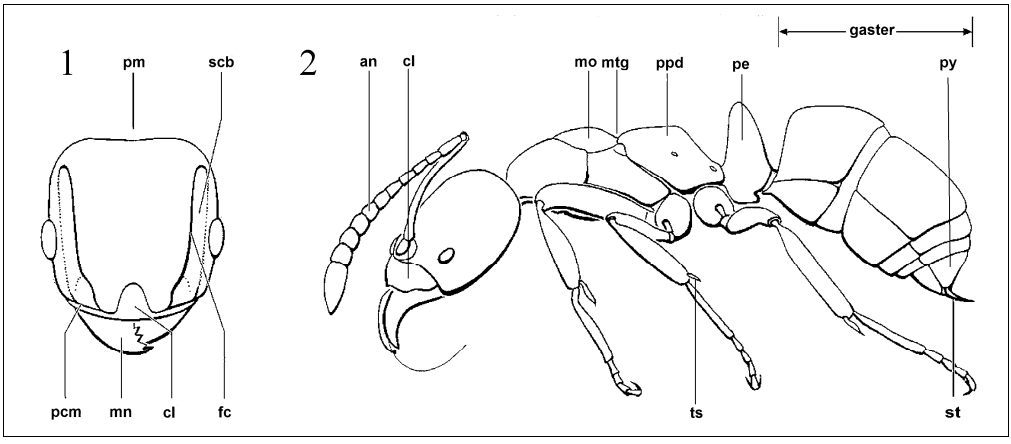
Keys to the subfamilies and genera of UAE Formicidae are included, but as the knowledge about the ant fauna is clearly not yet complete, we refrained from including keys to the species, as this might lead to confusion. It is recommended that in the near future a complete key to subfamilies, genera and species of ants of the whole Arabian Peninsula (comprising Kuwait, Saudi Arabia, Bahrain, Qatar, United Arab Emirates, Oman and Yemen) to be elaborated, joining all known information about ants in those countries.
All publications on UAE ants are available in digital form at antbase.org.
Abbreviations used: AvH = leg. A. van Harten; CAC = leg. C.A. Collingwood; LT = light trap; MT = Malaise trap; WT = water traps.

BRIEF OUTLINE OF ANT MORPHOLOGY

Figures 1 and 2 show the lateral and dorsal view of a worker of the subfamily Ponerinae, indicating the principal morphological features used in ant taxonomy. Ants are distinguished from other wasp-like Hymenoptera by the stalk-like constriction or peduncle between the mid-body and gaster, which may consist either of a single segment, the petiole, or of two segments, the second then called the postpetiole. The head varies enormously in shape. The antennae are composed of 4 to 13 segments and usually the male has one more than the female or worker. Winged female and worker ants have elbowed antennae. Compound eyes and three ocelli are well developed in the males, but in the females, and especially the workers, the eyes may be reduced or vestigial. A large and well developed sting is present in the females and workers of the subfamilies Ponerinae, Dorylinae, Pseudomyrmicinae and most Myrmicinae, but is vestigial or absent in the remainder.
Ants are highly polymorphic. The normal phases or castes are male, queen and worker. The male is the least variable of the three castes. The sense-organs, wings and genitalia are highly developed but the mandibles are often weak. The head is smaller and rounder than in the females and workers of the same species, and the antennae longer and more slender. Ocelli well developed. Gaster ending with distinct protruding genitalia.
The queen is the female characterized by her large stature and well developed reproductive organs. She is usually larger than the male and worker of the same species. The antennae and legs are often shorter and stouter than in the male, the mandibles are well developed and the gaster large. The worker is a female characterized by the absence of wings, the reduced thorax and small gaster. The eyes are small and the ocelli either absent or minute. Workers are usually variable in size and sometimes in colour or structure. When they are dimorphic without intermediance, the larger type with large head and mandible is termed a soldier (Imms, 1973). Workers of all ant species are always wingless (apterous); queens of most species have wings which are discarded after mating. The males in nearly all Arabian species are winged (alate).

BRIEF OUTLINE OF ANT BIOLOGY

The ‘truly’ social insects, or eusocial insects as they are sometimes called, like ants, can be distinguished by the following traits: a. individuals of the same species cooperate in caring for the young, b. there is a reproductive division of labour, with more or less sterile individuals working on behalf of fecund individuals, and c. there is an overlap of at least two generations in life stages capable of contributing to colony labour, so that offspring assist parents during some period of their life. The ants contain a greater number of known genera and species than all other eusocial groups (termites, bees and wasps) together. The diversity of their ecological and social adaptations is truly remarkable. Food specialization is extreme. The majority of ant



Figures 1–2. Morphological features of ant workers used in the keys (modified from Collingwood et al., 2004). Abbreviations: an = antenna; cl = clypeus; fc = frontal carina; mn = mandible; mo = mesonotum; mtg = metanotal groove; pcm = posterior clypeal margin; pe = petiole; pm = posterior margin of head; ppd = propodeum; py = pygidium; scb = antennal scrobe; st = sting; ts = tibial spur.

groups exhibits a highly variable degree in prey choice, while a few have come to subsist primarily on seeds. Still others rely entirely on the 'honeydew' secretions of homopterous insects reared in their nests or on special mutualistic fungi cultured on insect dung or vegetation. All members of the subfamily Cerapachyinae prey exclusively on other ants (Wilson, 1971).

The life cycle of an ant colony can be conveniently divided into three parts. The founding stage begins with the nuptial flight. The virgin queen departs from the nest in which she was reared. She meets one or more males and is inseminated. As soon as the queen is inseminated, she shed her membranous wings. The males die soon after, while the queen finds a suitable nest in the soil or plant material and constructs a first nest cell. Here she rears the first brood of workers, drawing on her own tissue reserves to produce eggs and feed the growing larvae. Soon after reaching the adult stage, the workers take over the task of foraging, nest enlargement, and brood care, so that the queen may confine herself to egg laying. After a period that ranges from a single season to several years, the colony begins to produce new queens and males (Hölldobler &Wilson, 1990).

SYSTEMATIC ACCOUNT

Key to the subfamilies of ants of the United Arab Emirates (workers)

1 Eyes absent (Plate 1, Fig. 3). Minute ants; length generally less than 2 mm and head width less than 0.25 mm in all castes ..... **Leptanillinae**
– Eyes present (Plate 2, Fig. 5) **2**
2 Peduncle with a single node or scale (Plate 3, Fig. 4) **4**
– Peduncle with two distinct segments, the petiole and the postpetiole (Plate 4, Fig. 6) **3**
3 Clypeus projects back between the frontal ridges (Plate 5, Fig. 7); tarsal claws simple. Ocelli absent in worker caste. In most species eyes small to medium sized ... **Myrmicinae**

– Clypeus does not project back between frontal ridges but bends vertically downwards in front of the head. Eyes large, at least one third head length (Plate 6, Fig. 8) .... **Pseudomyrmecinae**

4 Gaster with a projecting sting. First and second gaster tergites with a distinct constriction between them (Plate 7, Fig. 9) **5**

– Gaster without a projecting sting. First and second gaster tergites not separated by a distinct constriction (Plate 8, Fig. 10) **6**

5 Pygidium (last visible gaster tergite) rounded without short projecting teeth or spines. Antennal insertions concealed by frontal laminae in dorsal view (Plate 9, Fig. 11) .... **Ponerinae**

– Pygidium flattened, armed with very short spines or peg-like teeth. Antennal insertions exposed (Plate 10, Fig. 12) ..... **Cerapachyinae**

6 Gaster with a fringe of hairs on the ultimate gastral segment (acidopore) (Plate 11) .... **Formicinae**

– Gaster without a fringe of hairs on the ultimate gastral segment ..... **Dolichoderinae**

Subfamily **Ponerinae** Lepeletier, 1836

Key to the genera of Ponerinae occurring in the UAE (workers)

1 Basal portion of mandible with a distinct dorsolateral pit ..... ***Panchycondyla*** F. Smith

– Basal portion of mandible without a dorsolateral pit ..... ***Hypoponera*** Santschi

Hypoponera eduardi (Forel, 1894) Plates 12–14

Specimens examined: Near al-Hayer, 30.i.2005, in leaf litter, AvH.

Distribution: Mediterranean species, also known from Saudi Arabia and Yemen. New to the UAE.

Hypoponera punctatissima (Roger, 1859)

Specimens examined: Sharjah Desert Park, 29.iii–6.iv.2005, LT, AvH.

Distribution: Cosmopolitan species. Recorded from Yemen and Oman. New to the UAE.

Hypoponera ragusai (Emery, 1894)

Specimens examined: Near al-Hayer, 14.ii.2005, in leaf litter, AvH.

Distribution: Mediterranean area, central Sahara, East Africa, Saudi Arabia. New to the UAE.

Pachycondyla sennaarensis (Mayr, 1862) Plates 15–17, 35, 53

Specimens examined: Sharjah, 1.iii.2005, CAC. Sharjah Desert Park, 22.ii–16.iii.2005, LT, AvH.

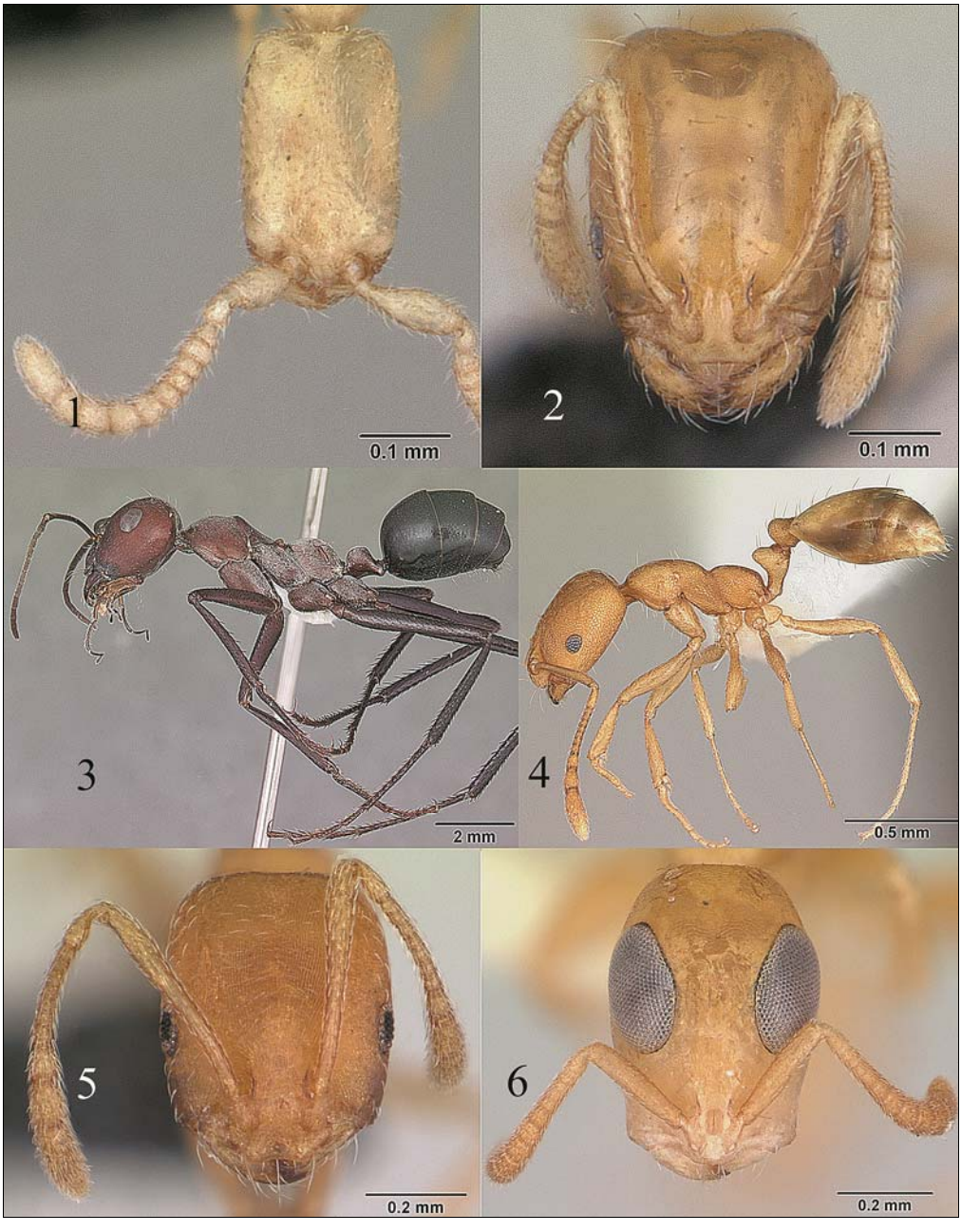
Remarks: In the UAE this species is known as the 'Samsun ant'. Its painful sting is supposed in some cases to provoke allergic reactions that lead to the death of some persons (Dip, 1992; Dip et al., 1992; Rizk et al., 1998).

Distribution: Widely distributed throughout sub-Saharan Africa and the Arabian Peninsula.

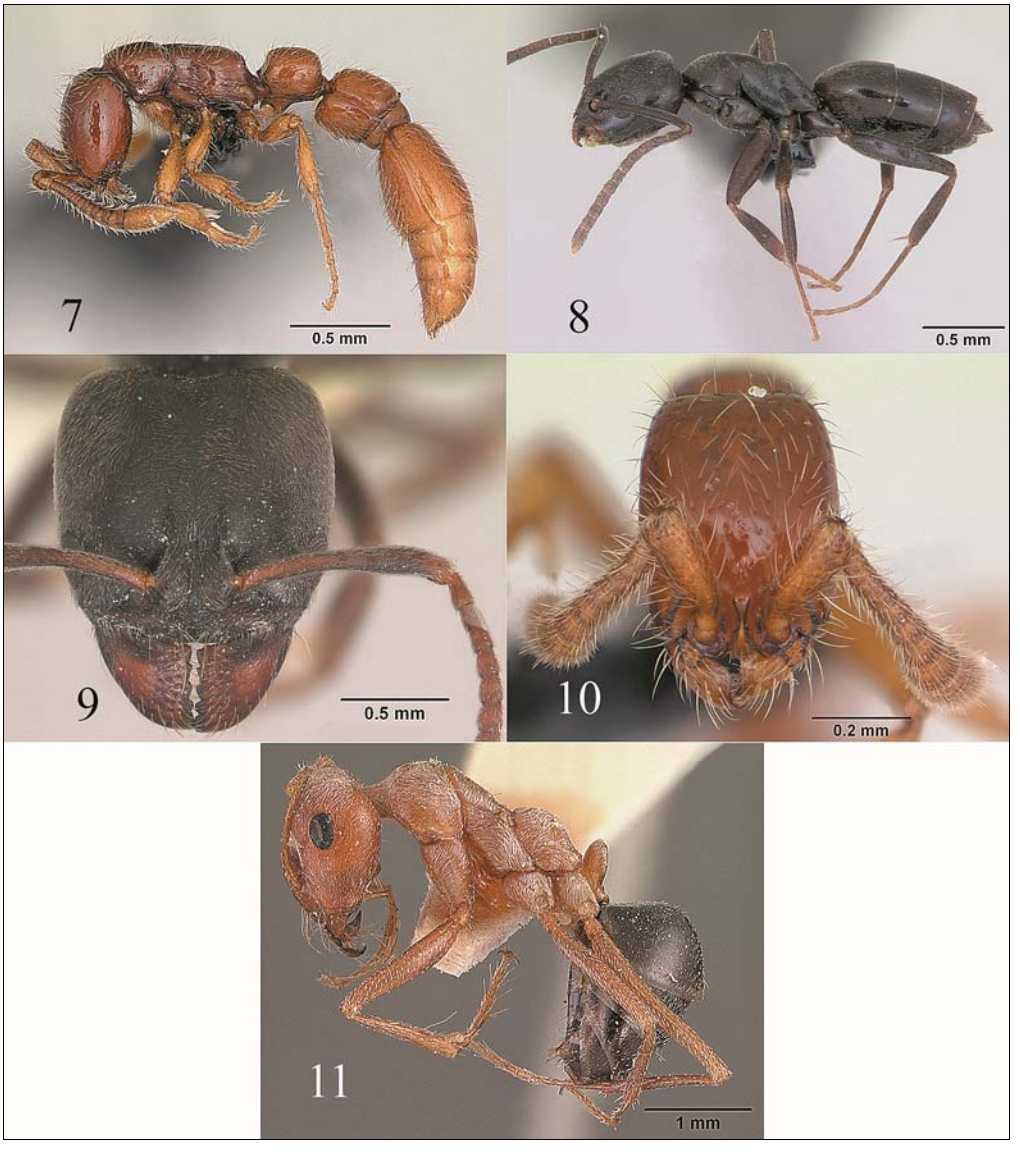
Subfamily **Cerapachyinae** Forel, 1893

Cerapachys longitarsus (Mayr, 1879)

Specimens examined: Fujairah, males, 28.ii–1.iv.2006, LT, AvH.



Plates 1–6. 1: *Leptanilla* spec., head; 2: *Monomorium* spec., head; 3: *Cataglyphis* spec., habitus, in lateral view; 4: *Monomorium* spec., habitus in lateral view; 5: *Monomorium* spec., head; 6: *Tetraponera* spec., head. (Photographs by A. Nobile, © www.antweb.org)

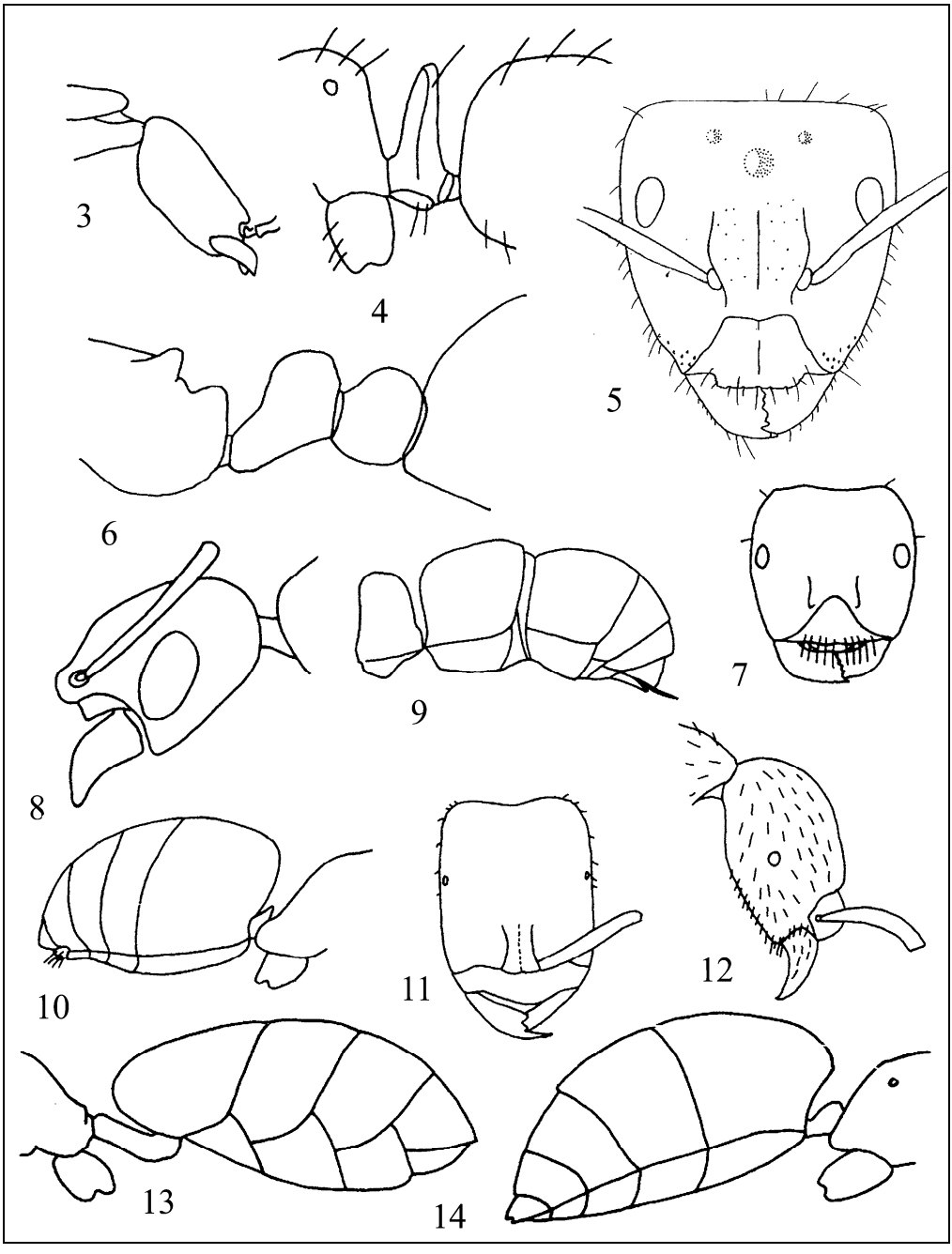


Plates 7–11. 7: *Cerapachys* spec, habitus in lateral view; 8: *Tapinoma* spec., habitus in lateral view; 9: Ponerinae, head; 10: *Cerapachys* spec., head; 11: *Cataglyphis* spec., habitus in lateral view; arrow showing acidopore. (Photographs 7–8, 10–11 by A. Nobile, 9 by M. Esposito, © www.antweb.org)

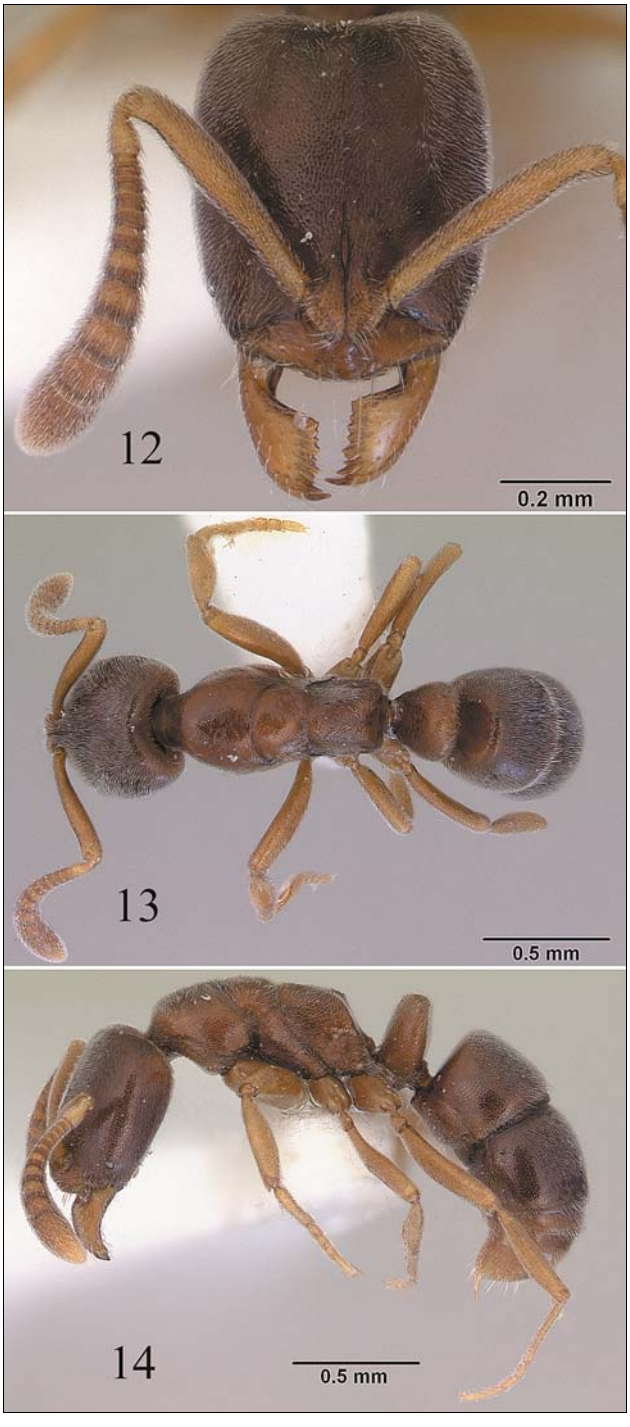
Distribution: Wide-ranging species recorded from North Australia, Philippines, India, North- and East Africa. In the Arabian Peninsula known from Saudi Arabia and Yemen. New to the UAE.

Cerapachys wroughtoni (Forel, 1910) Plates 18–20

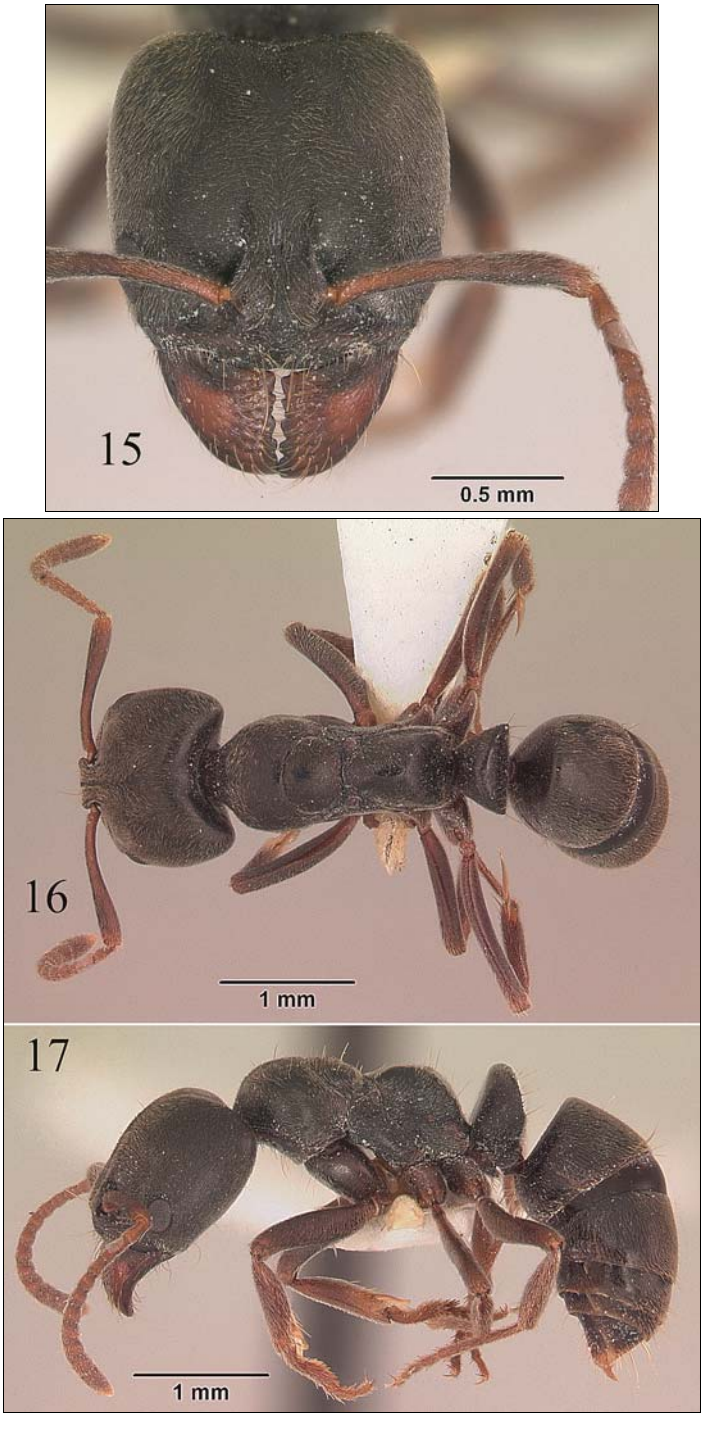
Specimens examined: Near al-Hayer, 14.ii.2005, in leaf litter, AvH.



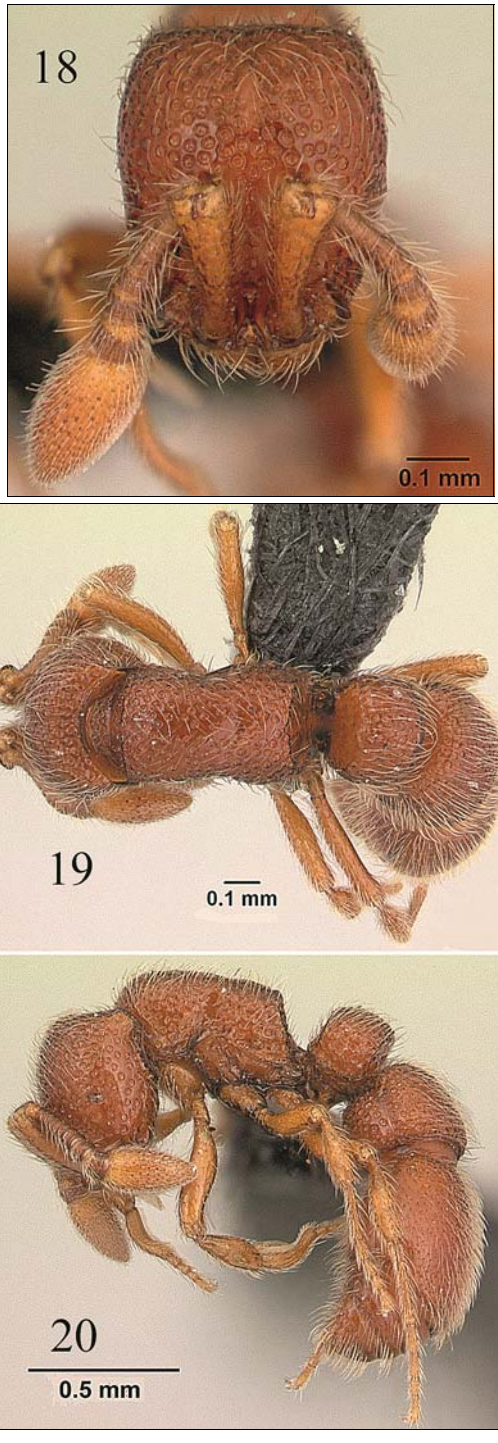
Figures 3–14. 3: *Leptanilla* spec., head; 4: *Pachycondyla* spec., peduncle; 5: *Camponotus* spec., head; 6: *Tetramorium* spec, peduncle; 7: *Messor* spec., head in dorsal view; 8: *Tetraponera* spec., head; 9: Ponerinae, peduncle and gaster; 10: *Plagiolepis* spec., peduncle and gaster; 11: Ponerinae, head in dorsal view; 12: *Cerapachys* spec., head; 13: *Tapinoma* spec., peduncle and gaster; 14: *Technomyrmex* spec., peduncle and gaster.



Plates 12–14. *Hypoponera eduardi* (Forel). (Photographs by A. Nobile, © www.antweb.org)



Plates 15–17. *Pachycondyla sennaarensis* (Mayr). (Photographs by M. Esposito, © www.antweb.org)



Plates 18–20. *Cerapachys wroughtoni* (Forel). (Photographs by E. Prado, © www.antweb.org)

Distribution: Known from southern Africa. New to the UAE.

Cerapachys spec.
Specimens examined: Sharjah Desert Park, 29.iii–6.iv.2005, LT, AvH.

Subfamily **Leptanillinae** Emery, 1910

Leptanilla islamica Baroni Urbani, 1977 Figure 15
Specimens examined: Fujairah, 16–24.ii.2005; 5.iii–6.iv.2005, LT, AvH. Sharjah Desert Park, 21–29.iii.2005, LT, AvH.
Distribution: Known only from Yemen. New to the UAE.

Subfamily **Dolichoderinae** Forel, 1878

Key to the genera of Dolichoderinae occurring in the UAE (workers)

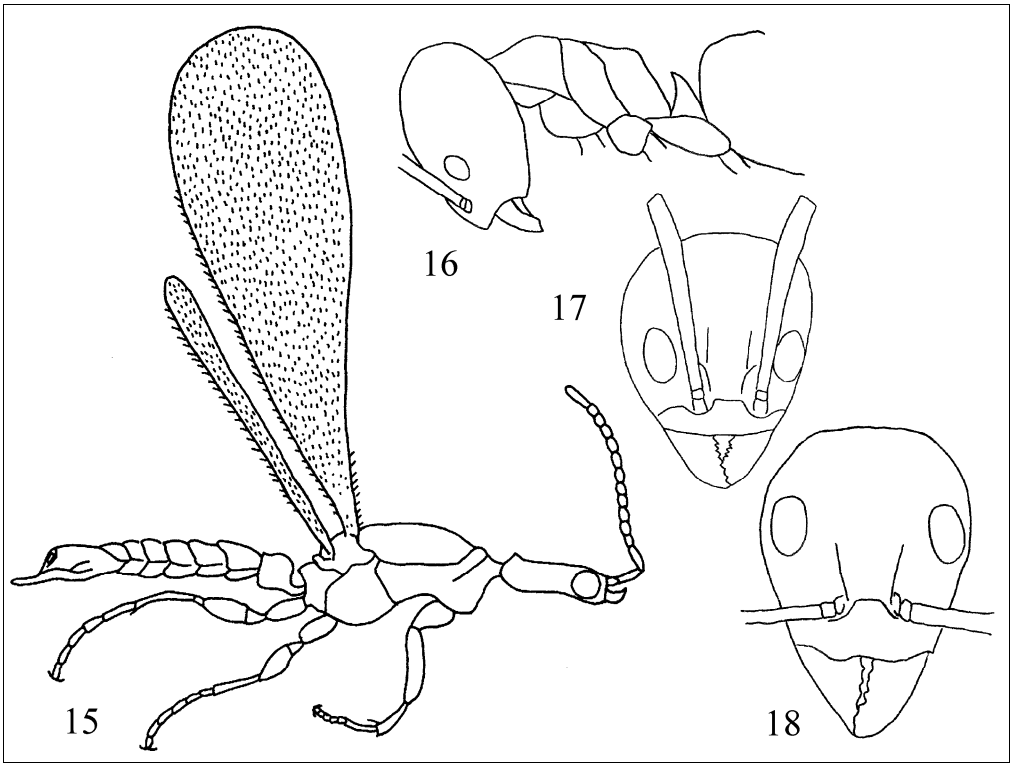
1 Petiole without a scale and overhung by first gastral tergite **2**
– Petiole with a scale, not completely overhung by the first gastral segment **3**
2 In dorsal view four gastral segments visible (Fig. 13), anal orifices situated ventrally .... ***Tapinoma*** Foerster
– In dorsal view five gastral segments visible (Fig. 14), anal orifices situated apically .... ***Technomyrmex*** Mayr
3 Head about as broad as long, petiole sloped forward and partially overhung by first gastral segment (Fig. 16) ..... ***Bothriomyrmex*** Forel
– Petiole an upright scale, not overhung by first gastral segment **4**
4 Eyes set forward of middle line of head (Fig. 17) ..... ***Linepithema*** Mayr
– Eyes set above middle line of head (Fig. 18) ..... ***Iridomyrmex*** Mayr

Bothriomyrmex spec.
Specimens examined: Sharjah Desert Park, 21–29.iii.2005, LT, AvH; 29.iii–6.iv.2005, LT, AvH.
Remarks: The second record of this genus from the Arabian Peninsula, after being found in Yemen (Collingwood & van Harten, 2005).

Iridomyrmex anceps (Roger, 1863) Plates 21–23
Specimens examined: Sharjah Desert Park, iii.2005, CAC. Fujairah, 5.iii–6.iv.2005, LT, AvH.
Distribution: Well-known species from the Indian subcontinent. In the Arabian Peninsula first recorded from the UAE (al-Ain) by Collingwood, Tigar & Agosti (1997); also known from Yemen.

Linepithema humile (Mayr, 1868) Plates 24–26
Specimens examined: Al-Ain, 13.iii.2005, CAC.
Distribution: The 'Argentine ant' came originally from Argentina, but this invasive species now has a global distribution, occurring especially in Mediterranean-type ecosystems. In the Arabian Peninsula first recorded from the UAE (al-Ain) by Collingwood, Tigar & Agosti (1997). Also reported from Yemen.

Tapinoma melanocephalum (Fabricius, 1793) Plates 27–29, 36, 54
Specimens examined: Al-Ain, 12.iii.2005, CAC. Al-Ajban, 9.xi–7.12.2005, LT & MT, AvH. Sharjah Desert Park, 5–6.x.2004, AvH.

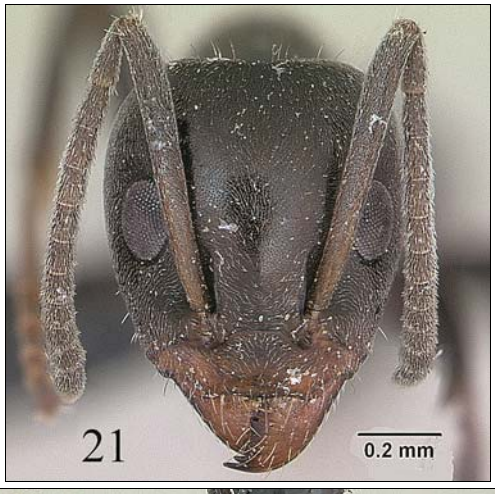


Figures 15–18. 15: *Leptanilla islamica* Baroni Urbani, male; 16: *Bothriomyrmex* spec., head, mid-body and peduncle; 17: *Linepithema* spec., head in dorsal view; 18: *Iridomyrmex* spec., head in dorsal view.

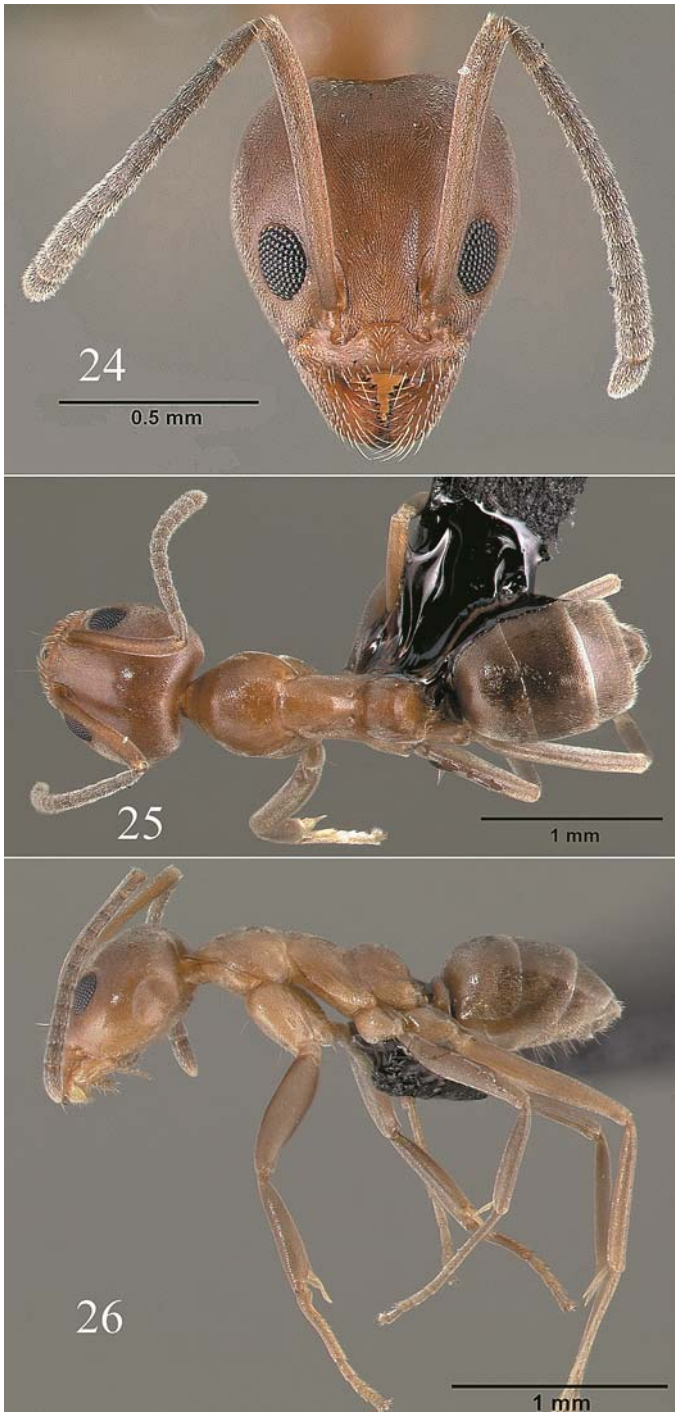
Distribution: Another invasive species with a world-wide distribution (Wetterer, 2009a). This species feeds upon many household foods, it seems to show a preference for sweets, having been observed feeding on sugar, cakes, and syrups (Smith, 1965). Outdoors the workers are scavengers, consume dead insects and tend sap-sucking insects, collecting honeydew.
Recorded from the UAE (al-Ain) by Collingwood, Tigar & Agosti (1997). Also known from Yemen.

Tapinoma simrothi Krausse, 1911 Plates 30–31
Specimens examined: Al-Ain, 13.iii.2005, CAC.
Distribution: Known from the Meditteranean area. Recorded from the UAE (al-Ain and Abu Dhabi) by Collingwood, Tigar & Agosti (1997). Also known from Saudi Arabia, Yemen, Oman and Kuwait. In Saudi Arabia, it is distinctly widely distributed in the central region (Riyadh and areas around).

Technomyrmex bruneipes Forel, 1895
Specimens examined: Al-Ajban, 9.xi–7.12.2005, LT & MT, AvH.
Remarks: Bolton (2007) considers *T. bruneipes* a synonym of *T. albipes* (F. Smith, 1861), a tramp species widespread in Asia and Africa.



Plates 21–23. *Iridomyrmex anceps* (Roger). (Photographs A. Nobile, © www.antweb.org)



Plates 24–26. *Linepithema humile* (Mayr). (Photographs by A. Nobile, © www.antweb.org)

Plates 27–29. *Tapinoma melanocephalum* (Fabricius). (Photographs by A. Nobile, © www.antweb.org)

Plate 30–31. *Tapinoma simrothi* Krausse, from Abu Dhabi. (Photographs by D. Agosti)

Distribution: Described from India. In the Arabian Peninsula known from Yemen. New to the UAE.

Subfamily **Pseudomyrmicinae** M.R. Smith, 1952

Tetraponera ambigua (Emery, 1895)
Tetraponera bifoveolata (Mayr, 1895) (synonym, see: Ward, 2006).
Specimens examined: Sharjah Desert Park, 15.iii.2005, CAC.
Distribution: Widespread over the whole of Africa. In the Arabian Peninsula recorded as *T. bifoveolata* from Saudi Arabia and Yemen. New to the UAE.

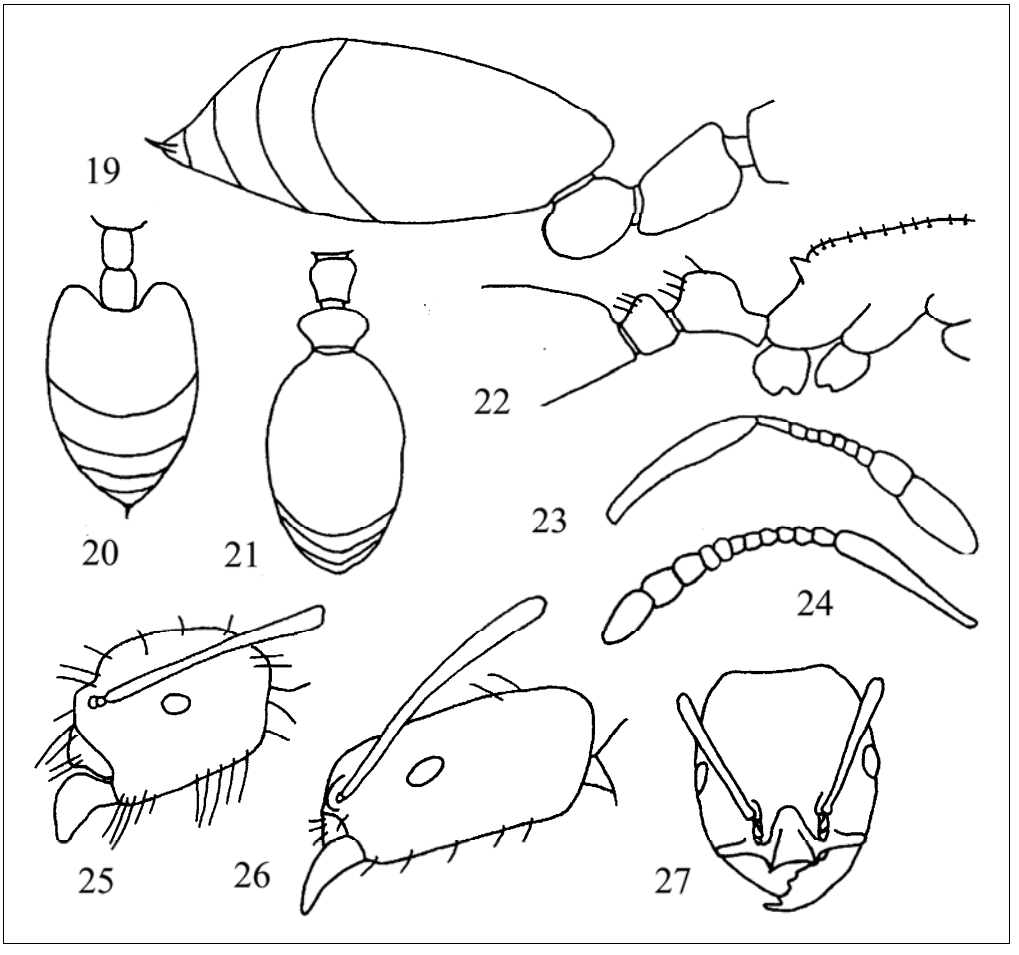
Subfamily **Myrmicinae** Lepeletier, 1835

Key to the genera of Myrmicinae occurring in the UAE (workers)

1 Postpetiole attached mediodorsally to the first gaster tergite (Fig. 19); gaster heart-shaped from above (Fig. 20) ..... ***Crematogaster*** Mayr
– Postpetiole attached medioventrally to the gaster (Fig. 22) which is pear-shaped in dorsal view (Fig. 21) **2**
2 Antennae 10-segmented, the two apical segments forming a distinct club (Fig. 23) . ... ***Solenopsis*** Westwood
– Antennae 11- or 12-segmented with a three segmented club (Fig. 24) or with a less well defined club of five thickened segment **3**
3 Mandibles, in full-face view, broadly rounded or flat (Fig. 25). Workers polymorphic with head width increasing allometrically with increasing body size ..... ***Messor*** Forel
– Mandibles, in full-face view, triangular (Fig. 26). Workers monomorphic or dimorphic . **4**
4 Clypeus longitudinal bicarinate (Fig. 27). Propodeum without spines or teeth (Fig. 28) .... ***Monomorium*** Mayr
– Clypeus with median portion rounded or flat (Fig. 29). Propodeum bituberculate or with distinct spines or teeth (Fig. 30) **5**
5 Clypeus raised into a ridge in front of antennal insertions (Fig. 32) ..... ***Tetramorium*** Mayr
– Clypeus not raised into a ridge in front of antennal insertions **6**
6 Dimorphic species; major workers have greatly enlarged incavate heads broad, three-toothed mandibles (Fig. 31). Minor workers have narrow heads with long multidentate mandibles (Fig. 33) ..... ***Pheidole*** Westwood
– Monomorphic species; all workers in a colony of more or less even size and shape, having mandibles of five teeth. **7**
7 Postpetiole enlarged, in most species wider than long in dorsal view and cordiform (Fig. 34). Mid body entirely without dorsal hairs ..... ***Cardiocondyla*** Emery
– Postpetiole not conspicuously enlarged (Fig. 35). Body hairs present over whole dorsum . ..... ***Leptothorax*** Mayr

Cardiocondyla bicoronata Seifert, 2003
Remarks: Described by Seifert (2003) from Jordan, also recorded from Israel, Yemen and the UAE (Al-Ain zoo). No recent records.

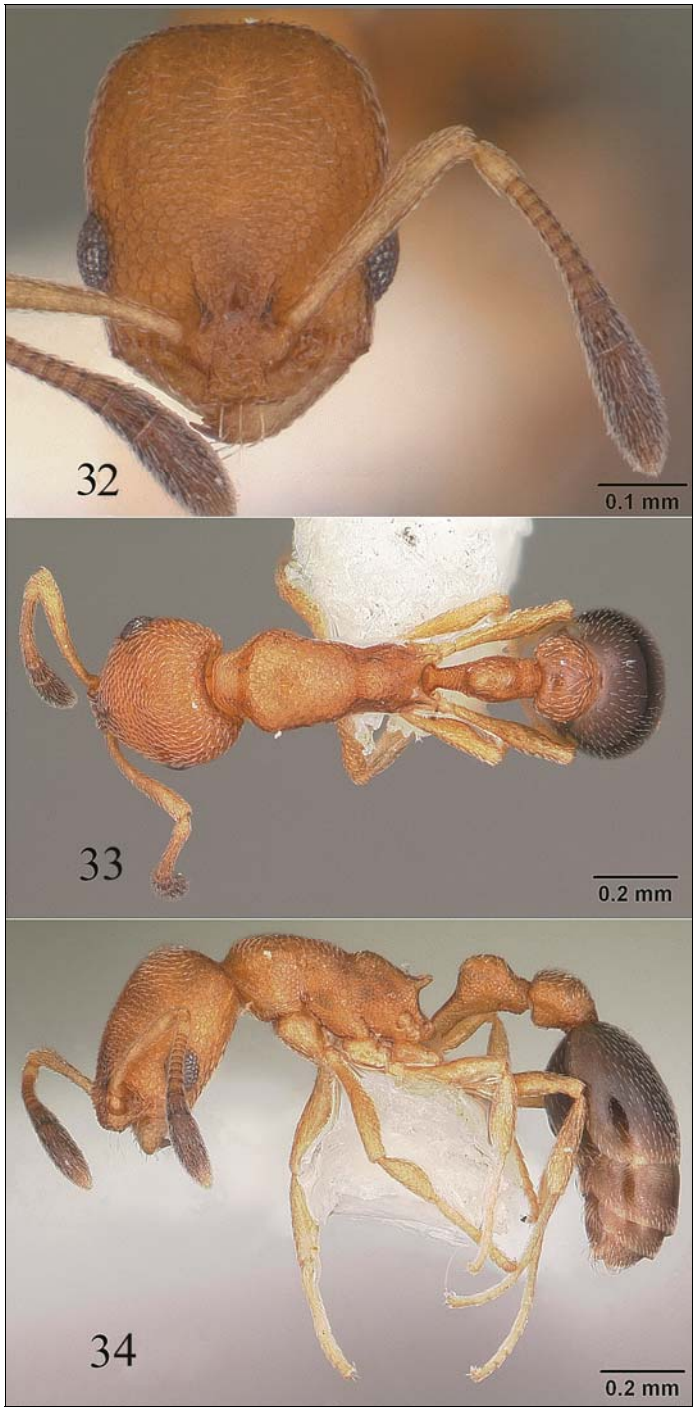
Cardiocondyla emeryi Forel, 1881 Plates 32–34, 37, 55
Specimens examined: Al-Aslab, 19.ix.2005, at light, AvH. 7 km S of al-Jazirat al-Hamra, 16.xi.2004, AvH. Sharjah Desert Park, 6.x.2004, at light, AvH.
Distribution: Widely spread species, reported from southern Palaearctic, Ethiopian, Oriental, Nearctic and Neotropical regions. Recorded from the UAE (Ruwais) by Collingwood, Tigar & Agosti (1997). Also known from Yemen and Oman.



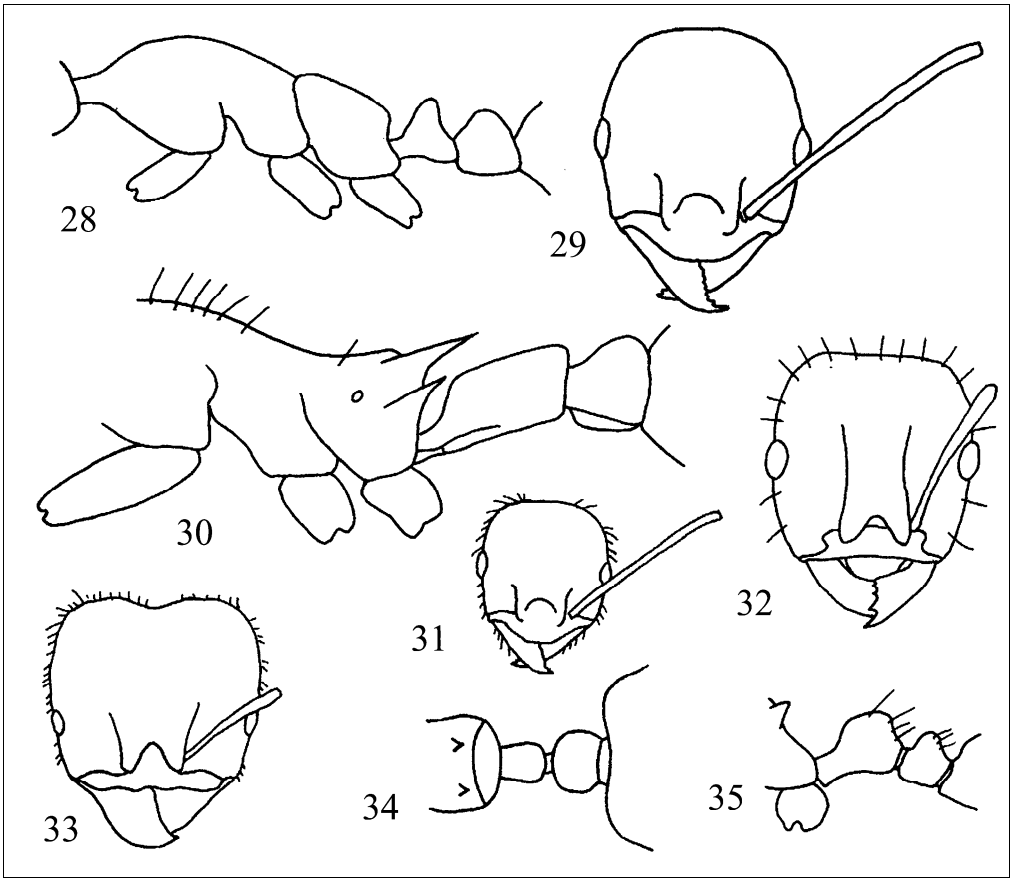
Figures 19–27. 19: *Crematogaster* spec., peduncle and gaster; 20: *Crematogaster* spec., gaster, dorsal view; 21: *Leptothorax* spec., gaster, dorsal view; 22: *Leptothorax* spec., peduncle and gaster; 23: *Solenopsis* spec., antenna; 24: *Tetramorium* spec., antenna; 25: *Messor* spec., head; 26: *Tetramorium* spec., head; 27: *Monomorium* spec., head, dorsal view.

Cardiocondyla gallagheri Collingwood & Agosti, 1996
Specimens examined: Sharjah Desert Park, 10.xi.2004, AvH. Sweihan, iii.1995, CAC.
Distribution: Described from Oman. New to the UAE.

Cardiocondyla mauritanica Forel, 1890
Cardiocondyla nuda mauritanica Forel, 1890
Specimens examined: Abu Dhabi, in park, iii.1995, CAC.
Distribution: Tramp species, known from Indonesia all the way westwards to Morocco. Introduced in the USA. Recorded from Yemen as *C. nuda* (Mayr, 1866). New to the UAE.



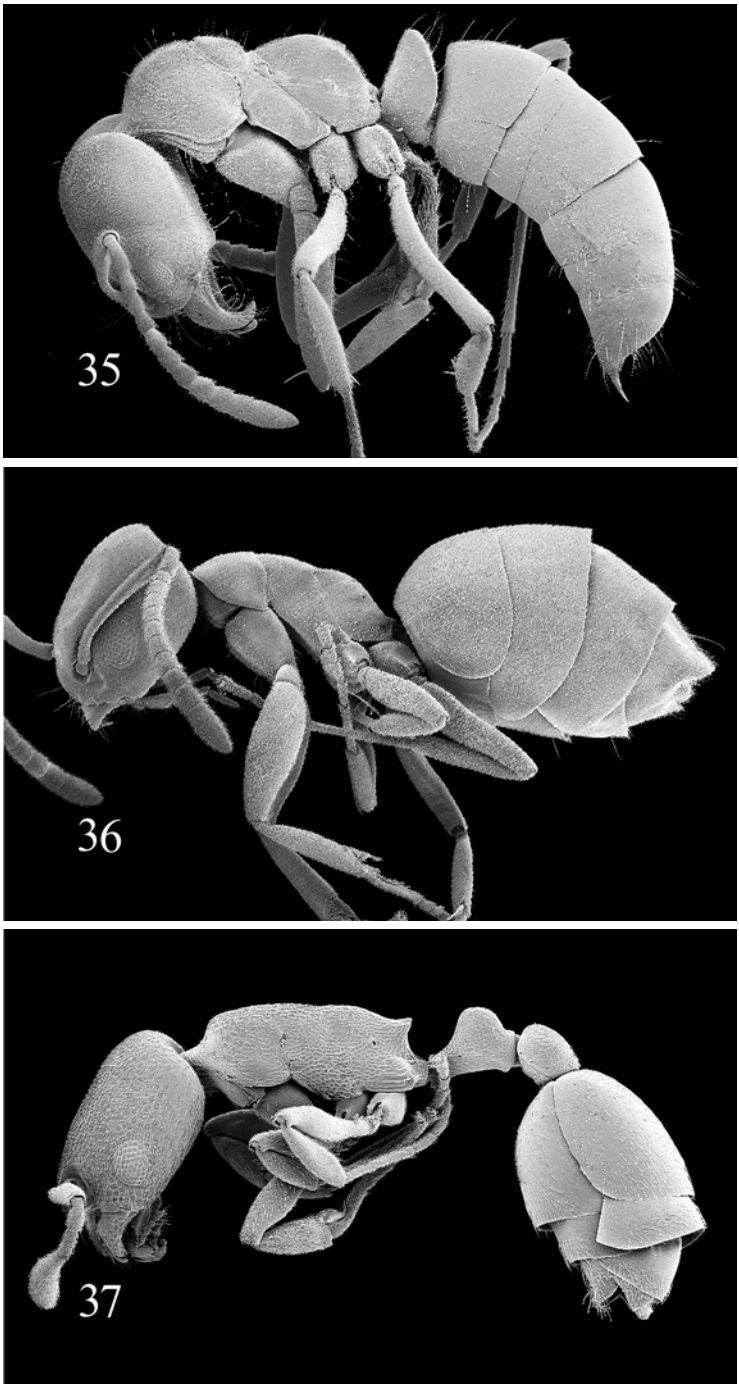
Plates 32–34. *Cardiocondyla emeryi* Forel. (Photographs by A. Nobile, © www.antweb.org)



Figures 28–35. 28: *Monomorium* spec., mid-body and peduncle; 29: *Pheidole* spec., head, dorsal view; 30: *Tetramorium* spec., mid-body and peduncle; 31: *Pheidole* spec., head, minor worker, dorsal view; 32: *Tetramorium* spec., head in dorsal view; 33: *Pheidole* spec., major worker, head in dorsal view; 34: *Cardiocondyla* spec., peduncle; 35: *Leptothorax* spec., peduncle.

Cardiocondyla shuckardi Forel, 1891
Specimens examined: 7 km S of al-Jazirat al-Hamra, 9.x.2004, AvH. 15 km ESE of Sharjah, 2.xii.2004, AvH.
Distribution: Tropical and subtropical Africa. First collected in the Arabian Peninsula by W. Büttiker in 1983 (Collingwood, 1996). Known from Saudi Arabia, Yemen and Kuwait. New to the UAE.

Crematogaster aegyptiacus Mayr, 1862
Specimens examined: Sweihan, iii.1995, CAC.
Distribution: Recorded from Egypt, Saudi Arabia, Yemen, Oman, Eritrea and Kenya. New to the UAE.



Plates 35–37: 35: *Pachycondyla sennaarensis* (Mayr); 36: *Tapinoma melanocephalum* (Fabricius); 37: *Cardiocondyla emeryi* Forel. (Photographs © Fauna of Arabia)

Crematogaster antaris Forel, 1894
Specimens examined: Bunaynah, iii.1995, CAC. 7 km S of al-Jazirat al-Hamra, 9.x.2004, AvH.
Distribution: Described from Algeria. First reported from the UAE by Tigar & Collingwood (1993). Known in the Arabian Peninsula from Kuwait, UAE, Oman and Yemen.

Crematogaster mosis Forel, 1909
Specimens examined: Ghalilah, 8.iii.2005, CAC.
Distribution: Described from Israel. First reported from the UAE (Baynunah) by Collingwood & Agosti (1996). Also known from Yemen.

Crematogaster oasium Santschi, 1911
Specimens examined: Al-Wathba Wetland Reserve, 14.iii.2005, CAC. Abu Dhabi, Camel race track, iii.2005, CAC.
Distribution: Described from Tunisia. Known from Saudi Arabia and Oman. New to the UAE.

Crematogaster senegalensis Roger, 1863 Plates 38–39
Specimens examined: Dhadnah, 20 m, 25°29'N 56°22'E, 16.iii.1995, on rocks with shrubs, leg. D. Agosti. Al-Wathba Wetland Reserve, 14.iii.2005, CAC.
Distribution: Described from Senegal, widespread in Africa. Known in the Arabian Peninsula from Saudi Arabia, Oman and Yemen. New to the UAE.

Messor ebeninus Santschi, 1927
Distribution: Middle East species, described from Lebanon. First recorded from the UAE (Ras Ghanada) by Tigar & Collingwood (1993). No new records. Known from Egypt and in the Arabian Peninsula from Kuwait, Saudi Arabia, UAE, Oman and Yemen.

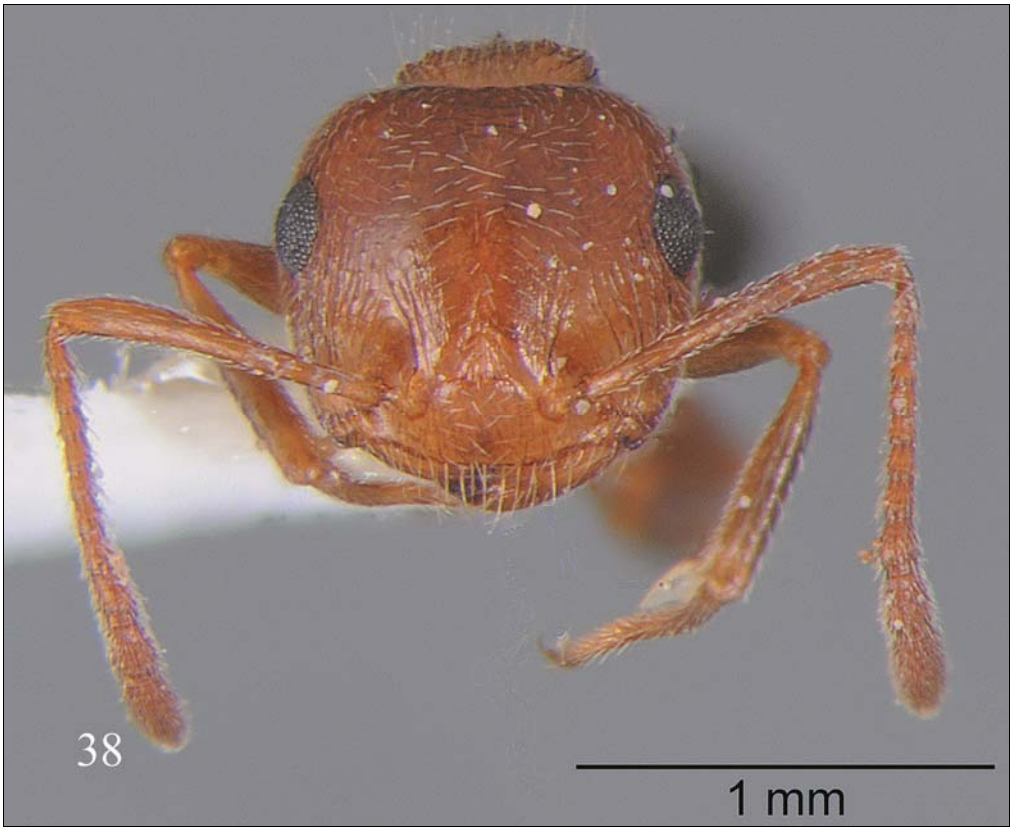
Messor foreli Santschi, 1923 Plates 40–41
Specimens examined: Near al-Hayer, 14.ii.2005, in leaf litter, AvH. NARC, near Sweihan, 14.iii.2005, CAC.
Distribution: Common in the northern Sahara. First recorded from the UAE (Ras Ghanada) by Collingwood & Agosti (1996). Also known from Saudi Arabia and Oman.

Messor hismai Collingwood & Agosti, 1996 Plates 42–43
Specimens examined: Baynunah, iii.1995, CAC. Sweihan, iii.1995, CAC.
Distribution: Described from Saudi Arabia. New to the UAE.

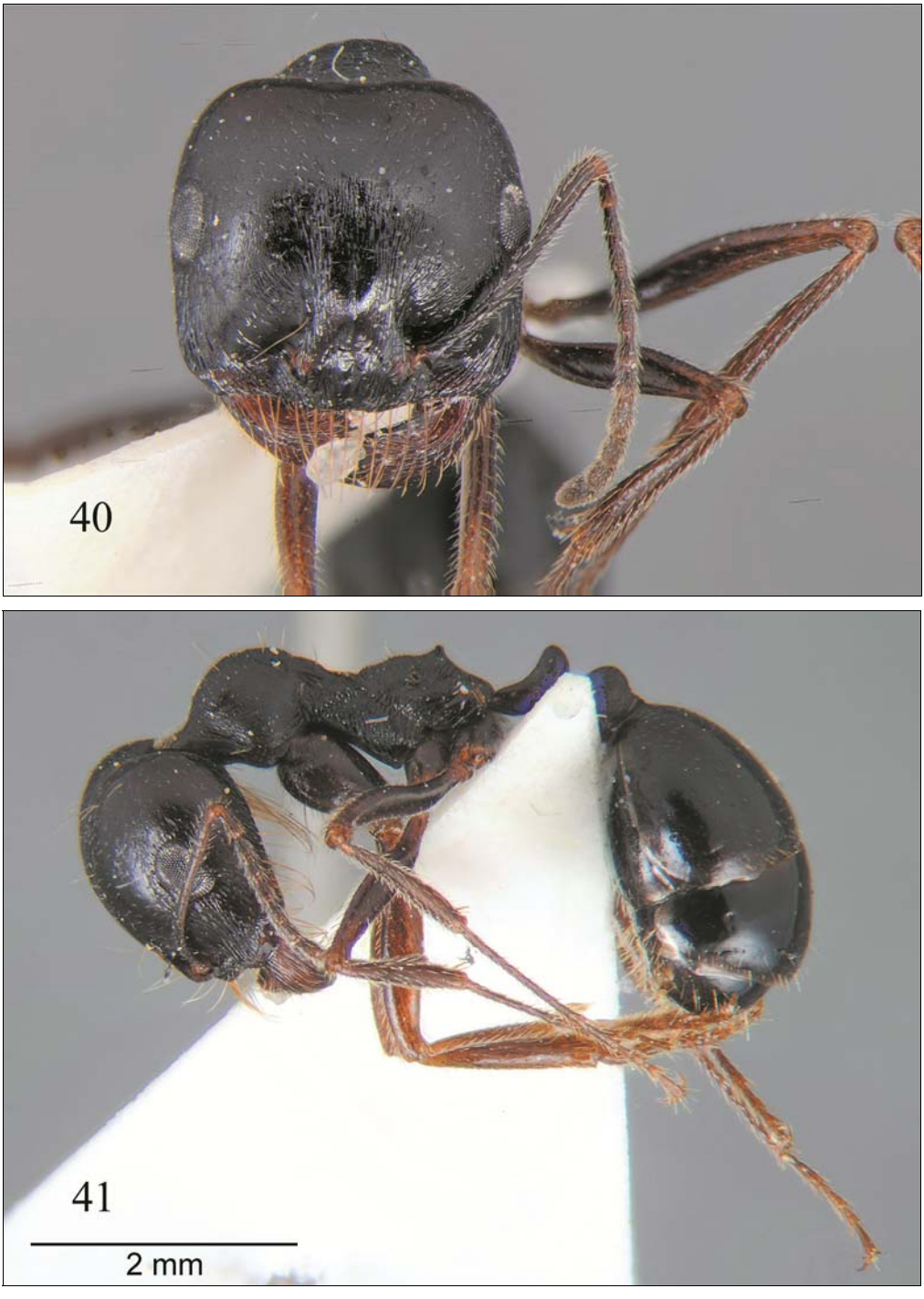
Messor medioruber Santschi, 1910
Specimens examined: Sweihan, iii.1995, CAC. NARC, near Sweihan, 14.iii.2005, CAC.
Distribution: Described from Tunisia, widespread in northern Africa. In the Arabian Peninsula known from Kuwait. New to the UAE.

Messor meridionalis (André, 1883)
Specimens examined: Ras Ghanada, iii.1995, CAC.
Distribution: Recorded from the Middle East and Afghanistan. First recorded from the UAE (Abu Dhabi) by Tigar & Osborne (1999). In the Arabian Peninsula also known from Kuwait, Saudi Arabia and Oman.

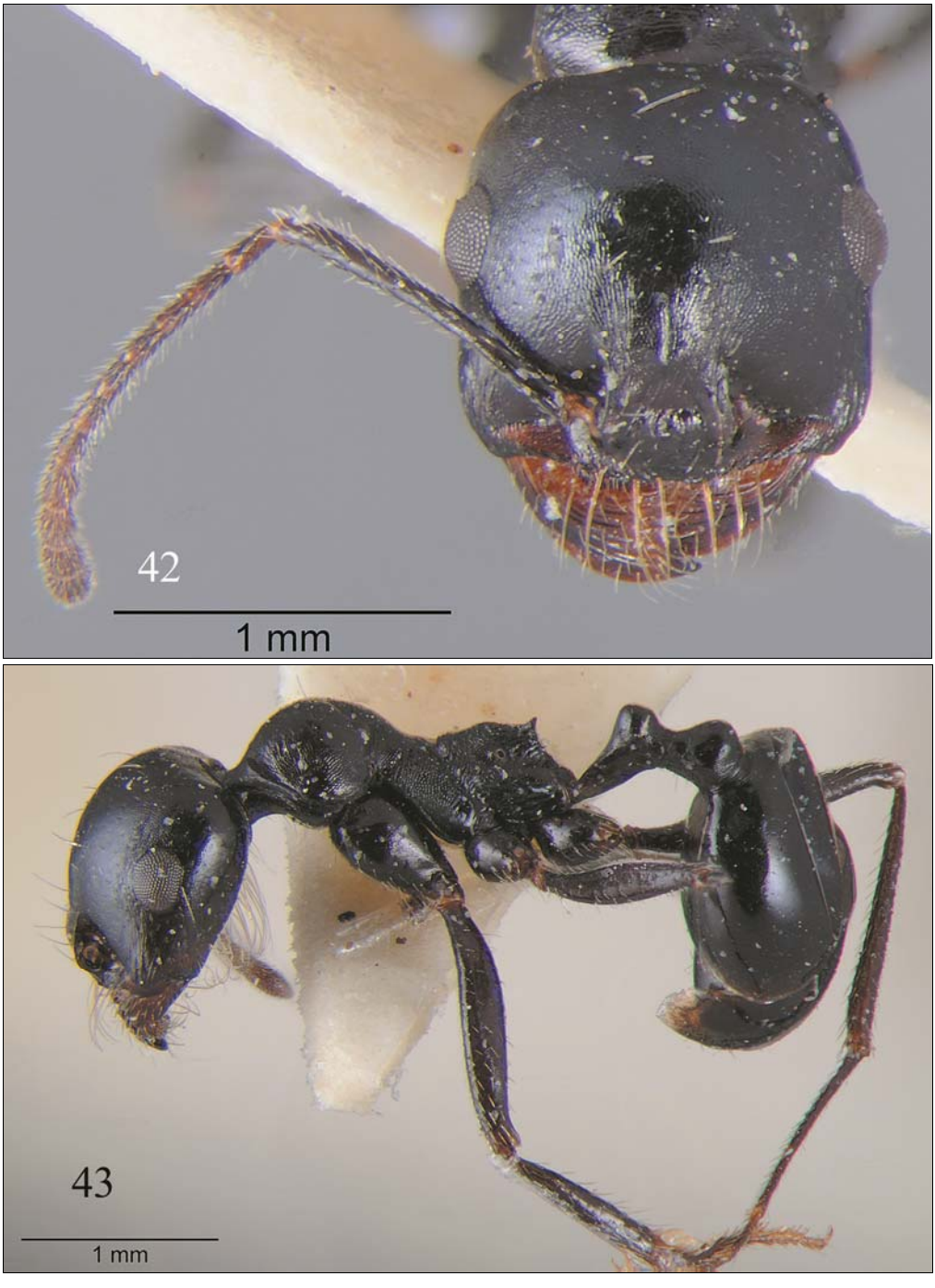
Messor rufotestaceus (Foerster, 1850)
Specimens examined: Wadi Khatam, iii.1995, leg. B. Tigar.



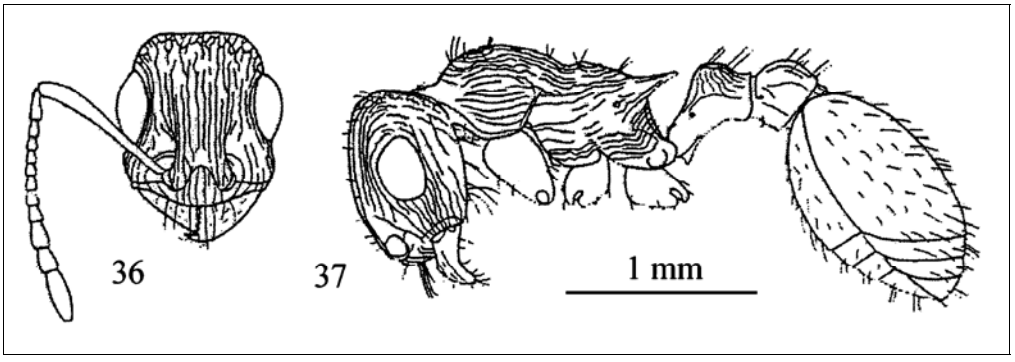
Plates 38–39. *Crematogaster senegalensis* Roger, from Dhadnah. (Photographs by D. Agosti)



Plates 40–41. *Messor foreli* Santschi. (Photographs by D. Agosti)



Plates 42–43. *Messor hismai* Collingwood & Agosti, from Hisma, Saudi Arabia. (Photographs by D. Agosti)



Figures 36–37. *Leptothorax liviae* Agosti & Collingwood nov. spec. 36: Head in dorsal view; 37: Body in lateral view.

Distribution: Recorded from the northern Sahara, Palestine and Syria. First recorded from the UAE by Tigar & Collingwood (1993). In the Arabian Peninsula also known from Saudi Arabia and Oman.

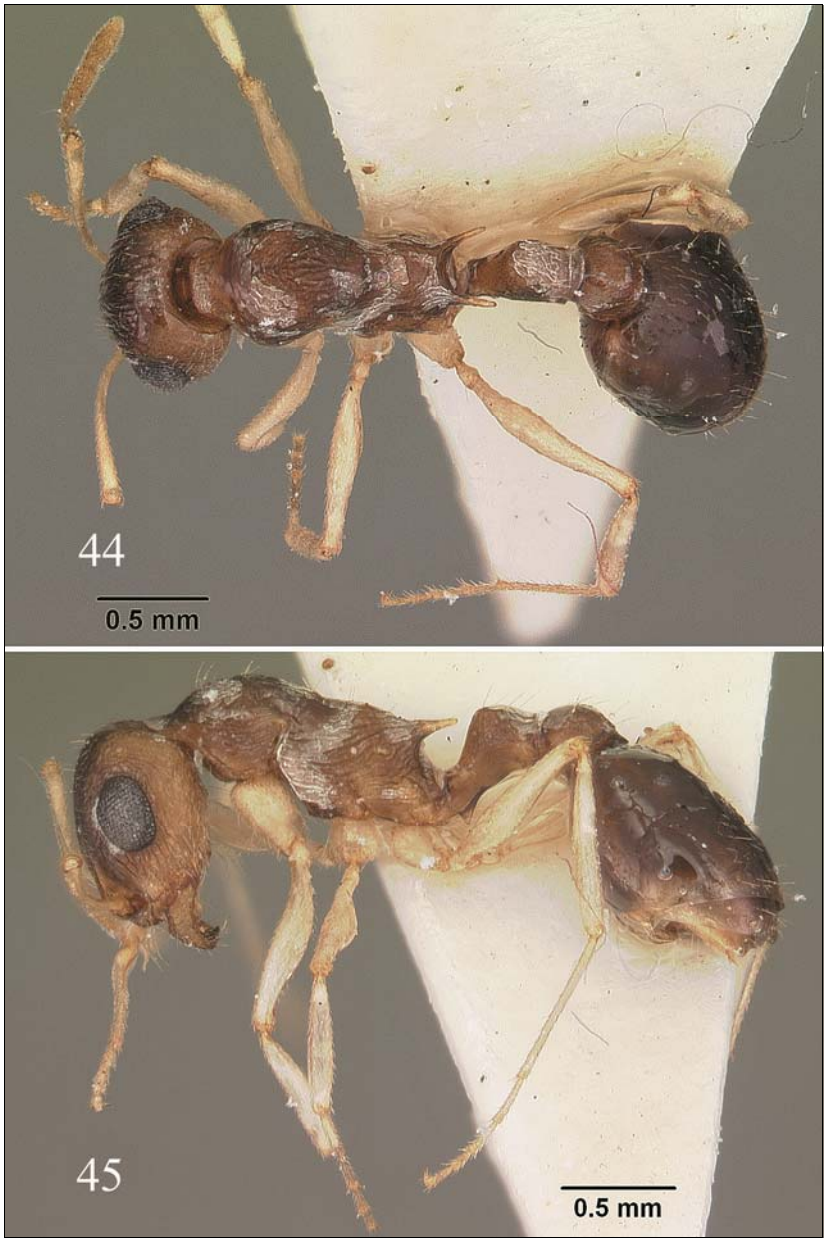
Leptothorax liviae Agosti & Collingwood **nov. spec.** Plates 44–46, Figures 36–37

Specimens examined: Holotype: ☿, United Arab Emirates, Baynunah sand desert [23°40'N 53°00'E], ii–iii.1995, in pitfall trap. leg. B. Tigar & C.A. Collingwood (NHMB). Paratypes: 1☿, same locality as holotype but 3.xii.1994, coll. B. Tigar. 1☿, Buraimi, 16.iii.1995, leg. B. Tigar & CAC. 1☿, al-Ain, 13.iii.2005, CAC. Not included in type series: ♀, same data as holotype.

Description: Holotype. Total length 4.2; head length 1.01; head width 0.87; scape length 0.91; cephalic index 86.1; scape index 104.6; eye length/head width 0.46. Mandibles weakly striate, head strongly striate, frontal triangle clear; alitrunk dorsum and petiole strongly striate, postpetiole striae restricted to dorsum; gaster shining. Frontal laminae prominent and expanded anterolaterally; eyes enormous, nearly half head length; scape relatively long, slightly over-reaching occipital border. Alitrunk dorsal outline with distinct metanotal furrow, but impression shallow. Propodeal spines long and pointed; petiole profile with rounded subangulate dorsum and blunt anterolateral tooth. Dorsal hairs rather short, ventral head hairs long and curved but not crowded. Gaster with short oblique hairs over whole surface. Colour evenly light brown with pale legs and antennae.

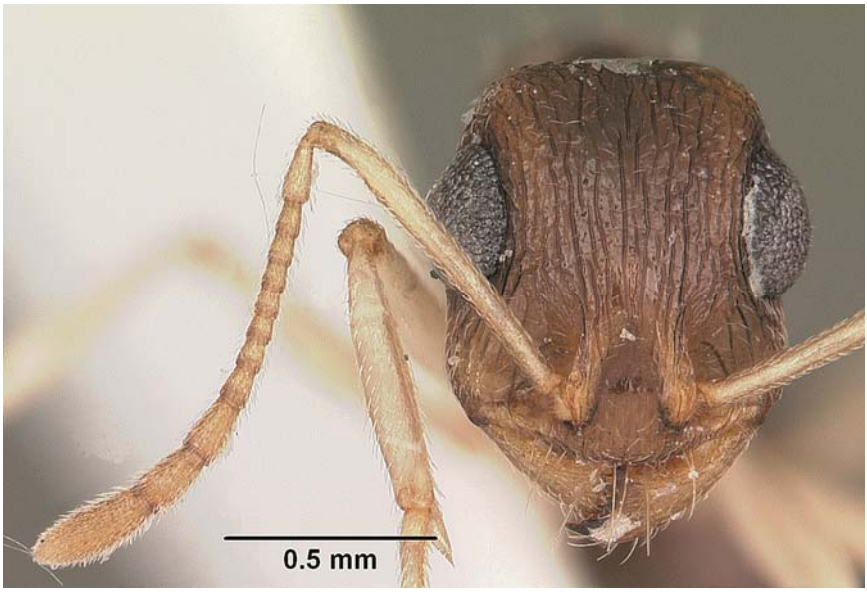
Remarks: The general appearance is somewhat like *Leptothorax cenatus* Bolton, 1982, but the species differs in the relatively larger eyes, longer coarser propodeal spines and the less angulate petiole. It is a larger species than the known North African or Iberian large-eyed desert species (*Leptothorax laurae* Emery, 1884 species group) and has a wider head, distinct longitudinal sculpture on the dorsum of the head, and fewer erect hairs on head and alitrunk than *Leptothorax arenarius* Santschi, 1908. The queen has features similar to the worker but the mesonotum is less coarsely sculptured. Worker specimens taken from under stones in the Buraimi area in the vicinity of trees are smaller than the holotype (TL 2.9–3.0) but have similar body structure and colour. *Leptothorax liviae* nov. spec. is the only *Leptothorax* taken so far from the UAE. Six species of *Leptnothorax* were recorded from other countries of the Arabian Peninsula (Collingwood & Agosti, 1996), three of which had not been identified to the species level.

Etymology: This new species is dedicated to Livia Leu Agosti, wife of Donat Agosti.



Plates 44–45. *Leptothorax liviae* Agosti & Collingwood nov. spec., holotype from Baynunah sand desert [CASENT0102700]. 44: Habitus, dorsal view; 45: Habitus, lateral view. (Photographs by A. Nobile, © www.antweb.org)

Leptothorax megalops Hamann & Klemm, 1967
Specimens examined: Sharjah Desert Park, 29.iii–6.iv.2005, LT, AvH. Wadi Wurayah, 12–14.iv.2005, WT, leg. T. Pape.
Distribution: Described from Sudan. New to the UAE.



Plates 46. *Leptothorax liviae* Agosti & Collingwood nov. spec., holotype from Baynunah sand desert [CASENT0102700], head in dorsal view. (Photograph by A. Nobile, © www.antweb.org)

Monomorium abeillei André, 1881
Specimens examined: Abu Dhabi, public hunting triangle, x.1995, PT, leg. B. Tigar. Al-Aslab, 19.ix.2005, at light, AvH.
Distribution: Wide-ranging Middle Eastern species. First recorded from the UAE (Ras Ghanada) by Tigar & Collingwood (1993). In the Arabian Peninsula also known from Kuwait, Saudi Arabia, Oman and Yemen.

Monomorium abyssinicum Forel, 1894.
Specimens examined: Wadi Safad, 5.iii.2005, CAC.
Distribution: Type locality is Ethiopia. Recorded from West- and East Africa. New to the UAE.

Monomorium acutinode Collingwood & Agosti, 1996
Specimens examined: Medinat Zayed, viii.1995, PT, leg. B. Tigar.
Distribution: Described from Oman. New to the UAE.

Monomorium areniphilum Santschi, 1911
Specimens examined: Baynunah, iii.1995, CAC. 7 km S of al-Jazirat al-Hamra, 9.x.2004, AvH. Sharjah Desert Park, 5–6.x.2004, AvH. Al-Wathba Wetland Reserve, 23.viii.2004, AvH.
Distribution: Recorded from North Africa and the Middle East. In the Arabian Peninsula known from Saudi Arabia and Kuwait. New to the UAE.

Monomorium barbatulum Mayr, 1877
Specimens examined: Abu Dhabi, public hunting triangle, iii.1995, CAC.
Distribution: Described from Kazakhstan. New to the UAE.

Monomorium baushare Collingwood & Agosti, 1996 Plates 56, 64
Specimens examined: Sharjah Desert Park, 6.x.2004, AvH; 6–28.xii.2006, PT, AvH. Wadi Safad, 20.xii.2005–2.i.2006, WT, AvH.
Distribution: Described from Oman. In the Arabian Peninsula also known from Yemen. New to the UAE.

Monomorium bicolor Emery, 1877
Specimens examined: Lahbab-al-Madam, 12.iii.2005, AvH.
Distribution: Widely distributed African species. Already recorded in the UAE from Um az-Zimul by Collingwood & Agosti (1996). In the Arabian Peninsula also known from Oman.

Monomorium buxtoni Crawley, 1920.
Specimens examined: Near Alhala, 10.iii.2005, CAC. Al-Wagan, iii.1995, CAC.
Distribution: Known from Iraq and Iran; in the Arabian Peninsula recorded from Kuwait. New to the UAE.

Monomorium carbo Forel, 1910
Specimens examined: Sharjah Desert Park, 9–21.iii.2005, LT, AvH..
Distribution: Described from Ethiopia. In the Arabian Peninsula also known from Oman. New to the UAE.

Monomorium chobauti Emery, 1896
Specimens examined: Baynunah, iii.1995, CAC. Medinat Zayed, iii.1995, CAC.
Distribution: Recorded from North Africa, Middle East and Turkey. First recorded in the UAE from Rhas Ganada by Collingwood & Agosti (1996). In the Arabian Peninsula also known from Saudi Arabia.

Monomorium clavicorne André, 1881
Specimens examined: Fujairah, 5.iii–6.04.2005, LT, AvH. Sharjah Desert Park, 3.iii.2005, CAC.
Distribution: Described from Israel. New to the UAE.

Monomorium destructor (Jerdon, 1851) Plates 47–49, 57, 65
Specimens examined: Al-Ajban, 9.xi–7.12.2005, L & MT, AvH. Sharjah, 11–17.x.2004, at light, AvH. Sharjah Desert Park, 5–6.x.2004, AvH. Wadi Safad, 20.xii.2005–2.i.2006, WT, AvH. Al-Wathba Wetland Reserve, 23.viii.2004, AvH.
Distribution: Invasive ant species from the Old World tropics, nowadays spread worldwide (Wetterer, 2009b). Recorded from the UAE by Collingwood, Tigar & Agosti (1997). In the Arabian Peninsula also known from Saudi Arabia, Oman and Yemen.

Monomorium fayfaense Collingwood & Agosti, 1996.
Specimens examined: Wadi Wurayah, near waterfall, 24.ii.2005, AvH.
Distribution: Described from Saudi Arabia and Yemen. New to the UAE.

Monomorium fezzanense Collingwood & Agosti, 1996
Species described from Saudi Arabia and Oman; recorded from Abu Dhabi by Tigar & Osborne (1999). No recent specimens have been collected.

Monomorium hanaqe Collingwood & Agosti, 1996
Specimens examined: Al-Ain, 8.iv.2005, AvH. Jumeira, iii.1991, leg. C. Gross. Near Tayyibah, 10.iii.2005, AvH.

Plates 47–49. *Monomorium destructor* (Jerdon). (Photographs by A. Nobile, © www.antweb.org)

Distribution: Described from Saudi Arabia and Yemen. New to the UAE.

Monomorium hemame Collingwood & Agosti, 1996
Specimens examined: Jumeira, iii.1995, CAC.
Distribution: Described from Kuwait and Saudi Arabia. New to the UAE.

Monomorium indicum Forel, 1902 Plates 50–52
Specimens examined: Khor Kalba, lagoon, 12.iii.2005, AvH. Lahbab-al-Madam, 12.iii.2005, AvH.
Distribution: An Indian species, first recorded from the UAE by Collingwood, Tigar & Agosti (1997).

Monomorium lameerei Forel, 1902
Specimens examined: Dibba, iii.1995, CAC. Lahbab-al-Madam, 12.iii.2005, AvH. Sharjah, 11–17.x.2004, at light, AvH.
Distribution: Described from Algeria. New to the UAE.

Monomorium luteum Emery, 1881
Specimens examined: Al-Wathba Wetland Reserve, 14.iii.2005, C.A. Collingwood.
Distribution: Described from Yemen. New to the UAE.

Monomorium mintiribe Collingwood & Agosti, 1996
Specimens examined: Baynunah, iii.1995. Sharjah Desert Park, 3.iii.2005, CAC.
Distribution: Described from Oman and Saudi Arabia. New to the UAE.

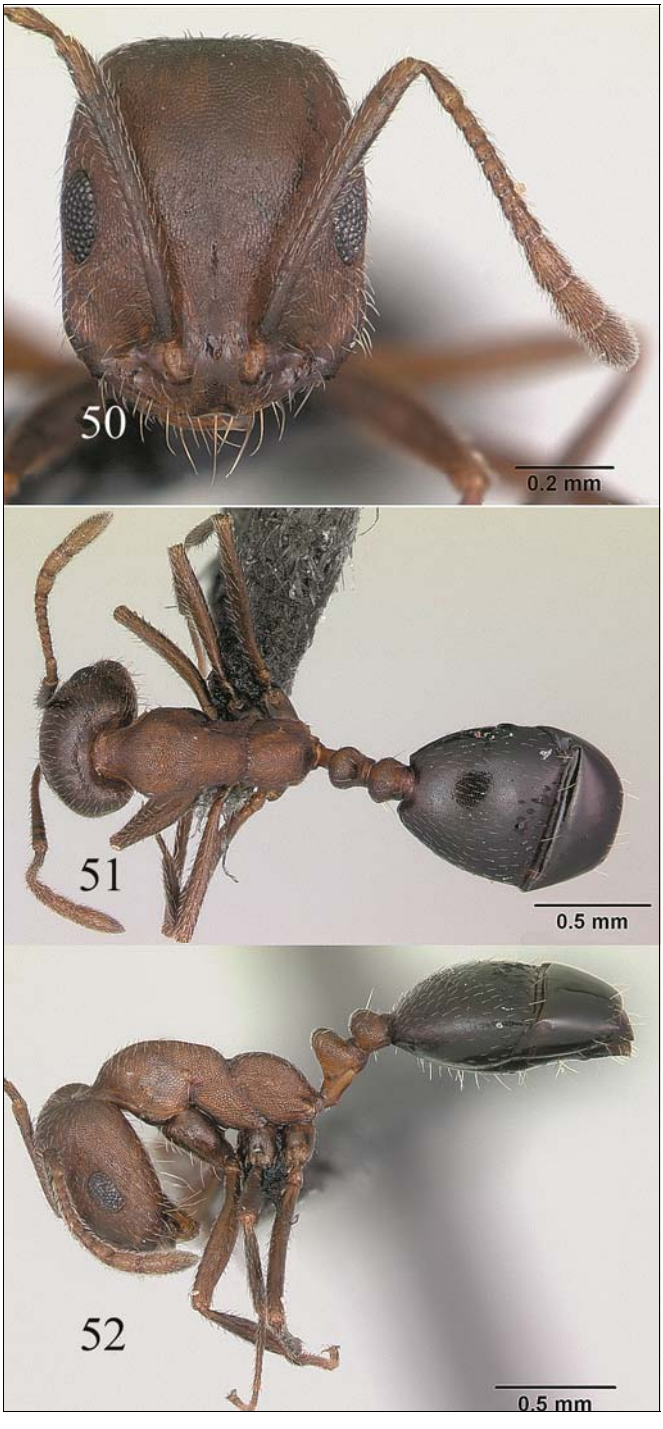
Monomorium mayri Forel, 1902
Specimens examined: Al-Aslab, 19.ix.2005, at light, AvH. 7 km S of al-Jazirat al-Hamra, 9.x.2004, AvH. Ruwais, iii.1995, CAC.
Distribution: Described from India. In the Arabian Peninsula known from Saudi Arabia, UAE, Oman and Yemen. First recorded from the UAE by Tigar & Collingwood (1993).

Monomorium niloticum Emery, 1881
Specimens examined: Jebel Hafit, iii.1995, CAC; 13.iii.2005, CAC.
Distribution: Described from Egypt. In the Arabian Peninsula already known from Saudi Arabia, Oman and Yemen. New to the UAE.

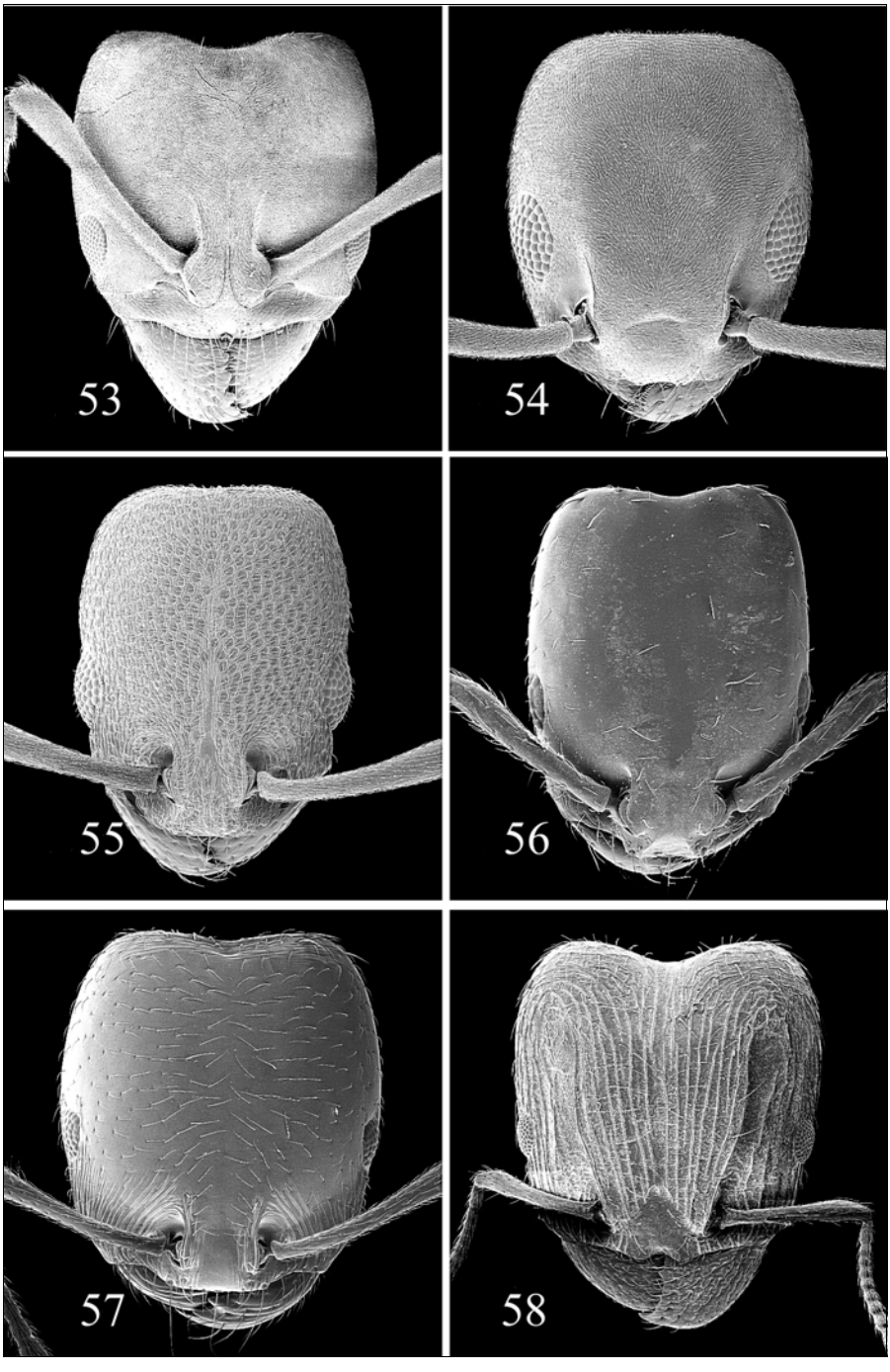
Monomorium nitidiventre Emery, 1893
Specimens examined: 7 km S of al-Jazirat al-Hamra, 8.iii.2005, CAC. Wadi Wurayah, 12–14.iv.2005, T. Pape.
Distribution: In the Arabian Peninsula known from Saudi Arabia and Yemen. New to the UAE.

Monomorium perplexum Radchenko, 1996
Specimens examined: Hatta-Khor Kalba, 12.iii.2005, CAC.
Distribution: Described from Armenia, Georgia, Turkey and Crete. New to the Arabian Peninsula and the UAE.

Monomorium phoenicium Santschi, 1927
Specimens examined: 15 km ESE of Sharjah, 2.xii.2004, AvH.
Distribution: Described from Lebanon, occurring in North Africa and the Middle East. In the Arabian Peninsula known from Saudi Arabia and Oman. New to the UAE.



Plates 50–52. *Monomorium indicum* Forel. (Photographs by A. Nobile, © www.antweb.org)



Plates 53–58. Heads in dorsal view. 53: *Pachycondyla sennaarensis* (Mayr); 54: *Tapinoma melanocephalum* (Fabricius); 55: *Cardiocondyla emeryi* Forel; 56: *Monomorium baushare* Collingwood & Agosti.; 57: *Monomorium destructor* (Jerdon); 58: *Pheidole teneriffana* Forel. (Photographs © Fauna of Arabia)

Monomorium qarahe Collingwood & Agosti, 1996
Specimens examined: Sharjah Desert Park, 14.x.2004, AvH; 3.iii.2005, CAC. Al-Wathba Wetland Reserve, 14.iii.2005, CAC.
Distribution: Described from the mountains of Saudi Arabia. New to the UAE.

Monomorium subopacum F. Smith, 1858 Plates 59–61
Specimens examined: Dubai, Mushrif Park, 6.iii.2005, CAC. Ruwais, iii.1995, CAC.
Distribution: Type locality: Portugal. Species widely spread around the Mediterranean and on the Atlantic islands. In the Arabian Peninsula known from Oman and Yemen. New to the UAE.

Monomorium tumaire Collingwood & Agosti, 1996
Distribution: The type locality of this species is Ras Ghanada, UAE. Also recorded from the UAE by Tigar & Collingwood (1993, as *Monomorium tumaire* MS), Tigar & Osborne (1999) and Gillett & Howarth (2004). No recent specimens have been collected.

Monomorium wahibiense Collingwood & Agosti, 1996
Distribution: Described from the Wahiba Sands in Oman. Also known from Jebel Hafit and Ras Ghanada (Collingwood & Agosti, 1996). No recent specimens have been collected.

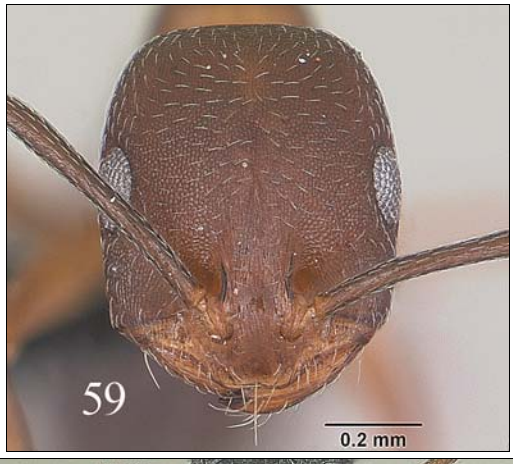
Pheidole megacephala (Fabricius, 1793)
Specimens examined: Sharjah, 2.iii.2005, CAC. Sharjah Desert Park, 6–28.xii.2006, PT, AvH. Wadi Safad, 26.xii.2005–2.i.2006, WT, AvH.
Distribution: One of the world's most damaging invasive species, becoming a dominant species in many areas it has invaded (Dejean et al., 2007). In the Arabian Peninsula known from Saudi Arabia, Kuwait, Oman and Yemen. New to the UAE.

Pheidole sculpturata Mayr, 1866
Specimens examined: 7 km S of al-Jazirat al-Hamra, 9.x.2004, AvH.
Distribution: Widespread in Africa, from South Africa to Sudan. In the Arabian Peninsula known from Saudi Arabia, Oman and Yemen. New to the UAE.

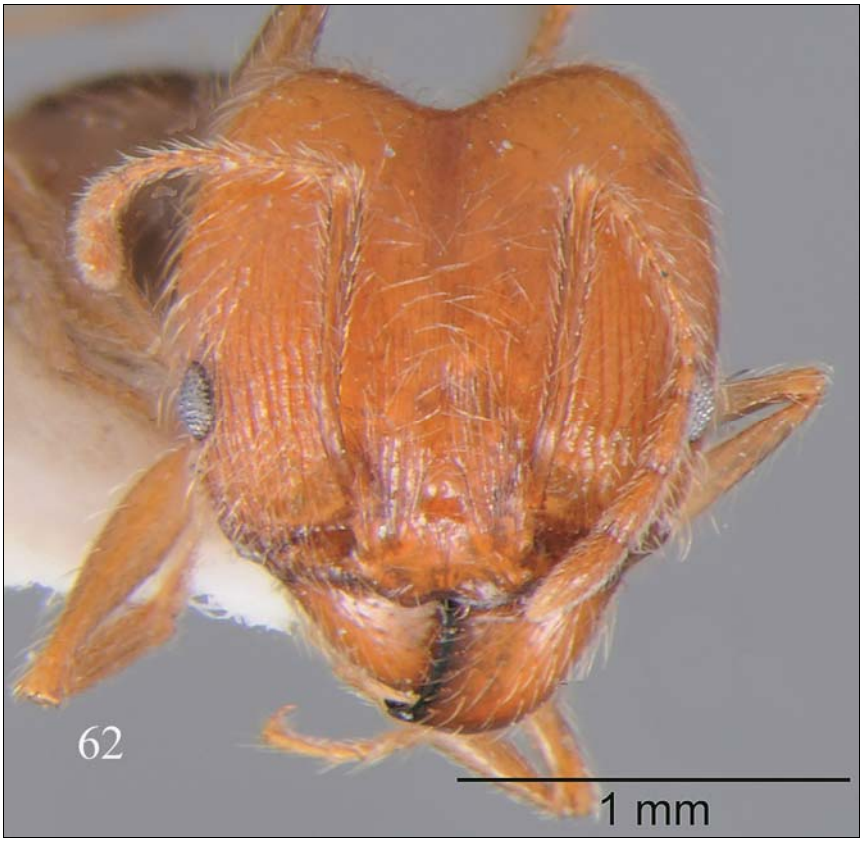
Pheidole sinaitica Mayr, 1862 Plates 62–63
Specimens examined: 7 km S of al-Jazirat al-Hamra, 1.iii.2005, CAC. NARC, near Sweihan, 15–30.i.2005, LT, AvH. Wadi Safad, 26.xii.2005–2.i.2006, WT, AvH.
Distribution: Described from the Sinai Peninsula, recorded from North Africa and the Middle East. In the Arabian Peninsula known from Saudi Arabia and Oman. New to the UAE.

Pheidole teneriffana Forel, 1893 Plates 58, 66
Specimens examined: Al-Aslab, 19.ix.2005, at light, AvH.
Distribution: Described from the Canary Islands, recorded from the Mediterranean area and East Africa. Recorded from the UAE by Collingwood, Tigar & Agosti (1997). In the Arabian Peninsula also known from Saudi Arabia and Yemen.

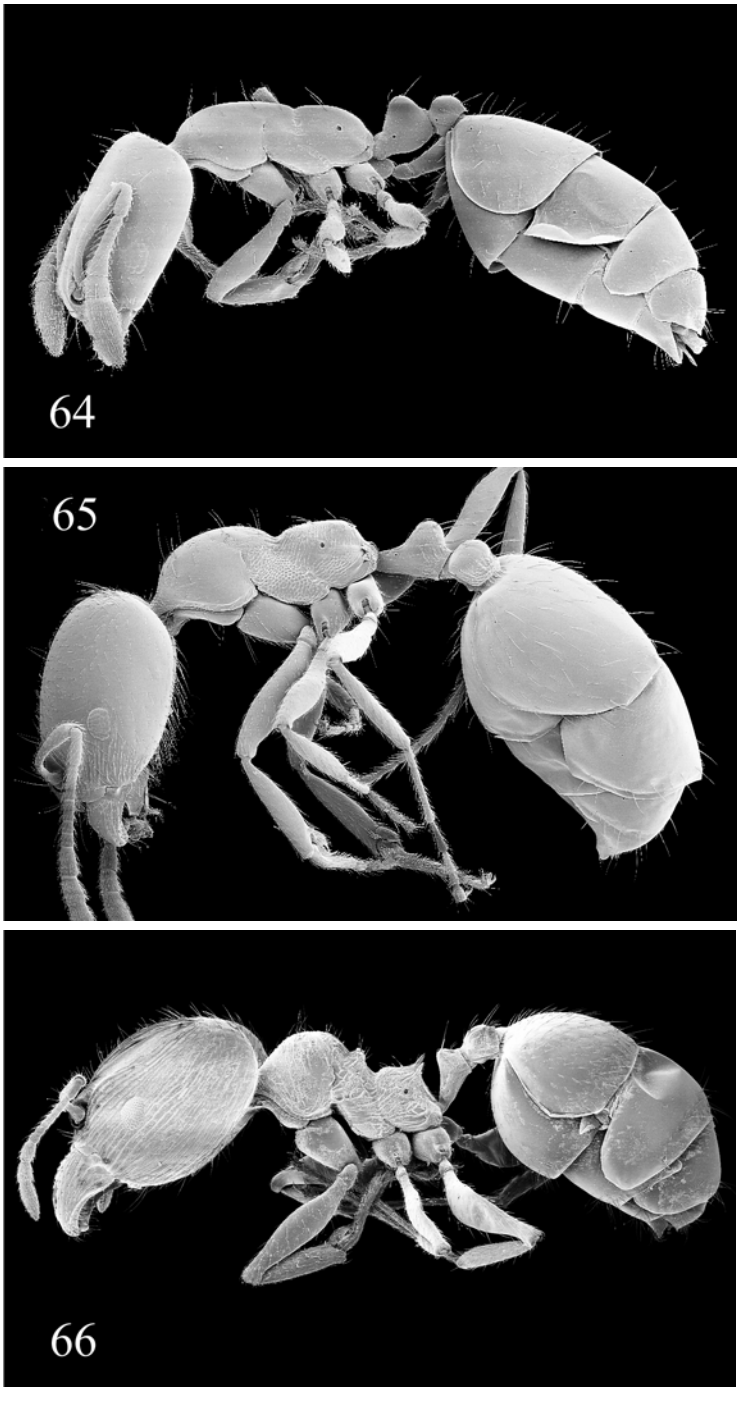
Solenopsis geminata (Fabricius, 1804) Plates 67–69
Specimens examined: Al-Aslab, 19.ix.2005, at light, AvH. Sharjah Desert Park, 5–6.x.2004, AvH.
Distribution: Trager (1991) and Wetterer (2010) offer theories about how this species, notorious for its painful sting, spread around the tropics of the whole world. Recorded from the UAE by Collingwood, Tigar & Agosti (1997).



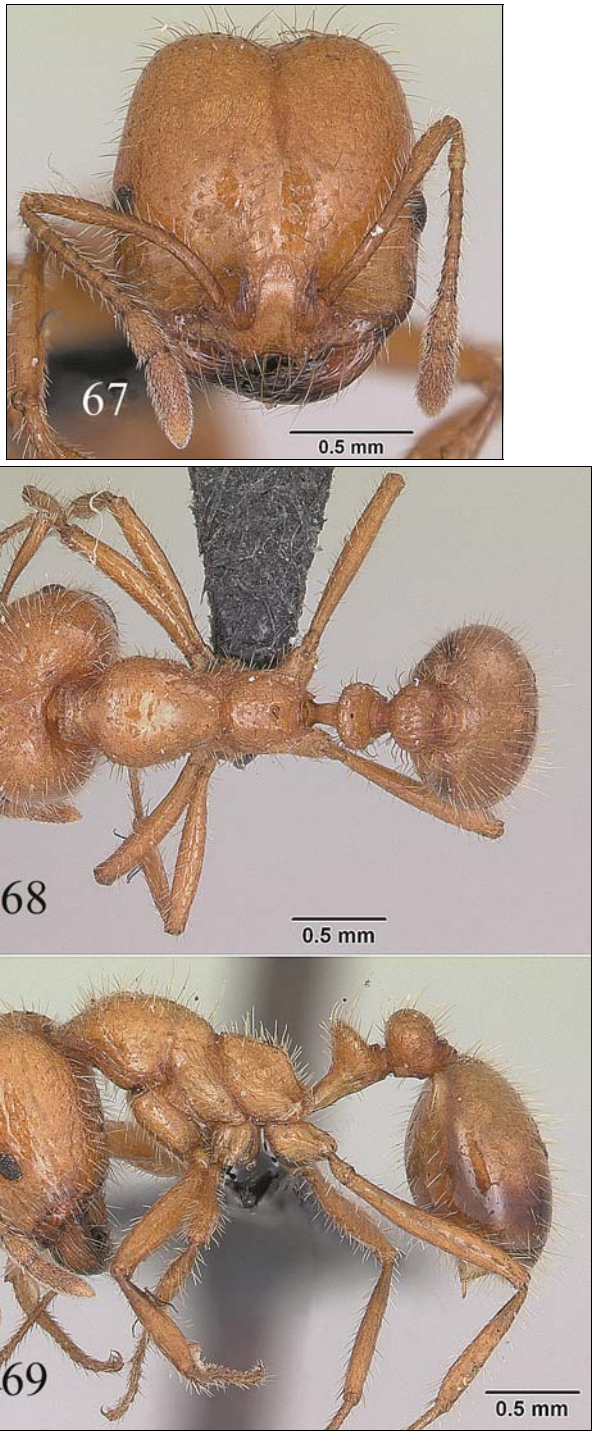
Plates 59–61. *Monomorium subopacum* F. Smith. (Photographs by A. Nobile, © www.antweb.org)



Plates 62–63. *Pheidole sinaitica* Mayr. (Photographs by D. Agosti)



Plates 64–66. 64: *Monomorium baushare* Collingwood & Agosti.; 65: *Monomorium destructor* (Jerdon); 66: *Pheidole teneriffana* Forel. (Photographs © Fauna of Arabia)



Plates 67–69. *Solenopsis geminata* (Fabricius). (Photographs by A. Nobile, © www.antweb.org)

Solenopsis omana Collingwood & Agosti, 1996
Specimens examined: Ruwais, iii.1995, CAC.
Distribution: Described from Oman and the UAE ('Suneira' – according to the coordinates on the outskirts of Dubai, near al-Awir).

Tetramorium bicarinatum (Nylander, 1846) Plates 70–72
Specimens examined: Fujairah, iii.1995, CAC. Wadi Maidaq, 21–22.i.2005, AvH.
Distribution: Cosmopolitan tramp species. First recorded from the UAE (Fujairah) by Collingwood, Tigar & Agosti (1997). Recently recorded from Saudi Arabia (Sharaf et al., 2011b).

Tetramorium calidum Forel, 1907
Specimens examined: Al-Ain, 13.iii.2005, CAC. Dubai, Mushrif Park, 6.iii.2005, CAC.
Distribution: Described from 'Arabia', recorded from Yemen and Oman. New to the UAE.

Tetramorium doriae Emery, 1881
Specimens examined: Abu Dhabi, Camel Race Track, 14.iii.2005, CAC.
Distribution: Described from 'Arabia', recorded from Saudi Arabia and Yemen. New to the UAE.

Tetramorium juba Collingwood, 1985
Specimens examined: Al-Ain, iii.1995, CAC. Sweihan, iii.1995, CAC.
Distribution: Described from Saudi Arabia, also known from Kuwait. New to the UAE.

Tetramorium latinode Collingwood & Agosti, 1996 Plates 73–76
Specimens examined: Sharjah Desert Park, 6.x.2004, AvH.
Distribution: Desbribed from Yemen, recently recorded from Saudi Arabia by Sharaf & Aldawood, (2011b, in press). New to the UAE.

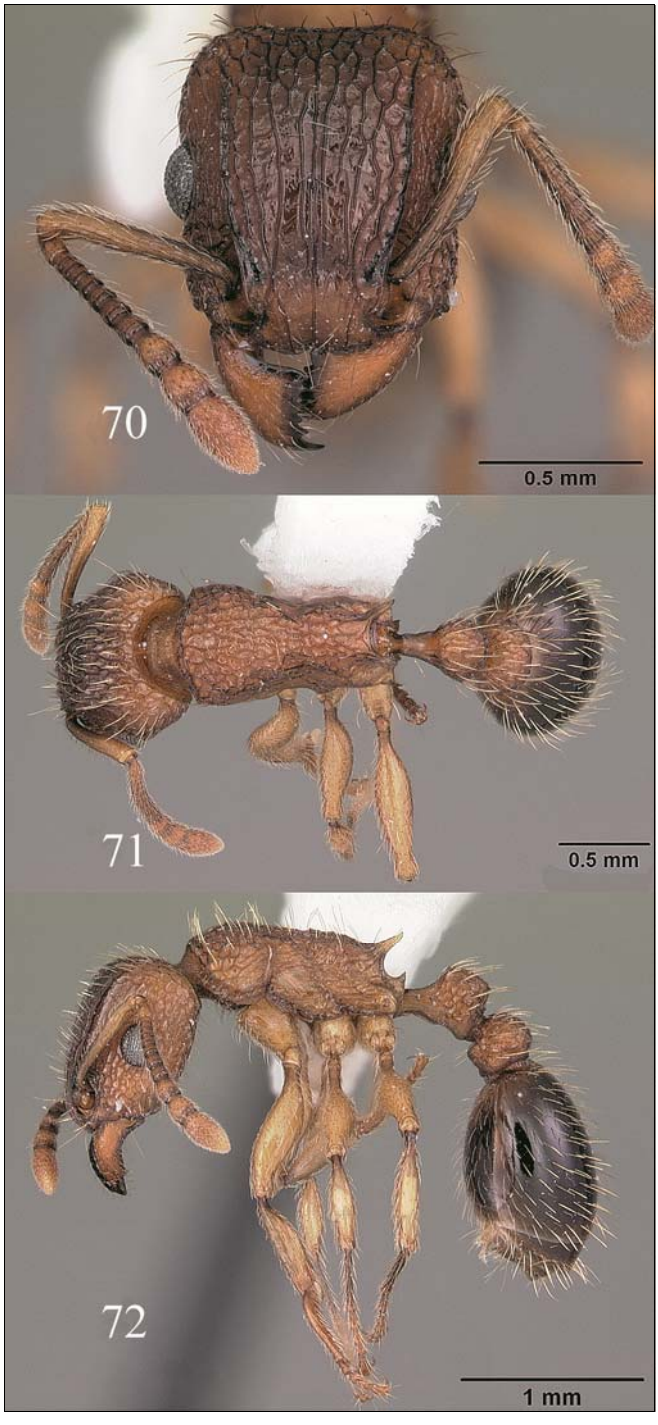
Tetramorium sericeiventre Emery, 1877 Plates 77–79
Specimens examined: Sharjah Desert Park, 29.iii–6.iv.2005, LT, AvH; 6–28.xii.2006, PT, AvH.
Distribution: Widespread in Africa. In the Arabian Peninsula known from Saudi Arabia, where it is very common, Yemen and Oman. New to the UAE.

Tetramorium yemene Collingwood & Agosti, 1996
Specimens examined: Lahbab-al-Madam, 12.iii.2005, AvH.
Distribution: Described from Yemen. New to the UAE.

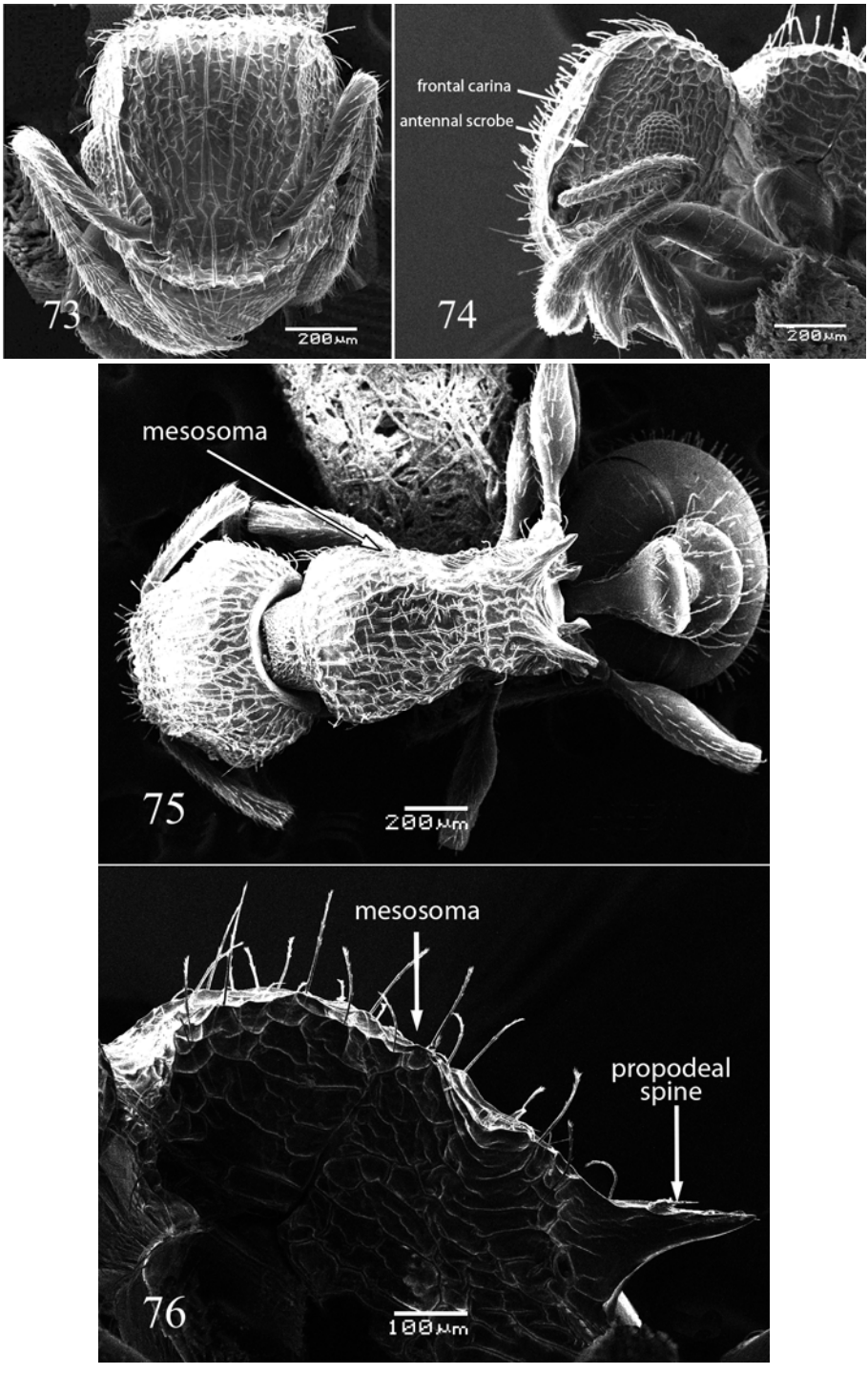
Subfamily **Formicinae** Latreille, 1836

Key to the genera of Formicinae occurring in the UAE (workers)

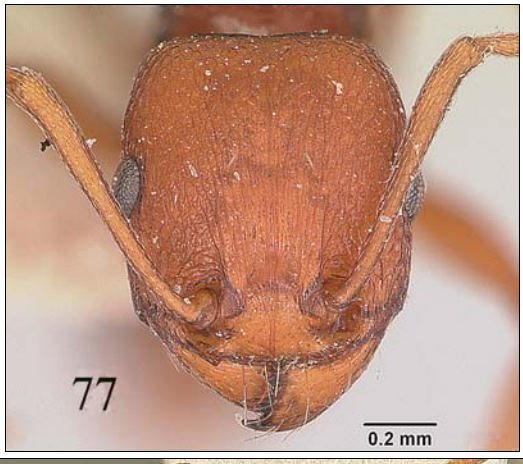
1 Antennae 12 segmented **2**
– Antennae 11 segmented. **5**
2 Antennal insertions clearly distant from posterior clypeal margin (Figs 5 & 39) **3**
– Antennal insertions close to or contiguous with clypeal margin (Figs 40 & 41)..... **4**
3 Petiole with spines or teeth ..... ***Polyrhachis*** Smith
– Petiole entire or emarginated, never dentate ..... ***Camponotus*** Mayr
4 Ocelli present and distinct (Fig. 40). Head underneath with long curved hairs anteriorly. Body with normal hairs (fine, not stout) ..... ***Cataglyphis*** Foerster



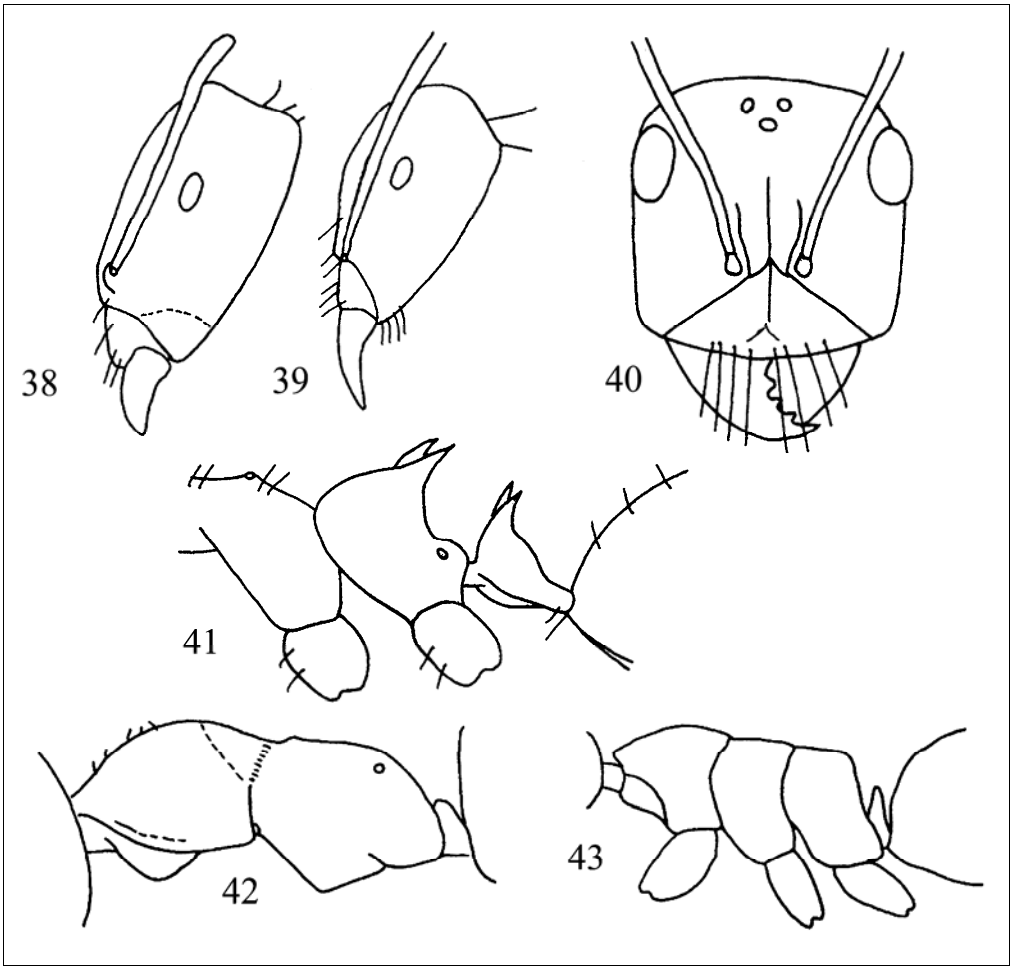
Plates 70–72. *Tetramorium bicarinatum* (Nylander). (Photographs by A. Nobile, © www.antweb.org)



Plates 73–76. *Tetramorium latinode* Collingwood & Agosti. 73: Full face view of head; 74: Head profile. 75: Full face view of head; 76: Head profile. (Photographs from Sharaf & Aldawood, in press).



Plates 77–79. *Tetramorium sericeiventre* Emery. (Photographs by A. Nobile, © www.antweb.org)



Figures 38–43. 38: *Myrmoteras* spec., head in dorsal view; 39: *Camponotus* spec., head; 40: *Cataglyphis* spec., head in dorsal view; 41: *Lepisiota* spec., mid-body and petiole; 42: *Plagiolepis* spec., mid-body; 43: *Anaplolepis* spec., mid-body.

– Ocelli vestigial or absent. Underside of head with short hairs only. Body with stout suberect pairs of hairs ..... ***Paratrechina*** Motschulsky

5 Propodeum bidentate or bituberculate; petiole incised and usually bidentate (Fig. 41) ..... ***Lepisiota*** Santschi

– Propodeum unarmed, petiole simple **6**

6 Palp formula 5, 3 or less ..... ***Acropyga*** Roger

– Palp formula 6, 4 ..... **7**

7 In dorsal view metanotum separated from mesonotum by a deeply impressed suture (Fig. 42) ..... ***Plagiolepis*** Mayr

– Metanotum not distinguished by sutures; mesapropodeal furrow shallow (Fig. 43) ..... ***Anaplolepis*** Santschi

Acropyga spec.
Specimens examined: Near Khor Kalba, along highway to Sharjah, stony desert, queen, iii.2006, AvH.
Distribution: Members of this genus are distributed worldwide in tropics and warm temperate. Most species are thought to be hypogaeic and tending both mealybugs and coccids; therefore, they are indirect plant pests. A single queen without wings was collected which is not sufficient to identify it to species rank. This genus is recorded for the first time as occurring in Arabian Peninsula.

Anoplolepis gracilipes (F. Smith, 1857) Plates 80–82
Specimens examined: Al-Wathba Wetland Reserve, 14.iii.2005, CAC.
Distribution: An African species, the 'yellow crazy ant' has been introduced into Australia and the Pacific Islands, causing a considerable loss of local biodiversity. New to the UAE.

Anoplolepis longitarsis Collingwood & Agosti, 1996.
Distribution: Described from Saudi Arabia and Yemen. New to the UAE.

Camponotus acvapimensis Mayr, 1862 Plates 83, 115
Specimens examined: Al-Wathba Wetland Reserve, 14.iii.2005, CAC.
Distribution: African species, known from Saudi Arabia and Yemen (Socotra). New to the UAE.

Camponotus adenensis Emery, 1893
Specimens examined: 7 km S of al-Jazirat al-Hamra, 8.iii.2005, AvH. Distribution: Described from Aden in Yemen. Also known from Saudi Arabia. New to the UAE.

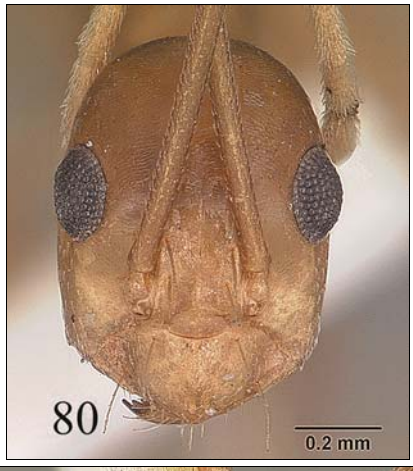
Camponotus alii Forel, 1890
Specimens examined: Wadi Wurayah, 10.iii.2005, CAC.
Distribution: New to the UAE.

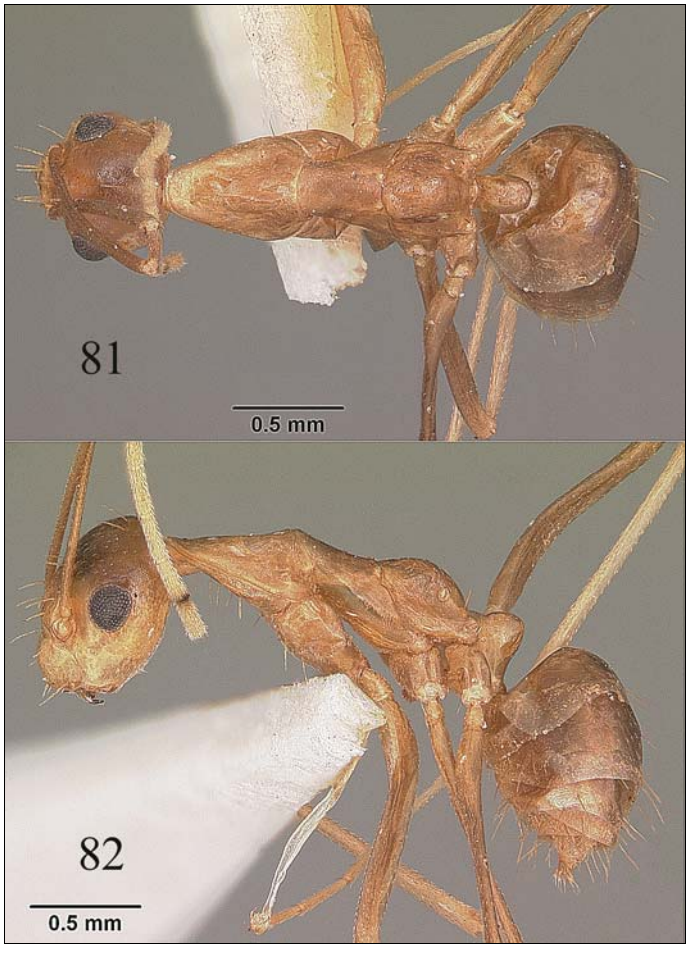
Camponotus atlantis Forel, 1890 Plates 84–85, 116–117
Specimens examined: Al-Ain, 13.iii.2005, CAC. Wadi Safad, 20.xii.2005–2.i.2006, LT, AvH.
Distribution: A common species in North Africa. In the Arabian Peninsula recorded from Saudi Arabia, Oman and Yemen. New to the UAE.

Camponotus compressus (Fabricius, 1787)
Specimens examined: Al-Ain, iii.1995, leg. V. Slijivic.
Distribution: A common Indian species. First recorded from the UAE by Collingwood, Tigar & Agosti (1997).

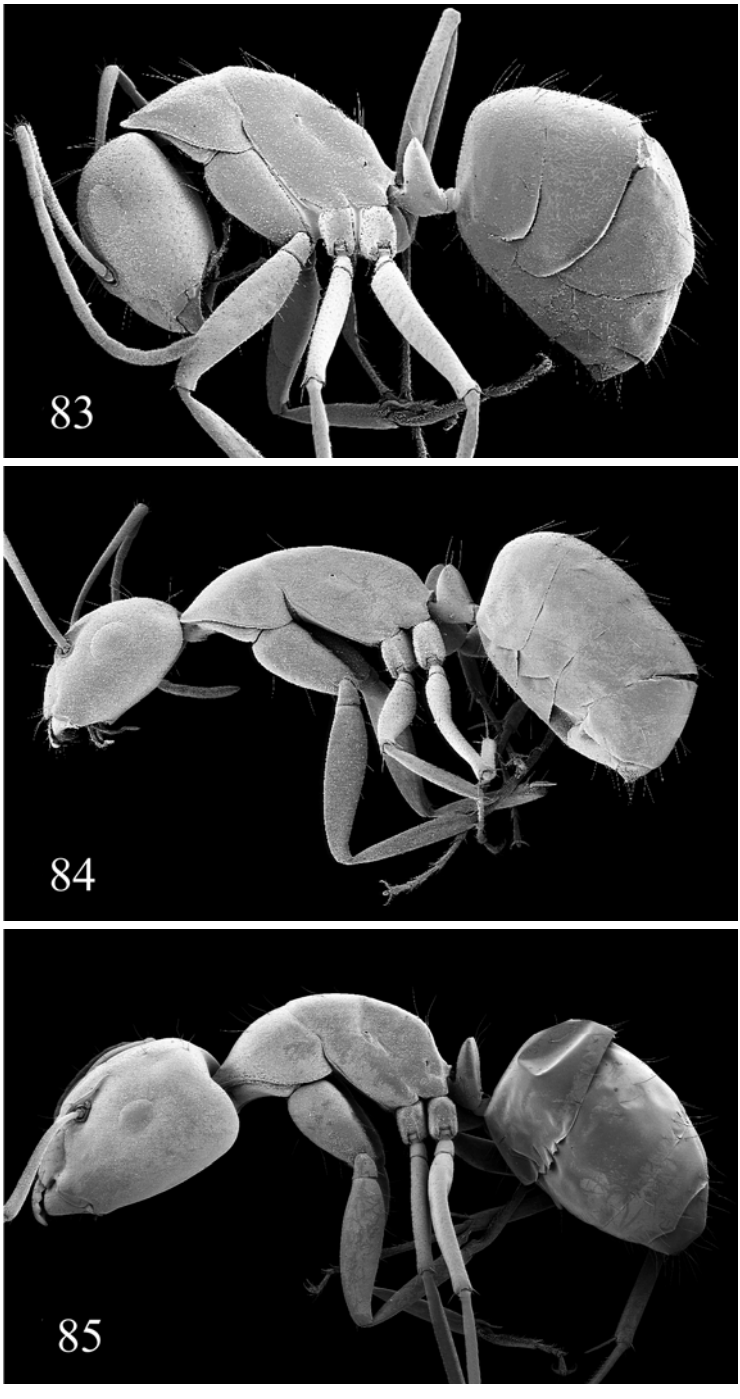
Camponotus empedocles Emery, 1920
Specimens examined: Al-Ajban, 9.xi–7.xii.2005, LT & MT, AvH. Lahbab-al-Madam, 12.iii.2005, AvH. Sharjah Desert Park, 18–25.i.2005; 22.ii–16.iii.2005, LT, AvH.
Distribution: Described from South Africa. In the Arabian Peninsula known from Saudi Arabia and Yemen. New to the UAE.

Camponotus fayfaensis Collingwood & Agosti, 1996
Specimens examined: Wadi Safad, 16.iii.2005, CAC.
Distribution: Described from Saudi Arabia. Also known from Yemen. New to the UAE.





Plates 80–82. *Anoplolepis gracilipes* (F. Smith). (Photographs by A. Nobile, © www.antweb.org)



Plates 83–85. 83: *Camponotus acvapimensis* Mayr; 84: *Camponotus atlantis* Forel, small worker; 85: *Camponotus atlantis* Forel, large worker. (Photographs © Fauna of Arabia)

Camponotus fellah Dalla Torre, 1893
Specimens examined: Al-Aslab, 19.ix.2005, at light, AvH. Fujairah, 5.iii–6.iv.2005, LT, AvH. Sharjah Desert Park, 4–5.x.2004, AvH; 14.x.2004, AvH; 9–21.iii.2005, LT, AvH; 21–29.iii.2005, LT, AvH.
Distribution: Occurring from Egypt (type-locality) to Afghanistan. First recorded from the UAE by Collingwood & Agosti (1996), as well as by Tigar & Osborne (1999). In the Arabian Peninsula also known from Kuwait, Saudi Arabia, Oman and Yemen.

Camponotus flavomarginatus Mayr, 1862
Specimens examined: Sharjah Desert Park, 5–6.x.2004, AvH; 3.iii.2005, CAC.
Distribution: In the Arabian Peninsula known from Saudi Arabia, Oman and Yemen. New to the UAE.

Camponotus nylanderi Emery, 1921
Specimens examined: Wadi Maidaq, 5.iii.2005, CAC.
Distribution: A European species. New to the UAE.

Camponotus oasium Forel, 1890 Plates 86–87
Specimens examined: Baynunah, iii.1995, CAC. N of Ruwais, 21.iii.1995, leg. D. Agosti. Medinat Zayed, iii.1995, CAC.
Distribution: North African species. First recorded from the UAE (Um az-Zimul) by Collingwood & Agosti (1996). In the Arabian Peninsula also known from Saudi Arabia and Oman.

Camponotus sericeus (Fabricius, 1798)
Specimens examined: Remah, iii.1995, CAC. Sharjah Desert Park, 6.x.2004, AvH; 14.x.2004, AvH.
Distribution: African species, widespread in the Arabian Peninsula. Walker & Pittaway (1987) show the distribution map of *C. sericeus* extending into the UAE.

Camponotus thoracicus (Fabricius, 1804) Plates 88–89
Specimens examined: Ruwais, 25.iii.1995, leg. D. Agosti. Al-Wathba Wetland Reserve, 14.iii.2005, CAC.
Distribution: North African species, first recorded from the UAE (Baynunah) by Collingwood & Agosti (1996). In the Arabian Peninsula also known from Kuwait, Saudi Arabia, Oman and Yemen.

Camponotus xerxes Forel, 1904
Specimens examined: Al-Ain, iii.1995, CAC. Sharjah Desert Park, 25.i–22.ii.2005, LT, AvH; 3.iii.2005, CAC.
Distribution: Ranges from Central Asia to the Middle East. First recorded from the UAE by Wingate (1992). Also recorded from Merawah Island (Gillett & Gillett, 2002). In the Arabian Peninsula also known from Kuwait, Saudi Arabia and Oman.

Cataglyphis abyssinicus (Forel, 1904)
Specimens examined: Al-Ain zoo, 13.iii.2005, CAC. Ghalilah, 8.iii.2005, CAC. Sharjah Desert Park, 21–29.iii.2005, LT, AvH.
Distribution: Described from Ethiopia, also recorded from Sudan. In the Arabian Peninsula known from Saudi Arabia, Oman and Yemen. New to the UAE.

Cataglyphis acutinodis Collingwood & Agosti, 1996
Specimens examined: NARC, near Sweihan, 14.iii.2005, CAC. Sweihan, iii.1995, CAC.
Distribution: Described from Yemen. Recorded from Abu Dhabi by Tigar & Osborne (1999).

Plates 86–87. *Camponotus oasium* Forel, from N of Ruwais. (Photographs by D. Agosti)

Plates 88–89. *Camponotus thoracicus* (Fabricius), from Ruwais. (Photographs by D. Agosti)

Cataglyphis adenensis (Forel, 1904) Plates 90–91
Specimens examined: Hatta-Khor Kalba, 12.iii.2005, CAC. Ruwais, 25.iii.1995, leg. D. Agosti. Al-Wathba Wetland Reserve, 14.iii.2005, CAC.
Distribution: Described from Aden in Yemen, also known from Kuwait and Oman. New to the UAE.

Cataglyphis arenarius Finzi, 1940 Plates 92–93
Specimens examined: Ghalilah, 8.iii.2005, CAC. 7 km S of al-Jazirat al-Hamra, 9.x.2004, AvH. Remah, resthouse, 18.iii.1995, leg. D.Agosti.
Distribution: Described from Algeria. In the Arabian Peninsula known from Oman. New to the UAE.

Cataglyphis auratus Menozzi, 1932
Specimens examined: Sharjah Desert Park, 29.iii–6.iv.2005, LT, AvH. In *Zygophyllum* desert, iii.1995, CAC.
Distribution: Described from Sudan. In the Arabian Peninsula known from Saudi Arabia. New to the UAE.

Cataglyphis cana Santschi, 1925
Specimens examined: Al-Wathba Wetland Reserve, 14.iii.2005, CAC.
Distribution: Described from Morocco. New to the UAE.

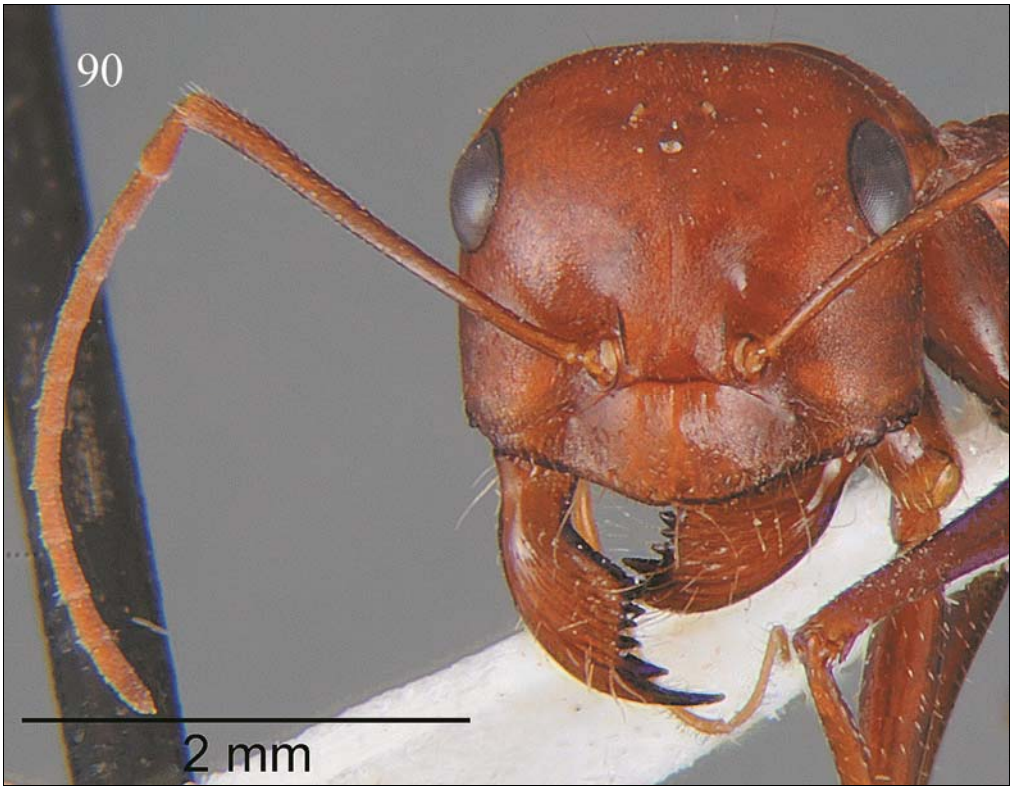
Cataglyphis cinnamomeus (Karawaiew, 1910)
Specimens examined: NARC, near Sweihan, 14.iii.2005, CAC. Sweihan, iii.1995, CAC.
Distribution: Described from Central Asia, occurring from Afghanistan to Tunisia. Recorded from Abu Dhabi by Tigar & Osborne (1999). In the Arabian Peninsula also known from Saudi Arabia.

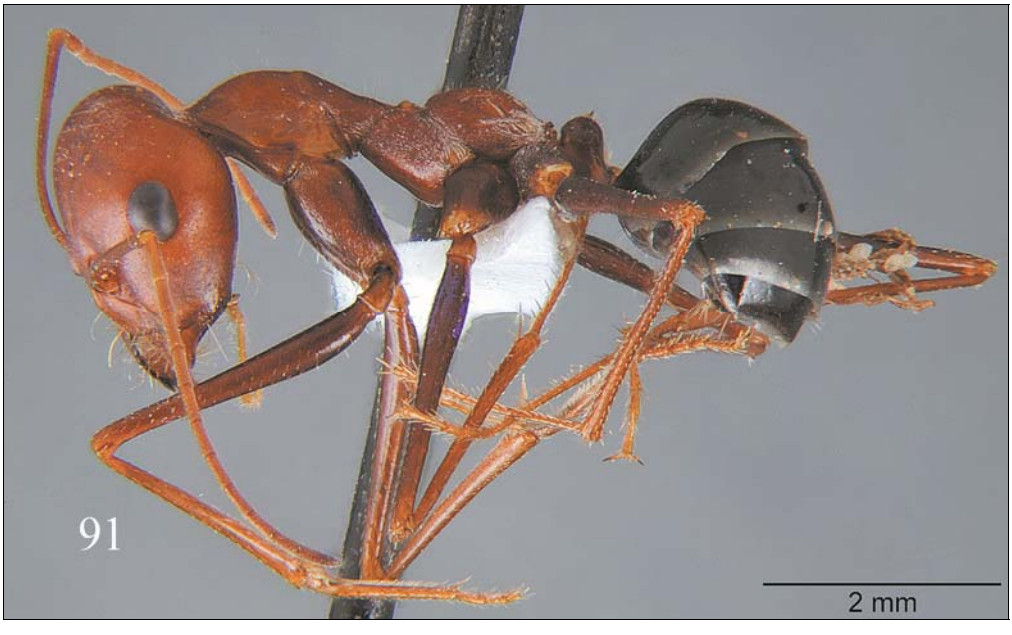
Cataglyphis emmae (Forel, 1909)
Specinens examined: Medinat Zayed, iii.1995, in pitfall trap, CAC. Sweihan, in park, iii.1995, CAC.
Distribution: Described from Algeria. In the Arabian Peninsula known from Saudi Arabia. New to the UAE.

Cataglyphis flavobrunneus Collingwood & Agosti, 1996 Plates 94–95
Specimens examined: Sweihan, iii.1995, CAC. NARC, near Sweihan, 23.iii.1995, leg. D. Agosti; 14.iii.2005, CAC.
Distribution: Described from Oman, Saudia Arabia, UAE and Yemen (Collingwood & Agosti, 1996). First recorded from the UAE by Tigar & Collingwood (1993, as *Cataglyphis flavobrunneus* MS). Also recorded by Tigar & Osborne (1999) and Gillett & Howarth (2004).

Cataglyphis isis Forel, 1913
Specimens examined: Al-Ain zoo, 13.iii.2005, CAC.
Distribution: Recorded from Egypt to Afghanistan. In the Arabian Peninsula known from Saudi Arabia and Oman. New to the UAE.

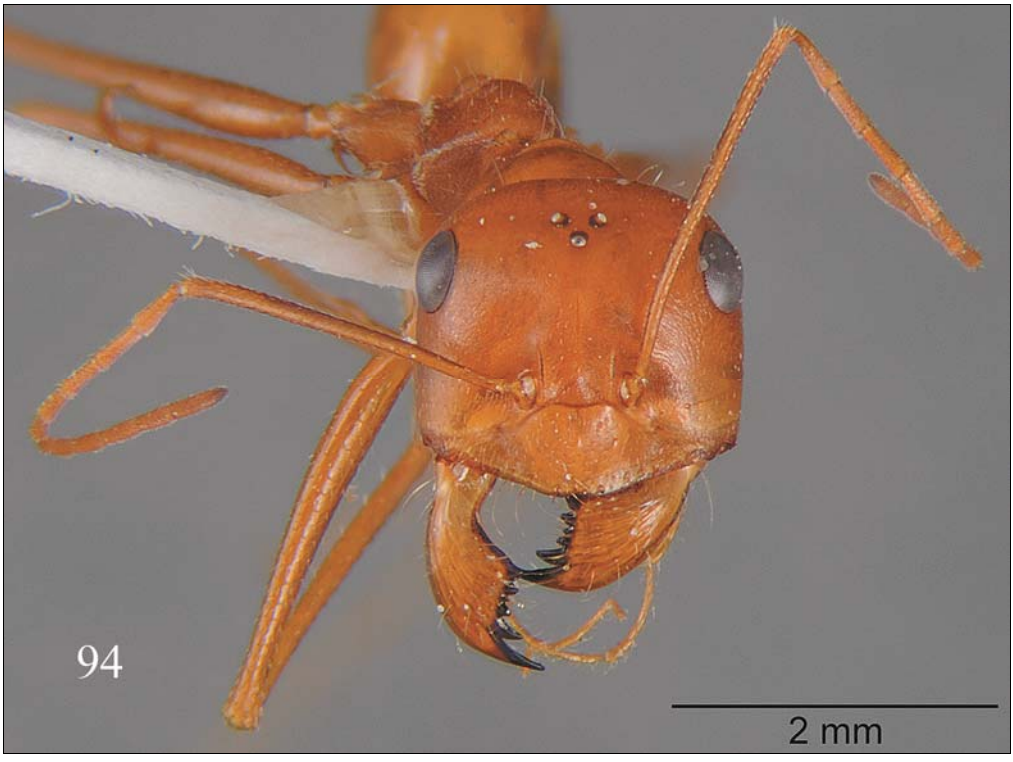
Cataglyphis laevior Santschi, 1929
Specimens examined: Baynunah, iii.1995, leg. B. Tigar. Sharjah Desert Park, 5–6.x.2004, AvH.
Distribution: First recorded from the UAE by Collingwood & Agosti (1996).





Plates 90–91. *Cataglyphis adenensis* (Forel) from Ruwais. (Photographs by D. Agosti)

Plates 92–93. *Cataglyphis arenarius* Finzi from Remah. (Photographs by D. Agosti)



Plates 94–95. *Cataglyphis flavobrunneus* Collingwood & Agosti from NARC, near Sweihan. (Photographs by D. Agosti)

Cataglyphis laylae Collingwood **nov. spec.** Plates 96–103

Cataglyphis desertorum Forel, 1894, teste Collingwood, 1985; unavailable name according to Agosti (1990).

Specimens examined: Holotype: 1☿, United Arab Emirates, al-Ain [24°13'N 55°46'E], iii.1995, leg. C.A. Collingwood (MHNG). Paratypes: 3☿, al-Ain zoo, 13.iii.2005, CAC. 1☿, Remah, 9.iii.1995, CCA. 3☿, Remah, resthouse, 250 m, irrigated sand dune [24°10'37"N 55°18'6"E], 18.iii.1995, leg. D. Agosti. 6☿, Remah, resthouse, 250 m, irrigated sand dune, nest with one entrance, [24°10'37"N, 55°18'6"E], 18.iii.1995, leg. D. Agosti. 1☿, Sharjah Desert Park, 5–6.x.2004, AvH; 1☿, 3.iii.2005, CAC. 1☿, al-Za'aba, 100 m, sandy soil with *Rhaisa stricta* [23°43'20"N, 55°33'49"E], 22.iii.1995, leg. D. Agosti.

Description: A large worker from al-Ain was selected as holotype. The measurements are as follows: total length 8.40; head width 3.60; head length 4.20; scape length 3.84; funicular segment I 0.40; funicular segment II 0.23; petiole length 1.10; petiole width 0.72. Colour dark reddish brown. There are no exterior hairs on the scapes or hind tibia. The gaster, petiole and propodeum have dorsal hairs.

Remarks: This species thought to correspond with *C. desertorum* has to be described as a new species. In fact it is one of the commonest *Cataglyphis* in southern Arabia. The main distinguishing feature compared with other dark *Cataglyphis* is the slender petiole, which has the anterior face more sloped than in other similar species such as *C. niger* (André, 1882) and *C. savignyi* (Dufour, 1862).

Biology: *Cataglyphus laylae* nov. spec. does not appear to occur in open sandy desert and is most abundant in disturbed habitats such as man-developed plantations and open cultivated fields.

Distribution: This species was recorded by Collingwood (1985) as *C. desertorum* from Saudi Arabia and Oman and as *Cataglyphis* spec. by Collingwood & Agosti (1996).

Etymology: The new species is named after a village settlement called "Layla", just north of Riyadh (Saudi Arabia) in the area where the author (CAC) first encountered it in numbers in an *Acacia* plantation.

Cataglyphis lividus (André, 1881)

Specimens examined: Sharjah Desert Park, 3.iii.2005, CAC. Al-Wathba Wetland Reserve, 14.iii.2005, CAC.

Distribution: Middle East and North Africa. Already recorded from the UAE by Tigar & Collingwood (1993), Collingwood & Agosti (1996), Tigar & Osborne (1999) and Gillett & Howarth (2004). In the Arabian Peninsula also known from Kuwait, Saudi Arabia, Oman and Yemen.

Cataglyphis minimus Collingwood, 1985

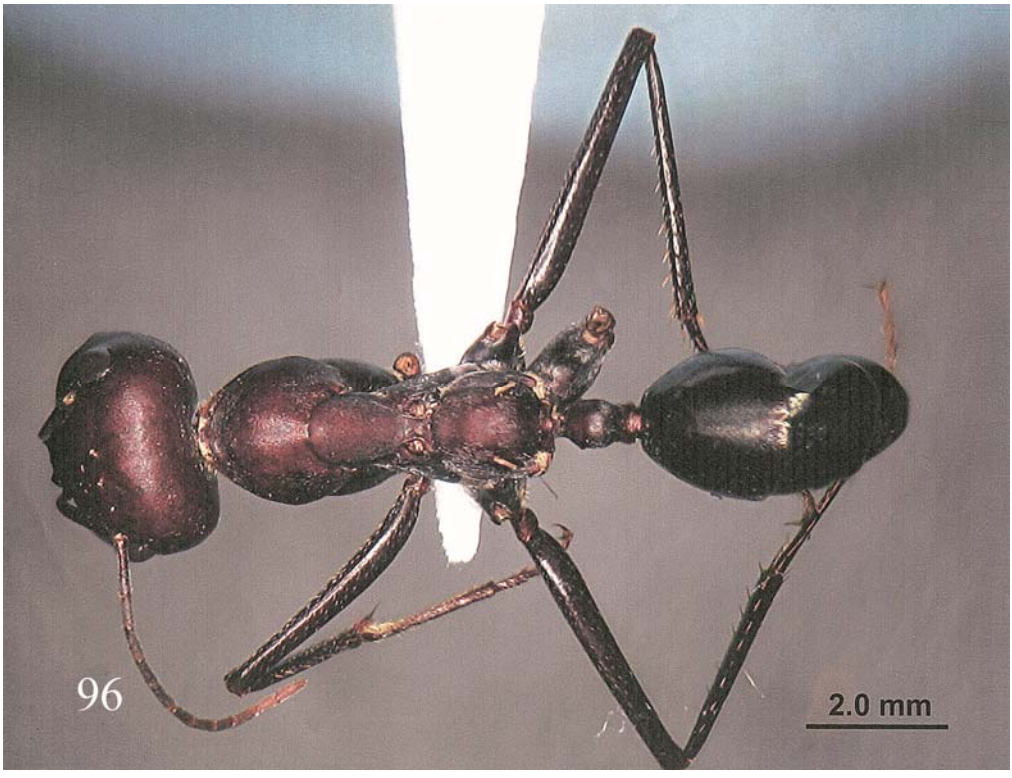
Specimens examined: NARC, near Sweihan, 14.iii.2005, CAC. Ghalilah, 8.iii.2005, CAC. Al-Wathba Wetland Reserve, 14.iii.2005, CAC.

Distribution: Described from Saudi Arabia. Recorded from Ras Ghanada by Tigar & Collingwood (1993) and by Collingwood & Agosti (1996).

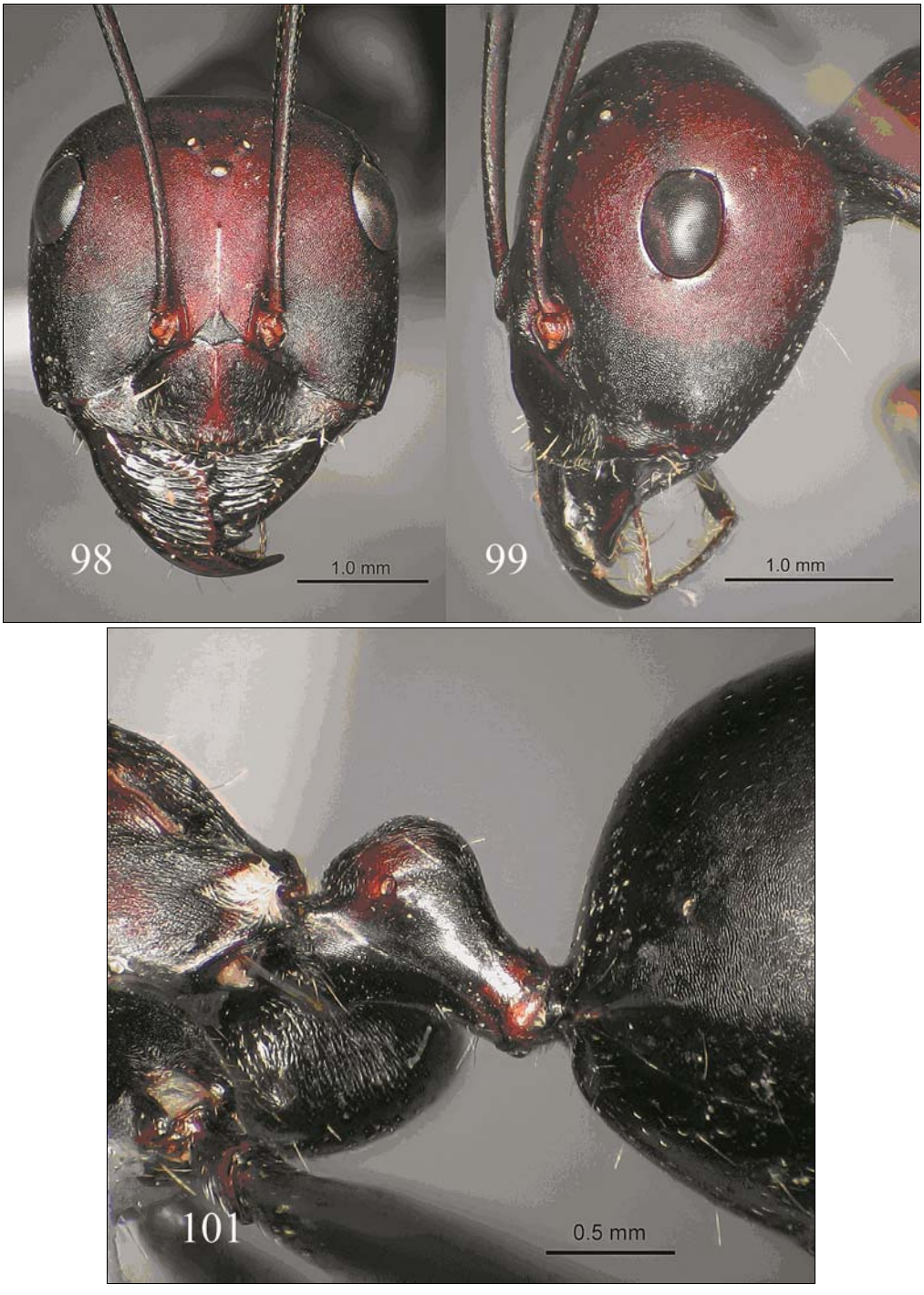
Cataglyphis niger (André, 1881)

Specimens examined: Wadi Safad, 26.xii.2005–2.i.2006, WT, AvH.

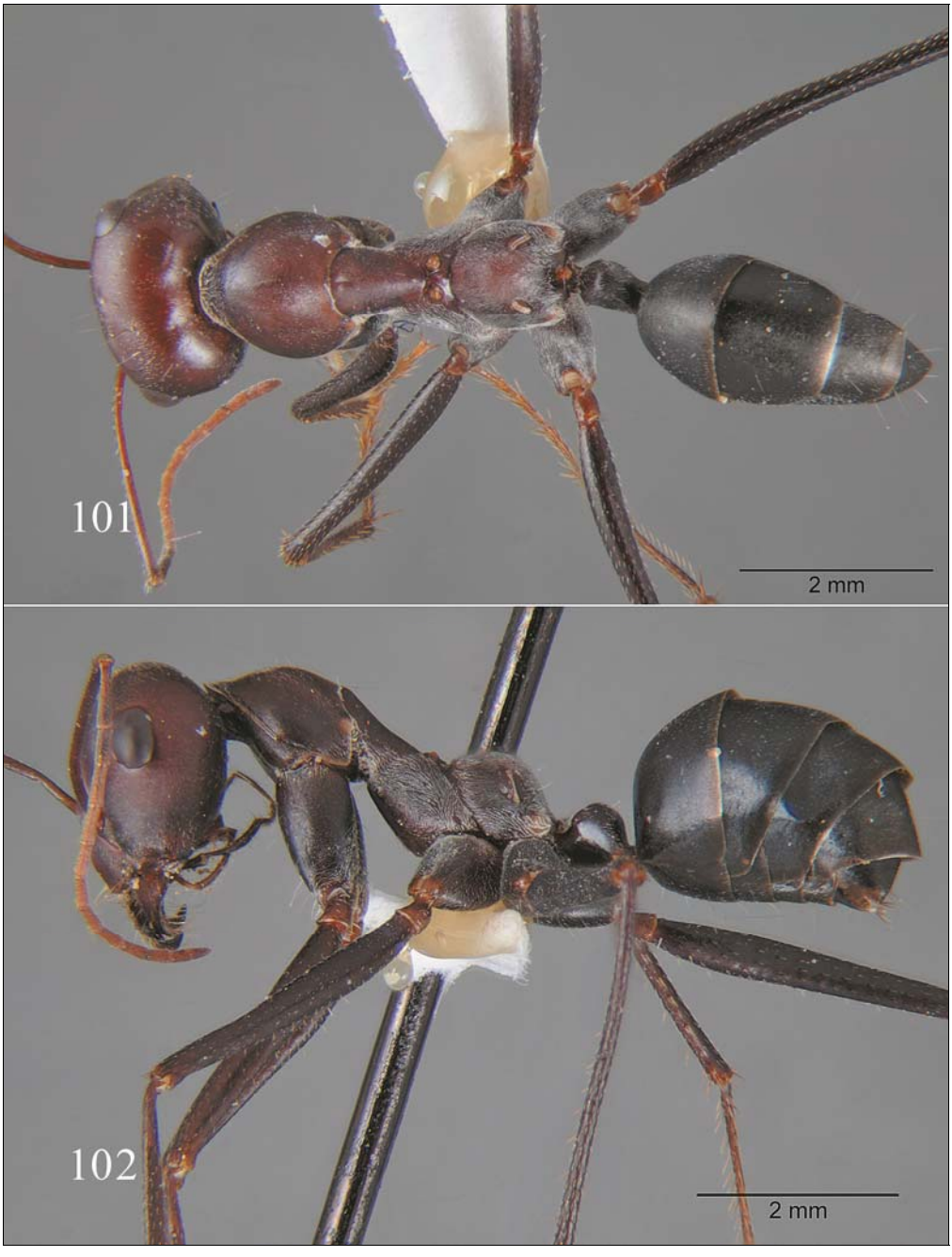
Distribution: Especies from the Middle East. Recorded from the UAE by Wingate (1992), Tigar & Collingwood (1993) and Gillett & Gillett (2002, from Merawah Island). Walker & Pittaway (1987) show the distribution map of *C. niger* extending into the UAE.



Plates 96–97. *Cataglyphis laylae* Collingwood nov. spec., holotype. 96: Habitus, dorsally; 97: Habitus, laterally. (Photographs by P.J. Attawell)



Plates 98–100. *Cataglyphis laylae* Collingwood nov. spec., holotype. 98: Head, dorsally; 99: Head, laterally; 100: Mid-body. (Photographs by P.J. Attawell)



Plates 101–102. *Cataglyphis laylae* Collingwood nov. spec., paratype from al-Za'aba. 101: Lateral view; 102: Propodeum and petiole. (Photographs by D. Agosti).

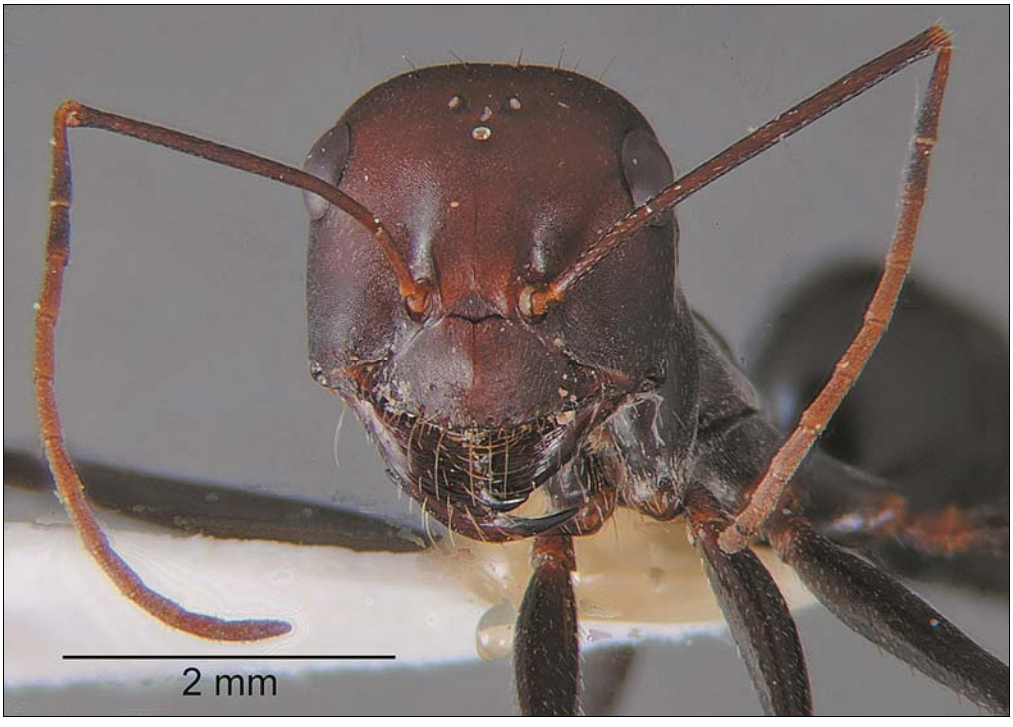


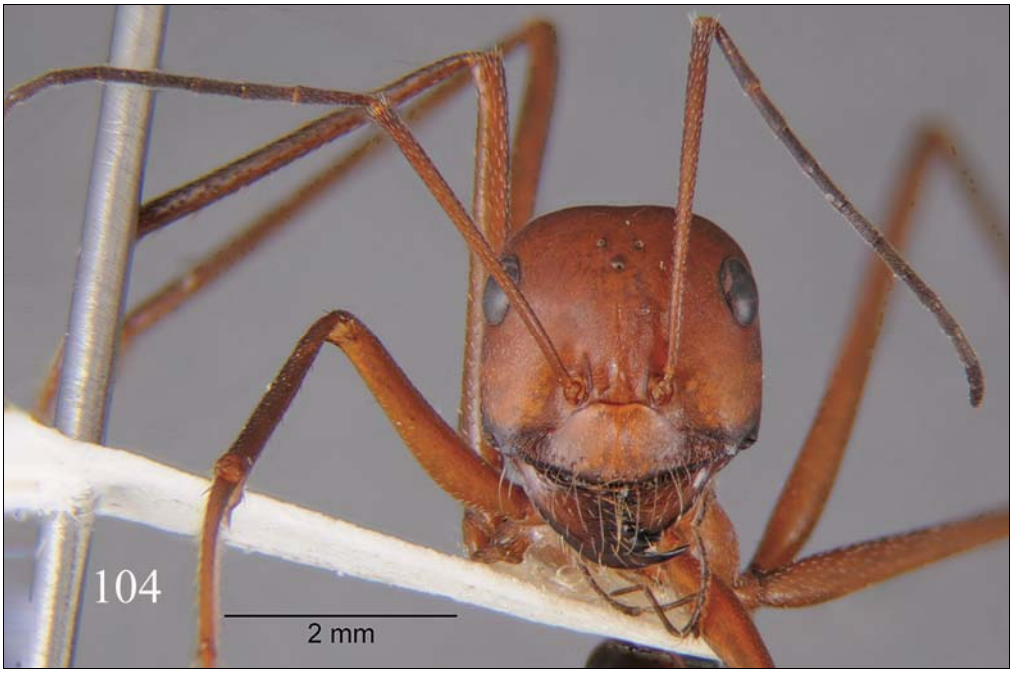
Plate 103. *Cataglyphis laylae* Collingwood nov. spec., paratype from al-Za'aba, head in dorsal view. (Photograph by D. Agosti)

Cataglyphis nodus (Brullé, 1832)
Specimens examined: Al-Ain zoo, 13.iii.2005, CAC.
Distribution: European species, the largest European *Cataglyphis*. New to the UAE.

Cataglyphis ruber (Forel, 1903)
Specimens examined: Al-Wathba Wetland Reserve, 14.iii.2005, CAC.
Distribution: Described from Algeria, occurring along the southern border of the Mediterranean. In the Arabian Peninsula known from Saudi Arabia and Oman. New to the UAE.

Cataglyphis sabulosus Kugler, 1981
This species was described from Egypt and Palestine. Recorded from the UAE by Tigar & Collingwood (1993), Collingwood & Agosti (1996), Tigar & Osborne (1999) and Gillett & Howarth (2004). Also known from Saudi Arabia and Oman. No new collections.

Cataglyphis savignyi (Dufour, 1862)
Specimens examined: Sharjah Desert Park, 3.iii.2005, CAC.
Distribution: Recorded from countries at the northern fringe of the Sahara desert. In the Arabian Peninsula known from Oman and Yemen. New to the UAE.



Plates 104–105. *Cataglyphis urens* Collingwood, 1985, from Remah. (Photographs by D. Agosti)

Plate 106. *Cataglyphis viaticoides* (André) from S of Abu Dhabi (Photograph by D. Agosti)

Cataglyphis urens Collingwood, 1985 Plates 104–105

Specimens examined: Remah, resthouse, 250 m, irrigated sand dune [24°10'37"N 55°18'6"E], 18.iii.1995, leg. D. Agosti. Sharjah Desert Park, 3.iii.2005, CAC.

Distribution: Described from Saudi Arabia and Oman. Recorded from Madinat Zayed and Merawah Island by Collingwood & Agosti (1996).

Cataglyphis viaticoides (André, 1881) Plates 106–107

Specimens examined: S of Abu Dhabi, 24.15N 5429E, 24.iii.1995, leg. D. Agosti.

Distribution: This species was described from Lebanon; also known from Turkey. New to the UAE.

Lepisiota elegantissima Collingwood & van Harten **nov. spec.** Plates 108–109

Specimens examined: Holotype: ☿, United Arab Emirates, Wadi Maidaq [25°18'N 56°07'E], 26.x–9.xi.2006, in yellow and white water traps, leg. A. van Harten (NHML). Paratypes: 5☿, same data as holotype but in Liverpool Museum; 1☿, same data but 15–31.x.2010. Three workers collected from Malaise trap at Wadi Wurayah, 18–25.iii.2007, are in alcohol and were not included in the type series.

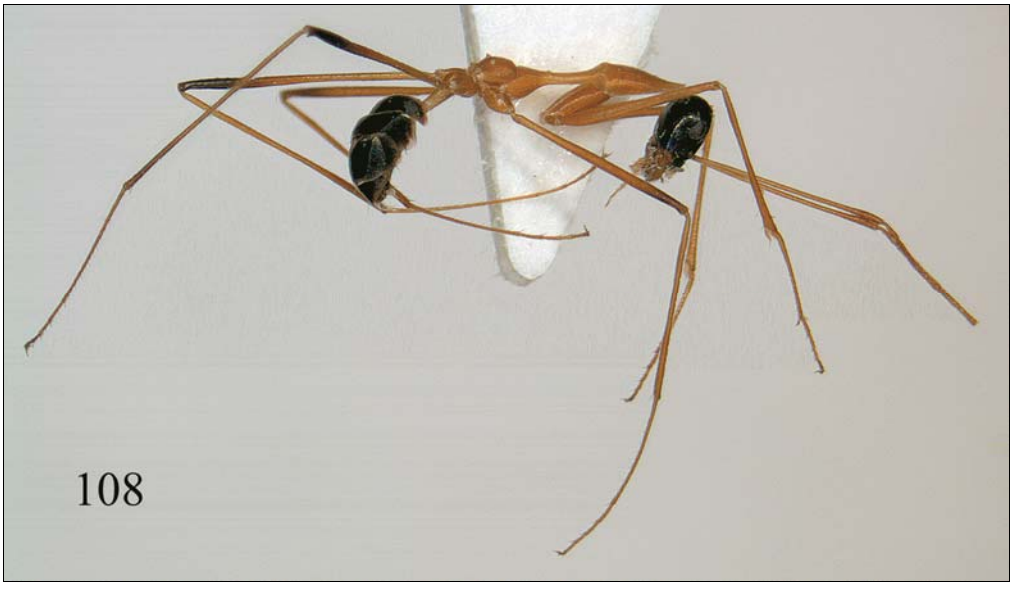
Description: Head and gaster black, midbody and petiole yellowish brown. Legs and antennae yellow, the apical parts of mid and hind femora are suffusedly blackish. Surface sculpture dull, finely reticulate. Petiole long with very short blunt lateral processes (teeth). Propodeum

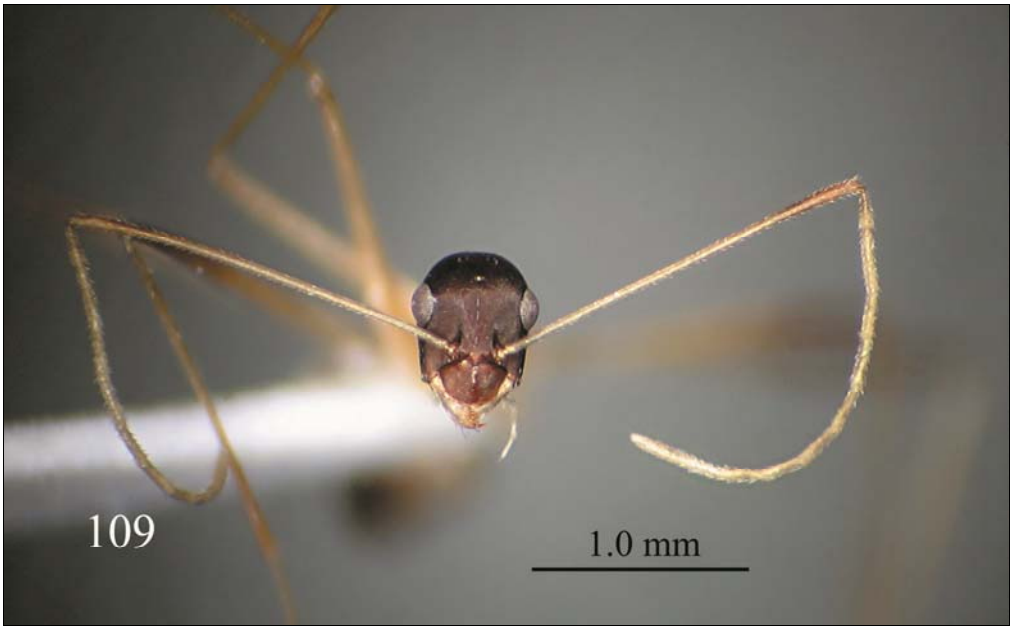
Plate 107. *Cataglyphis viaticoides* (André) from S of Abu Dhabi (Photograph by D. Agosti)

with a pair of fine upright teeth. Mesonotum tube-like, very thin, narrow and long relative to pronotum and propodeum.
Measurements (in mm): Total length 4.25–4.60; head length 0.80–0.82; head width 0.46–0.61, scapus length 2.0, eye diameter 0.23, petiole width 0.16; petiole length 0.56; propodeal teeth 0.09; mesonotal width 0.16; mesonotal length 0.24; hind tibia 2.04; pronotum 0.90 long, 1.46 wide. Scape index 4.44 (excessively long in comparison to other species). No dorsal hairs except for a few on clypeus and some very short hairs on petiole.
Differential diagnosis: An elegant elongate species with long legs and antennae, differing from *L. arenaria* and *L. longinoda* by its blunt petiole and long narrow mid-body.
Etymology: The species epiphet *elegantissima* is derived from 'elegans', Latin for elegant, meaning most elegant, referring to the shape of this very beautiful species.

Lepisiota gracilicornis (Forel, 1892)
Specimens examined: 7 km S of al-Jazirat al-Hamra, 9.x.2004, AvH.
Distribution: Sudan, Eritrea, Ethiopia. New to the UAE.

Lepisiota karawaiewi (Kuznetsov-Ugamsky, 1929)
Specimens examined: Al-Aslab, 19.ix.2005, at light, AvH. Sharjah, 8–9.x.2004, AvH. Sharjah Desert Park, 14.x.2004, AvH.





Plates 108–109. *Lepisiota elegantissima* Collingwood & van Harten nov. spec. 108: Holotype, lateral view (Photograph by C. van Achterberg); 109: Paratype, frontal view (Photograph by P.J. Attewell)

Distribution: Common in the southern Greek islands. Also known from Kuwait. New to the UAE.

Lepisiota nigra (Dalla Torre, 1893)
Specimens examined: Al-Wathba Wetland Reserve, 14.iii.2005, CAC.
Distribution: Occurs in south-eastern Europe. In the Arabian Peninsula known from Oman. New to the UAE.

Lepisiota nigrescens Karavaiew, 1912
Distribution: First recorded from the UAE by Tigar & Collingwood (1993); also recorded by Collingwood & Agosti (1996). No specimens have been collected recently.

Lepisiota opaciventris (Finzi, 1936)
Specimens examined: Sharjah, 8–9.x.2004, AvH. Sharjah Desert Park, 14.x.2004, AvH. Wadi Safad, 26.xii.2005–2.i.2006, WT, AvH.
Distribution: Only known from Egypt, Israel, Saudi Arabia, Oman and Yemen. New to the UAE.

Myrmoteras cf. ***indica*** Moffett, 1985
Specimens examined: Sharjah Desert Park, males, 29.iii–6.iv.205, LT, AvH.
Distribution: Probably an Indian species, introduced with imported plant material.

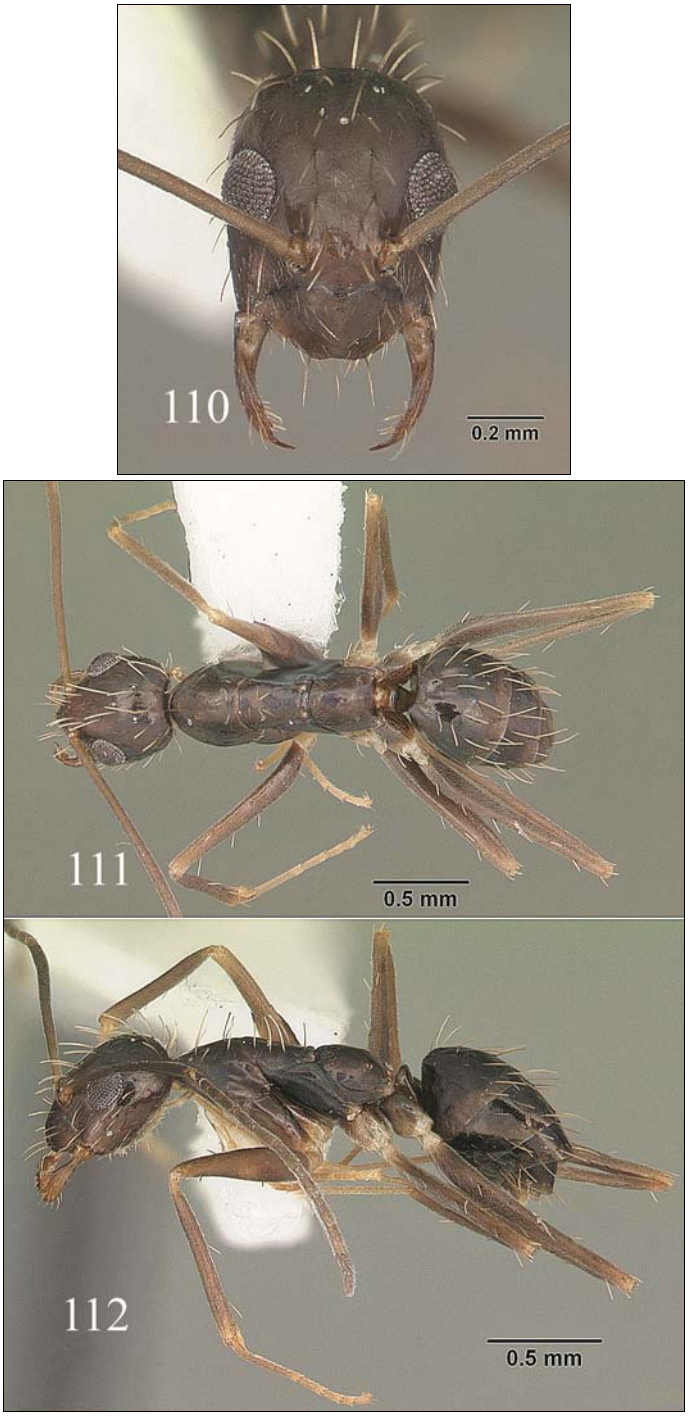
Paratrechina flavipes (F. Smith, 1874)
Specimens examined: 7 km S of al-Jazirat al-Hamra, 9.x.2004, AvH. Sharjah, 10–17.x.2004, AvH. Sharjah Desert Park, 5–6.x.2004, AvH.
Distribution: Native to East Asia, but widely spread. Recorded from the UAE by Collingwood & Agosti (1996) and Collingwood, Tigar and Agosti (1997). Also known from Oman.

Paratrechina jaegerskjoeldi Mayr, 1904
Specimens examined: Abu Dhabi, iii.1995, CAC. Al-Ain, iii.1995, CAC. Sharjah Desert Park, 14.x.2004, AvH.
Distribution: Tramp species, abundant in many parts of the Middle East. Recorded from Abu Dhabi, al-Ain and Khor Kalba by Collingwood, Tigar & Agosti (1997). Also known from Saudi Arabia, Oman and Yemen.

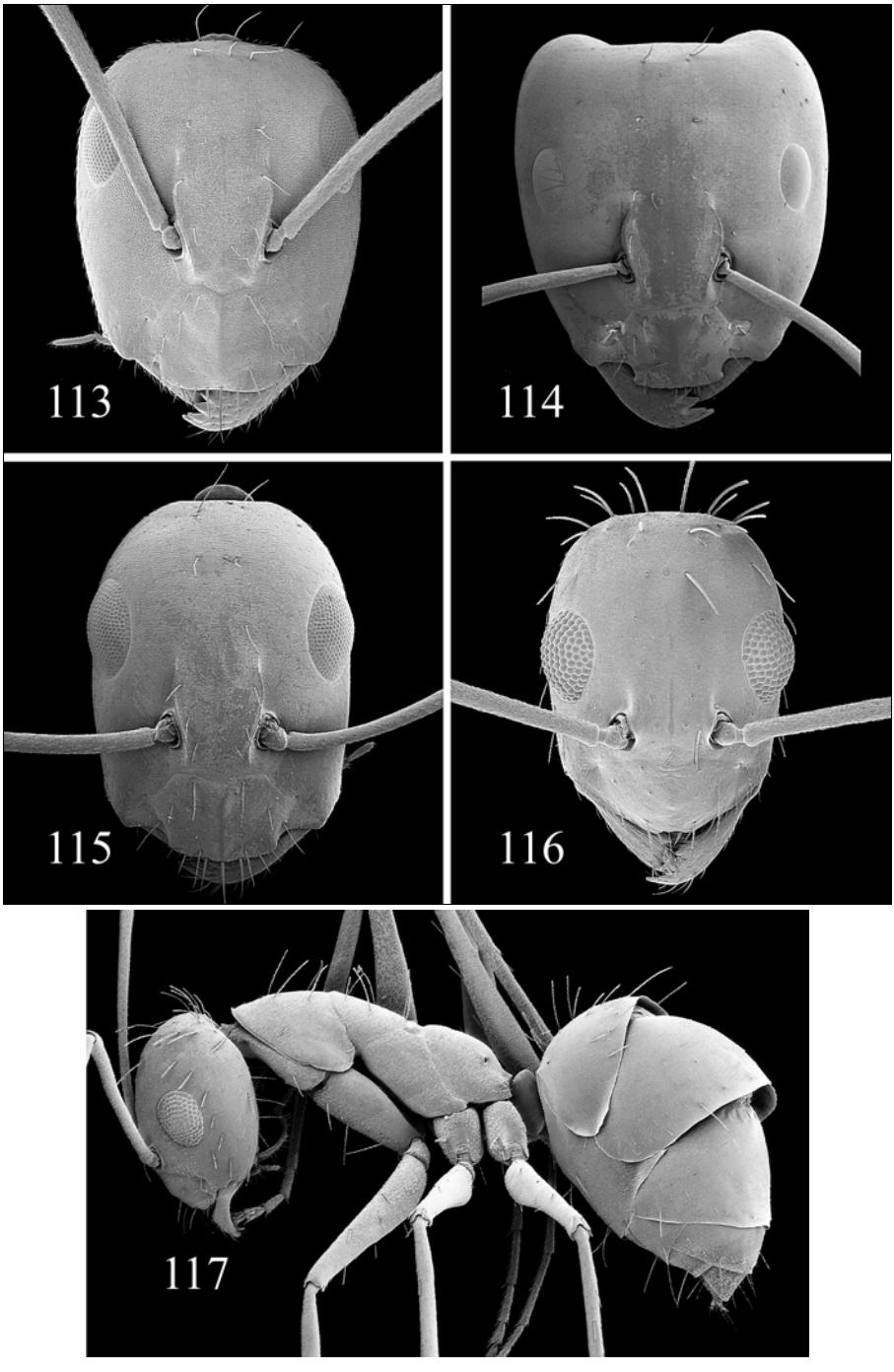
Paratrechina longicornis (Latreille, 1802) Plates 110–110, 116, 117
Specimens examined: Al-Ain, iii.1995, CAC. Al-Madam, iii.1995, CAC. Ruwais, iii.1995, CAC. Sharjah, 8–17.x.2004, AvH. Sharjah Desert Park, 5–6.x.2004, AvH; 14.x.2004, AvH.
Distribution: The 'longhorn crazy ant' is possibly the most widespread of all tramp species (Wetterer, 2008). First recorded from the UAE by Collingwood, Tigar and Agosti (1997). Also known from Saudi Arabia, Oman and Yemen.

Paratrechina vividula (Nylander, 1846)
Specimens examined: Al-Ain zoo, 13.iii.2005, CAC. Sharjah Desert Park, 5–6.x.2004, AvH.
Distribution: Widespread tramp species. New to the UAE.

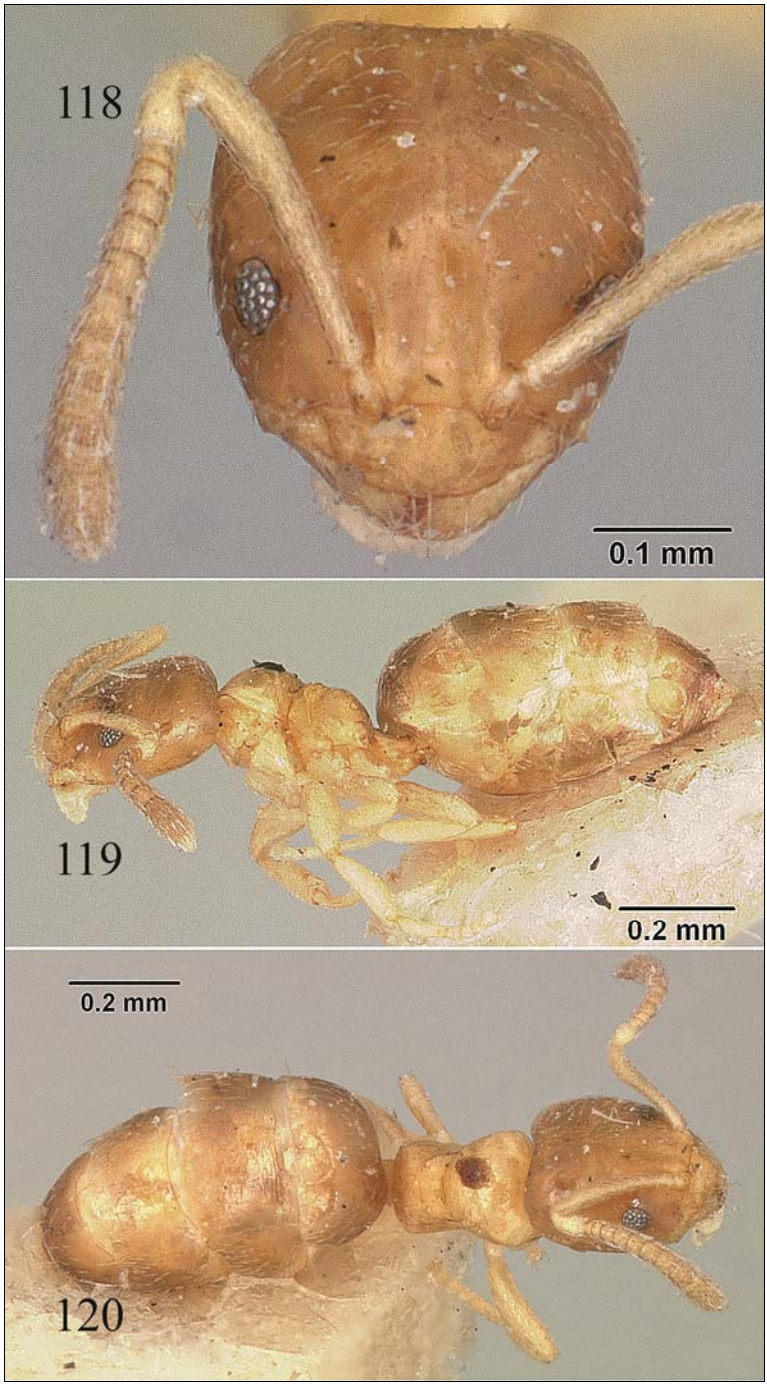
Plagiolepis exigua Forel, 1894 Plates 118–120
Specimens examined: 7 km S of al-Jazirat al-Hamra, 9.x.2004, AvH; Al-Wathba Wetland Reserve, 14.iii.1995, CAC.
Distribution: Cosmopolitan species. In the Arabian Peninsula known from Saudi Arabia and Yemen. New to the UAE.



Plates 110–112. *Paratrechina longicornis* (Latreille). (Photographs by A. Nobile, © www.antweb.org)



Plates 113–117. 113–116. Heads. 113: *Camponotus acvapimensis* Mayr; 114: *Camponotus atlantis* Forel, small worker; 115: *Camponotus atlantis* Forel, large worker. 116: *Paratrechina longicornis* (Latreille); 117: *Paratrechina longicornis* (Latreille), habitus. (Photograph © Fauna of Arabia)



Plates 118–120. *Plagiolepis exigua* Forel. (Photographs by M. Esposito, © www.antweb.org)

Plates 121–122. *Polyrhachis lacteipennis* F. Smith from Oman. (Photographs by D. Agosti)

Polyrhachis lacteipennis F. Smith, 1858 Plates 121–122

Specimens examined: Abu Dhabi, in park, iii.1995, CAC. Sharjah, 8–9.x.2004, AvH. Sharjah Desert Park, 5–6.x.2004, AvH. Al-Wathba Wetland Reserve, 14.iii.2005, CAC.

Distribution: Recorded from the Indian subcontinent and the Middle East. In the Arabian Peninsula known from Saudi Arabia, Oman and Yemen. New to the UAE.

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