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Additions to the ant fauna (Hymenoptera: Formicidae) of Oman: an updated list, new records and a description of two new species

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ABSTRACT. An updated list of ant species (Formicidae) known from Oman is provided, including both published records and recently collected material, and bringing the total number to 123 species belonging to 24 genera and four subfamilies. In the present study thirty-four ant species were collected from Oman during expeditions in 2016 and 2017. Ten ant species are recorded for the first time in Oman : *Cardiocondyla breviscapa* Seifert, 2003, *C. mauritanica* Forel, 1890, *C. yemeni* Collingwood & Agosti, 1996, *Erromyrma latinodis* (Mayr, 1872), *Hypoponera abeillei* (André, 1881), *Lepisiota opaciventris* (Finzi, 1936), *Monomorium dichroum* Forel, 1902, *Pheidole parva* Mayr, 1865, *Plagiolepis boltoni* Sharaf, Aldawood & Taylor, 2011, and *Tetramorium lanuginosum* Mayr, 1870. The genus *Aphaenogaster* is recorded for the first time from Oman, and two new species of *Aphaenogaster* are described based on the worker caste: *A. sarae* sp. n. and *A. asmaae* sp. n. The first key to the Arabian *Aphaenogaster* is presented. The genus *Erromyrma* Bolton & Fisher, 2016 is recorded for the first time from Oman and the Arabian Peninsula by the sole species *E. latinodis* (Mayr, 1872). The queen caste of *Pl. boltoni* Sharaf, Aldawood & Taylor, 2011 is also described for the first time from Masfat Al-Ebreien, Oman. New distributional records are given with biological notes for species when available.

Keywords: Middle East, Arabian Peninsula, Kingdom of Saudi Arabia, Asir Province, Palearctic region, invasive species, key, *Erromyrma, Aphaenogaster*.

INTRODUCTION

Oman is situated on the southeastern coast of the Arabian Peninsula and has a diverse fauna (Greathead 1980, Wiltshire 1980, Larsen 1977) and flora (Patzelt 2014). In 1907, Forel described the first ant from Muscat, Oman, *Tetramorium calidum*. Several decades later, the first myrmecological paper on the ant fauna of the Kingdom of Saudi Arabia (KSA) (Collingwood 1985) described a second species from Oman, *Cataglyphis urens*. The study of the Formicidae of the Ara-

bian Peninsula (Collingwood & Agosti, 1996) included 13 new species from Oman, *Camponotus gallagheri* Collingwood & Agosti, 1996, *Cataglyphis flavobrunneus* Collingwood & Agosti, 1996, *Lepisiota dhofara* Collingwood & Agosti, 1996, *Monomorium acutinode* Collingwood & Agosti, 1996, *M. aeyade* Collingwood & Agosti, 1996, *M. baushare* Collingwood & Agosti, 1996 (junior synonym of *M. exiguum* Forel, 1894), *M. brunneolucidulum* Collingwood & Agosti, 1996, *M. dirie* Collingwood & Agosti, 1996, *M. gallagheri* Collingwood & Agosti, 1996, *M. marmule* Collingwood & Agosti, 1996, *M. mintiribe* Collingwood & Agosti, 1996 (junior synonym of *Monomorium subopacum* (Smith, 1858)), *M. wahibiense* Collingwood & Agosti, 1996, and *Solenopsis omana* Collingwood & Agosti, 1996. Recently, three contributions have been published on the Omani ant fauna including descriptions of three new species, *Technomyrmex montaseri* Sharaf, Collingwood & Aldawood, 2011 (Sharaf et al., 2011a), *Lepisiota omanensis* Sharaf & Monks 2016 (Sharaf et al., 2016), and *Anochetus annetteae* Sharaf, 2017 (Sharaf et al., 2017b).

In the present work, new material from Oman was collected during collecting expeditions in April, 2016 and January 2017. Thirty-four ant species were collected, and ten of these are new species records for Oman, including two new species of the genus *Aphaenogaster*. This brings the current total of known ant species recorded from Oman to 123.

MATERIAL AND METHODS

Two insect collecting expeditions were carried out in Oman from 02–09 April 2016 and from 17–21 January 2017. One of us (MS) visited 26 different sites that included urban areas, date palm plantations, relatively undisturbed valleys, mountainous habitats, and agricultural production sites. Specimens were collected using direct hand picking and sifting of soil and leaf litter.

The species names follow the online catalogue of ants of the world (Bolton, 2017) available on www.AntCat.org. Digital color images of lateral and dorsal views of the entire body and full-face views of the head of each species were created using a Leica DFC450 digital camera with a Leica Z16 APO microscope and LAS (v3.8) software. These images are also available online on AntWeb (www.AntWeb.org) and are accessible using the unique identifying specimen code.

Measurements and Indices (Figs. 1 a–d)**:** Follow standards of Borowiec & Salata (2014). All measurements are in millimeters.

Measurements.

BL Body Length; sum of lengths of head, mesosoma, waist and gaster.

CW Clypeus Width; width of posterior extension of clypeus measured at midpoint of antennal sockets.

DPSB Distance between outer margins of spines measured at the base.

DPST Distance between outer margins of propodeal spines measured at the tips.

EL Eye Length; measured along the maximum diameter of the eye.

FLW Frontal Lobes Width; maximum width between external borders of the frontal lobes.

HL Head Length; measured in a straight line from midpoint of anterior clypeal margin to midpoint of posterior margin of head, in full-face view.

HTL Hind Tibia Length; maximum length of hind tibia.

HW Head Width; width of head at anterior margin of eyes in full-face view.

ML Mesosoma Length; measured as diagonal length from anterior end of the neck shield to posterior margin of propodeal lobe.

PH Petiole Height; maximum height of petiole in lateral view.

PL Petiole Length; maximum length of petiole in dorsal view.

PNW Pronotum Width; maximum width of pronotum in dorsal view.

PPH Postpetiole Height; maximum height of postpetiole in lateral view.

PPL Postpetiole Length; maximum length of postpetiole in dorsal view.

PPW Postpetiole Width; maximum width of postpetiole in dorsal view.

PSL Propodeal Spine Length; measured from center of propodeal spiracle to top of propodeal spine in lateral view.

PW Petiole Width; maximum width of petiole in dorsal view.

SDL Spiracle to Declivity Length; minimum distance from center of propodeal spiracle to propodeal declivity.

SL Scape Length; maximum straight-line length of scape.

TL Tempora Length; measured from posterior margin of eye to posteromedian margin of head.

Indices

CL Clypeus Index; CW/HW x 100.
EI Eye Index; EL/HW x 100.
FLI Frontal Lobes Index; CW/FLW x100.
HTI Hind Tibia Index; HTL/HW x 100.
MI Mesosoma Index; ML/PNW x 100.
PI1 Petiole Index 1; PL/PH x 100.
PI2 Petiole Index 2; PL/HW x 100.
PPI1 Postpetiole Index 1; PPL/PPH x 100.
PPI2 Postpetiole Index 2; PPL/HW x 100.
PSI Postpetiole/Spine Index; PPH/DPSB x 100.
SI1 Scape Index 1; SL/HL x 100.
SI2 Scape Index 2; SL/HW x 100.
SPI1 Propodeal Spines Index 1; PSL/HW x 100.
SPI2 Propodeal Spines Index 2; PSL/SDL x 100.

All lengths are expressed in millimeters.

Abbreviations

Throughout the text, "w" stands for worker or workers, "s" for soldier, "q" for queen, and "m" for male.

Institutional abbreviations

The collection abbreviations follow Lattke (2000).

CASC California Academy of Sciences Collection, San Francisco, CA, USA.

CWEM The Mackay Collection, the University of Texas at El Paso, USA.

KSMA King Saud University Museum of Arthropods, Plant Protection Department, College of Food and Agriculture Sciences, King Saud University, Riyadh, KSA.

ONHM Oman Natural History Museum, Muscat, Sultanate of Oman.

WMLC World Museum Liverpool, Liverpool, United Kingdom.

RESULTS

Subfamily: Dolichoderinae

***Tapinoma melanocephalum* (Fabricius, 1793)**

Formica melanocephala Fabricius, 1793: 353 (w.), French Guiana. Neotropic.

Material examined: Oman: Muscat, 23.6176°N, 58.49364°E, 81 m, 07.iv.2016, (M. R. Sharaf leg.) (6 w); Alfleh, Qurayat, 23.20460°N, 58.96920°E, 39 m, 08.iv.2016, (M. R. Sharaf leg.) (1 w); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.), (3 w); Alkhoud village, 23.57154°N, 58.12166°E, 63 m, 19.i.2017, (M. R. Sharaf leg.) (5 w); Muscat, KOM, Alraha village, 23.56665°N, 58.17630°E, 74 m, 18.i.2017, (M. R. Sharaf leg.) (8 w); Wadi Fanga, 23.45336°N, 58.11807°E, 166 m, 20.i.2017, (M. R. Sharaf leg.) (4 w) (All in KSMA); Nakhl, 23.38803°N, 57.82937°E, 322 m, 02. iv. 2016, (M. R. Sharaf leg.) (3 w, KSMA; 1 w, CASENT0922277, CASC).

Table 1. Number of species and genera of Formicidae, by subfamily, recorded in Oman.

Subfamilies	Genera	Species
Dolichoderinae	2	3
Formicinae	7	50
Myrmicinae	11	65
Ponerinae	4	5
Total	**24**	**123**

Biological notes: *Tapinoma melanocephalum* occupies a wide range of habitats. This species was found inhabiting leaf litter in public parks where soil was moist due to regular irrigation. It also occurred in leaf litter under date palm trees where the soil was loose and dry. *Tapinoma melanocephalum* was additionally collected from leaf litter under a mango tree. Apparently, this species prefers moist leaf litter that occurs in various habitats.

Geographic range: *Tapinoma melanocephalum* was described from French Guiana, South America and distributed nearly worldwide (Wetterer 2009). This species is known from Oman, KSA (Collingwood 1985), Yemen (Collingwood and Agosti 1996), the United Arab Emirates (UAE) (Collingwood et al. 1997), and the Socotra Archipelago (Collingwood et al., 2004, Sharaf et al., 2017a).

Subfamily: Formicinae

***Camponotus atlantis* Forel, 1890**

Camponotus rubripes r. atlantis Forel, 1890: lxiii (s.w.q.), Tunisia. Palearctic.

Material examined: Oman: Jebel Akhdar, Alain, 23.07279°N, 54.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (6 s, 1 w, KSMA, 1 w, CASENT0922265); Jebel Akhdar, Alain, 23.13662°N, 57.6351°E, 2334 m, 04.iv.2016, (M. R. Sharaf leg.) (2 s, 3 w); Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (1 w); Masfat Elebryein, 23.14178°N, 57.31330°E, 933 m, 21.i.2017, (M. R. Sharaf leg.) (2 w); Alkhoud village, 23.57154°N, 58.12166°E, 63 m, 19.i.2017, (M. R. Sharaf leg.) (2 w) (All in KSMA); Musandan, Khasms, 19.ii.1986, (1 w); Jebel Samhan near Muscat, (C. A. Collingwood leg.) (3 w); Masif Isle, base of Jebel Savarah, 21.ix.1995, (M. Gallagher leg.), (3 w in alcohol) (WMLC).

Biological notes: Many workers of this species were found foraging under a pomegranate tree, *Punica granatum L. (Lythraceae)*. Nest series were also found under rocks where the soil was dry and loose and under a rock at a date palm plantation.

Geographic range: This species was originally described from *Tunisia* and recorded from Oman and Yemen (Collingwood and Agosti 1996), KSA (Collingwood 1985), Socotra Archipelago (Collingwood et al. 2004, Sharaf et al., 2017a), and Iran (Paknia et al. 2008).

***Camponotus sericeus* (Fabricius, 1798)**

Formica sericea Fabricius, 1798: 279, (w.), Senegal. Afrotropic.

Material examined: Oman: Jebel Akhdar, Alain, 23.07279°N, 54.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (2 w, KSMA) (1 w, CASENT0922266, CASC); 23.54333°N, 58.93333°E, 280 m, 06.iv.2016, (A. Polaszek leg.) (2 w, KSMA).

Biological notes: This species was collected nesting under a stone at the edge of a pomegranate field; it was coexisting with *Brachyponera sennaarensis* (Mayr, 1862) in dry soil.

Geographic range: A species originally described from Senegal, Africa and is widely distributed in the Arabian Peninsula including Oman, Kuwait, KSA, Yemen (Collingwood 1985, Collingwood and Agosti 1996), and UAE (Collingwood et al., 2011). *Camponotus sericeus* is also known from Sudan, Egypt, and Israel (Ionescu 2009).

***Cataglyphis holgerseni* Collingwood & Agosti, 1996**

Cataglyphis holgerseni Collingwood & Agosti, 1996: 379, (w.), Israel. Palearctic.

Table 2. Updated list of ant species of Oman, (*) species described from Oman, (+) new records.

Subfamily	species
Dolichoderinae	*Tapinoma melanocephalum* (Fabricius, 1793)
	Tapinoma simrothi Krausse, 1911
	Technomyrmex montaseri Sharaf, Collingwood, Aldawood, 2011
Formicinae	*Camponotus aegyptiacus* Emery, 1915
	Camponotus arabicus Collingwood, 1985
	Camponotus atlantis Forel, 1890
	Camponotus carbo Emery, 1877
	Camponotus fellah Dalla Torre, 1893
	Camponotus foraminosus Forel, 1879
	Camponotus gallagheri Collingwood & Agosti, 1996 (*)
	Camponotus hova Forel, 1891
	Camponotus ilgii Forel, 1894
	Camponotus jizani Collingwood, 1985
	Camponotus flavomarginatus Mayr, 1862
	Camponotus maculatus (Fabricius, 1782)
	Camponotus oasium Forel, 1890
	Camponotus sericeus (Fabricius, 1798)
	Camponotus somalinus André, 1887
	Camponotus thoracicus (Fabricius, 1804)
	Camponotus xerxes Forel, 1904
	Cataglyphis abyssinica (Forel, 1904)
	Cataglyphis acutinodis Collingwood & Agosti, 1996
	Cataglyphis adenensis (Forel, 1904)
	Cataglyphis arenaria Finzi, 1940
	Cataglyphis diehlii (Forel, 1902)
	Cataglyphis holgerseni Collingwood & Agosti, 1996
	Cataglyphis isis (Forel, 1913)
	Cataglyphis flavobrunnea Collingwood & Agosti, 1996
	Cataglyphis livida (André, 1881)
	Cataglyphis nigra (André, 1881)
	Cataglyphis rubra (Forel, 1903)
	Cataglyphis sabulosa Kugler, 1981
	Cataglyphis savignyi (Dufour, 1862)
	Cataglyphis urens Collingwood, 1985 (*)
	Cataglyphis vaucheri (Emery, 1906)
	Lepisiota canescens (Emery, 1897)
	Lepisiota carbonaria (Emery, 1892)
	Lepisiota depilis (Emery, 1897)
	Lepisiota dhofara Collingwood & Agosti, 1996 (*)
	Lepisiota gracilicornis (Forel, 1892)
	Lepisiota longinoda (Arnold, 1920)
	Lepisiota nigra (Dalla Torre, 1893)

Lepisiota obtusa (Emery, 1901)
Lepisiota omanensis Sharaf & Monks, 2016 (*)
Lepisiota opaciventris (Finzi, 1936) (+)
Lepisiota sericea (Forel, 1892)
Lepisiota spinisquama (Kuznetsov-Ugamsky, 1929)
Nylanderia flavipes (Smith, 1874)
Nylanderia jaegerskioeldi (Mayr, 1904)
Paratrechina longicornis (Latreille, 1802)
Plagiolepis boltoni Sharaf, Aldawood & Taylor, 2011 (+)
Plagiolepis pallescens maura Santschi, 1920
Polyrhachis lacteipennis Smith, 1858

Myrmicinae

Aphaenogaster asmaae Sharaf sp. n. *(*)*
Aphaenogaster sarae Sharaf sp. n. (*)
Cardiocondyla breviscapa Seifert, 2003 (+)
Cardiocondyla emeryi Forel, 1881
Cardiocondyla gallagheri Collingwood & Agosti, 1996 (*)
Cardiocondyla mauritanica Forel, 1890 (+)
Cardiocondyla yemeni Collingwood & Agosti, 1996 (+)
Crematogaster acaciae Forel, 1892
Crematogaster aegyptiaca Mayr, 1862
Crematogaster affabilis Forel, 1907
Crematogaster antaris Forel, 1894
Crematogaster delagoensis Forel, 1894
Crematogaster melanogaster Emery, 1895
Crematogaster mimosae Santschi, 1914
Crematogaster oasium Santschi, 1911
Crematogaster senegalensis Roger, 1863
Erromyrma latinodis (Mayr, 1872) (+)
Messor ebeninus Santschi, 1927
Messor foreli Santschi, 1923
Messor galla (Mayr, 1904)
Messor meridionalis (André, 1883)
Messor muscatus Collingwood & Agosti, 1996 (*)
Messor rufotestaceus (Foerster, 1850)
Messor wasmanni Krausse, 1910
Monomorium abeillei André, 1881
Monomorium acutinode Collingwood & Agosti, 1996 (*)
Monomorium aeyade Collingwood & Agosti, 1996 (*)
Monomorium barbatulum Mayr, 1877
Monomorium bicolor Emery, 1877
Monomorium dichroum Forel, 1902 (+)
Monomorium exiguum Forel, 1894
Monomorium brunneolucidulum Collingwood & Agosti, 1996 (*)
Monomorium carbo Forel, 1910

	Monomorium dentigerum (Roger, 1862)
	Monomorium dirie Collingwood & Agosti, 1996 (*)
	Monomorium gallagheri Collingwood & Agosti, 1996 (*)
	Monomorium fezzanense Collingwood & Agosti, 1996
	Monomorium jizane Collingwood & Agosti, 1996
	Monomorium marmule Collingwood & Agosti, 1996 (*)
	Monomorium matame Collingwood & Agosti, 1996 (*)
	Monomorium niloticum Emery, 1881
	Monomorium phoenicum Santschi, 1927
	Monomorium subopacum (Smith, 1858)
	Monomorium suleyile Collingwood & Agosti, 1996
	Monomorium tumaire Collingwood & Agosti, 1996
	Monomorium venustum (Smith, 1858)
	Monomorium wahibiense Collingwood & Agosti, 1996 (*)
	Nesomyrmex angulatus (Mayr, 1862)
	Pheidole katonae Forel, 1907
	Pheidole megacephala (Fabricius, 1793)
	Pheidole parva Mayr, 1865 (+)
	Pheidole rugaticeps Emery, 1877
	Pheidole sculpturata Mayr, 1866
	Pheidole sinaitica Mayr, 1862
	Solenopsis omana Collingwood & Agosti, 1996 (*)
	Tetramorium biskrense Forel, 1904
	Tetramorium caldarium (Roger, 1857)
	Tetramorium calidum Forel, 1907
	Tetramorium depressiceps Menozzi, 1933
	Tetramorium lanuginosum Mayr, 1870 (+)
	Tetramorium sericeiventre Emery, 1877
	Tetramorium chefketi Forel, 1911
	Trichomyrmex destructor (Jerdon, 1851)
	Trichomyrmex mayri (Forel, 1902)
	Trichomyrmex robustior (Forel, 1892)
Ponerinae	*Anochetus annetteae* Sharaf, 2017 (*)
	Hypoponera abeillei (André, 1881) (+)
	Hypoponera punctatissima (Roger, 1859)
	Brachyponera sennaarensis (Mayr, 1862)
	Platythyrea modesta Emery, 1899

Material examined: Oman: Jebel Akhdar, Alain, 23.07279°N, 54.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (1 w, CASENT0922272, CASC); Date palm, no specific locality, 280 m, 06.iv.2016, (A. Polaszek leg.) (2 w); Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (2 w); Soror, 23.37751°N, 58.10798°E, 252 m, 20.i.2017, (M. R. Sharaf leg.) (13 w) (All in KSMA).

Biological notes: Several workers were collected from leaf litter under a large *Rubus* sp. tree (Rosaceae).

Geographic range: A species originally described from Israel, and with paratype series from KSA and Oman (Collingwood and Agosti 1996).

***Lepisiota omanensis* Sharaf & Monks, 2016**
Lepisiota omanensis Sharaf & Monks, 2016 in Sharaf et al. 2016: 1878, figs 2a-e (w.), Oman. Palearctic.

Material examined: Oman: Muscat, 23.57532°N, 58.4379°E, 22 m, 03.iv.2016, (M. R. Sharaf leg.) (1 w, CASENT0922278, CASC); Oman, Hajar Mountains, Jebel Qahwan, 22.1526°N, 59.372167°E, 305 m, 19.iv.2012, (J. Monks leg.) (holotype worker, ONHM); Al Hajar Mts, Jebel Qahwan, 344 m, 22.15015°N, 59.373683°E, 07.iv.2014, (J. Monks leg.), (2 w, KSMA).

Biological notes: This species was collected by sifting leaf litter in an area cultivated with rose plantations.

Geographic range: This species was recently described from Oman and United Arab Emirates (UAE) (Sharaf et al., 2016).

***Lepisiota opaciventris* (Finzi, 1936)**
(Fig. 2 a-c)
Acantholepis frauenfeldi var. *opaciventris* Finzi, 1936: 187, fig. 11 (w), Egypt. Palearctic.

Material examined: Oman: Jebel Akhdar, Alain, 23.07279°N, 54.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (2 w, KSMA) (1 w, CASENT0922269, CASC); Muscat, 23.57532°N, 58.4379°E, 22 m, 03.iv.2016, (M. R. Sharaf leg.) (6 w); Muscat, 23.62418°N, 58.48927°E, 2 m, 02.iv.2016, (M. R. Sharaf leg.) (3 w); Nakhl, 23.44696 °N, 57.88062 °E, 364 m, 02.iv.2016, (M. R. Sharaf leg.) (1 q, 5 w); Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (3 w); Muscat, Oman Botanical Garden, 23.55886°N, 58.12772°E, 98 m, 03.iv.2016, (M. R. Sharaf leg.) (9 w); Muscat, 23.07343°N, 58.95742°E, 239 m, 08.iv.2016, (M. R. Sharaf leg.) (3 w); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.), (2 w) (All in KSMA).

Biological notes: This species was found nesting under a stone and next to a date palm tree where soil was moist. Several workers were found foraging on the ground close to an *Acacia* tree where the soil was dry.

Geographic range: *Lepisiota opaciventris* was described from Egypt, and recorded from Oman, KSA, Yemen (Collingwood and Agosti 1996), UAE (Collingwood et al. 2011).

***Lepisiota spinisquama* (Kuznetsov-Ugamsky, 1929)**
Acantholepis frauenfeldi subsp. *spinisquama* Kuznetsov-Ugamsky, 1929: 483, fig. 3 (w.), Kazakhstan. Palearctic.

Material examined: Oman: Jebel Akhdar, Alain, 23.07237°N, 57.66187°E, 1889 m, 06.iv.2016, (M. R. Sharaf leg.) (5 w, KSMA) (1 w, CASENT0922270, CASC).

Biological notes: This species was found nesting under a stone in an area of cultivated pomegranate trees and roses.

Geographic range: This species was described from Kazakhstan, and recorded from Oman (Collingwood 1985, Collingwood and Agosti 1996), and the Socotra Archipelago (Collingwood et al. 2004, Sharaf et al., 2017a).

***Nylanderia jaegerskioeldi* (Mayr, 1904)**
Prenolepis (Nylanderia) jaegerskioeldi Mayr, 1904: 8 (q, m.), Egypt. Palearctic.

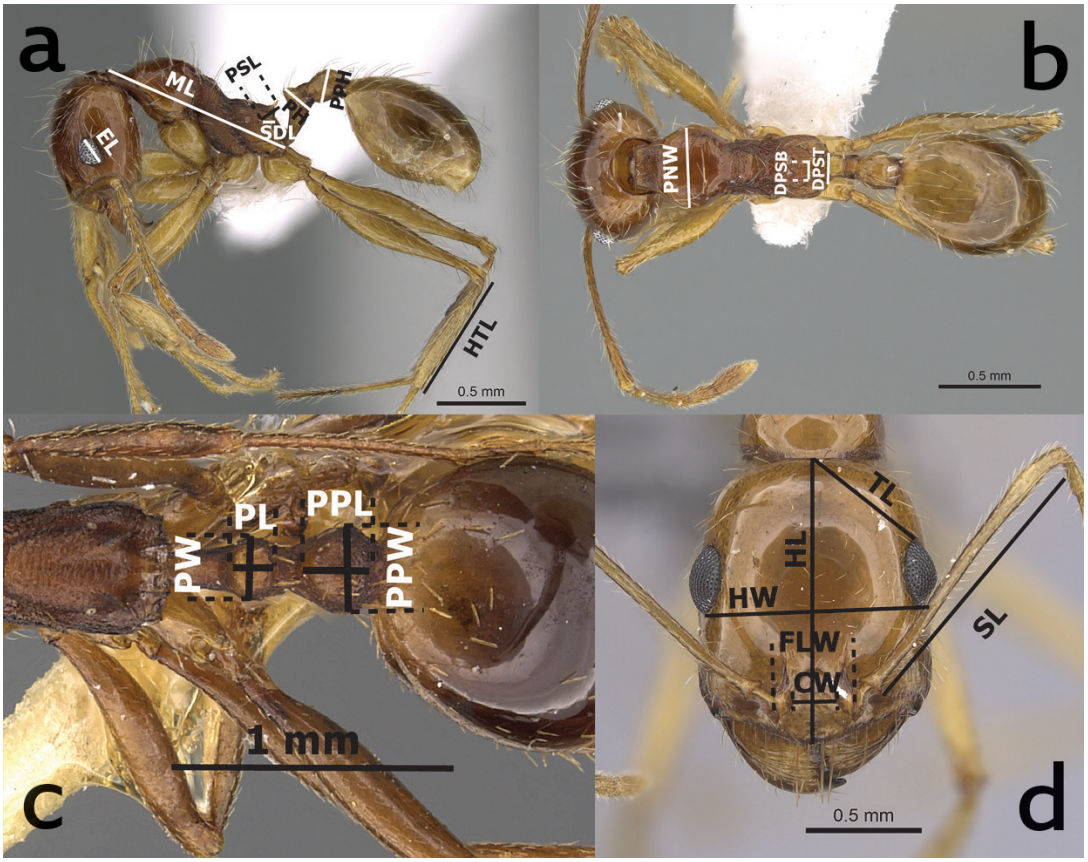

Fig. 1. (a-d): Images of the used measurements; a. & b. *Aphaenogaster sarae*, sp. n., CASENT0922283, a. body in profile; b. body in dorsal view; c. petiole and postpetiole in dorsal view of *A. depressa* Bolton, CASENT0900460; d. head in full-face view of *A. asmaae* sp. n. CASENT0264214.

Material examined: Oman: Muscat, Oman Botanical Garden, 23.55886°N, 58.12772°E, 98 m, 03.iv.2016, (M. R. Sharaf leg.) (3 w, KSMA) (1 w, CASENT0922276, CASC); Muscat, Al Qurm, 23.62405°N, 58.48891°E, 9 m, 09.iv.2016, (M. R. Sharaf leg.) (1 w); Alfleh, Qurayat, 23.20460°N, 58.96920°E, 39 m, 08.iv.2016, (M. R. Sharaf leg.) (4 w); Muscat, 23.62418°N, 58.48927°E, 2 m, 02.iv.2016, (M. R. Sharaf leg.) (1 q); Date palm, no specific locality, 280 m, 06.iv.2016, (A. Polaszek leg.) (1 w); Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (4 w); Muscat, KOM, Alraha Village, 23.56665°N, 58.17630°E, 74 m 18.i.2017, (M. R. Sharaf leg.) (29 w, 7 m) (All in KSMA).

Biological notes: *Nylanderia jaegerskioeldi* was found among leaf litter in a wide range of habitats including mango and date palm plantations. This species is established in greenhouses of the Oman Botanic Gardens, and commonly occurs in moist soil. Several workers were collected from leaf litter under a large *Rubus* sp. tree.

Geographic range: A successful invasive species originally described from Egypt, and widely spread in several countries of the Arabian Peninsula including Oman, Yemen, Kuwait (Collingwood and Agosti 1996), KSA (Collingwood 1985), and UAE (Collingwood et al. 1997, Collingwood et al. 2011). It was also reported from the Palearctic (Balearic Islands, Egypt, Greece, Iraq, Israel,

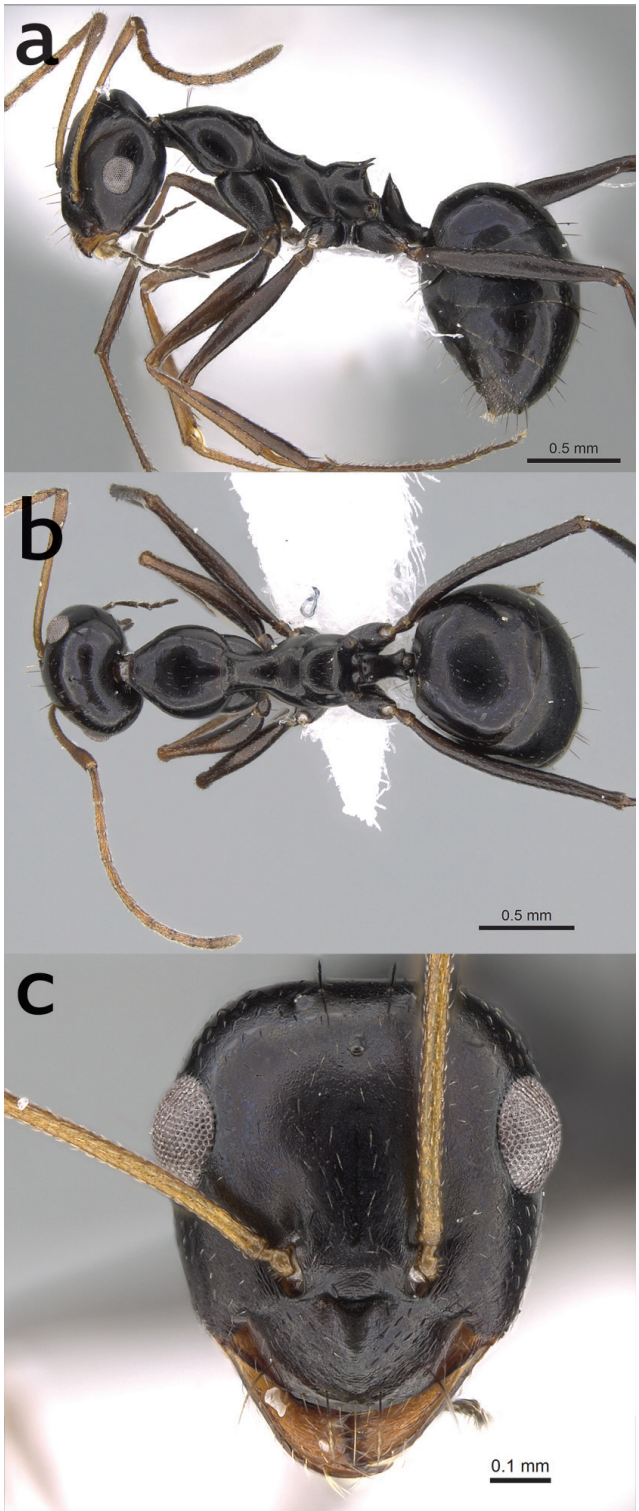

Fig. 2. (a-c): *Lepisiota opaciventris* (Finzi), CASENT0922269, a. body in profile; b. body in dorsal view; c. head in full-face view.

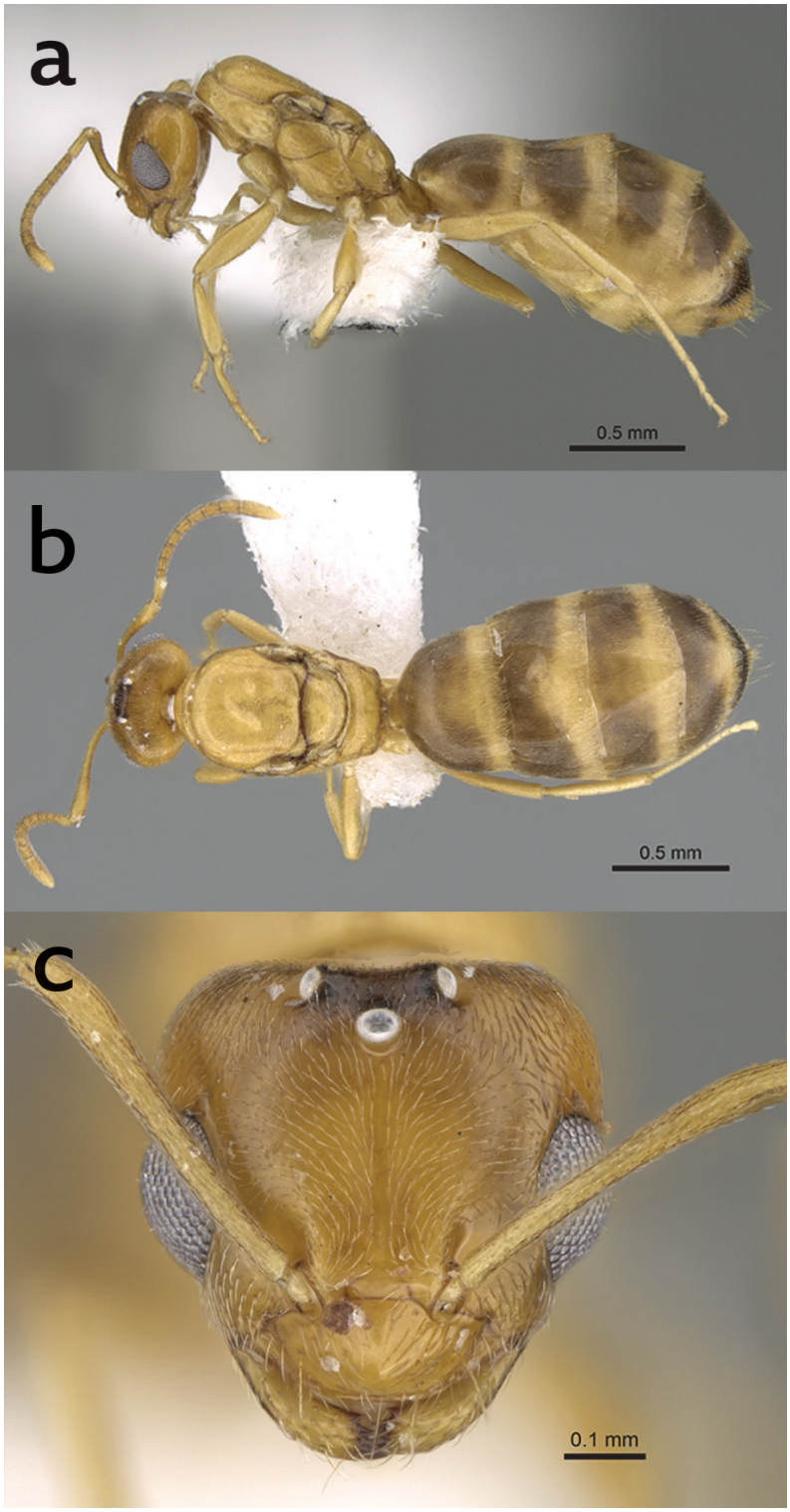

Fig. 3. (a-c): *Plagiolepis boltoni* Sharaf, Aldawood & Taylor, queen, CASENT0919950, a. body in profile; b. body in dorsal view; c. head in full-face view.

Macaronesia, Malta, Morocco, Portugal, Spain, Turkey) and Afrotropical Regions (Benin, Congo, Guinea, Kenya, Sudan, Tanzania, Uganda, western Africa) (LaPolla et al. 2011, AntWeb.org).

***Paratrechina longicornis* (Latreille, 1802)**
Formica longicornis Latreille, 1802: 113 (w.), Senegal. Afrotropic.

Material examined: Oman: Muscat, 23.6176°N, 58.49364°E, 81 m, 07.iv.2016, (M. R. Sharaf leg.) (1 w, CASENT0922275, CASC); Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (2 w); Date palm, no specific locality, 280 m, 06.iv.2016, (A. Polaszek leg.) (9 w); Jebel Akhdar, Alain, 23.07279°N, 57.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (9 w); Muscat, Al Qurm, 23.62405°N, 58.48891°E, 9 m, 09.iv.2016, (M. R. Sharaf leg.), (5 w); Wadi Fanga, 23.45336°N, 58.11807°E, 166 m, 20.i.2017, (M. R. Sharaf leg.) (5 w); Muscat, KOM, Alraha village, 23.56665°N,58.17630°E, 74 m 18.i.2017, (M. R. Sharaf leg.) (28 w, 1 m); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.) (15 w); Alkhoud village, 23.57154°N, 58.12166°E, 63 m, 19.i.2017, (M. R. Sharaf leg.) (23 w, 1 q) (All in KSMA).

Biological notes: A successful tramp species colonizing several types of habitats. It was found nesting in moist soil under a stone next to a date palm tree. It was also observed nesting under a stone near a pomegranate tree. One of the nest chambers contained dead workers of the genera *Camponotus* and *Pheidole*. Several nest series were found in leaf litter.

Geographic range: *Paratrechina longicornis* was described from Senegal. It is one of the most successful tramp species worldwide with a remarkable capacity to invade a wide range of habitats (Wetterer 2008). In Oman, it frequently occurred near human settlements and disturbed sites. This species has been collected from several countries of the Arabian Peninsula: KSA (Collingwood 1985), Yemen (Collingwood and Agosti 1996), UAE (Collingwood et al. 1997, Collingwood et al. 2011), and the Socotra Archipelago (Collingwood et al. 2004, Sharaf et al., 2017a). *Paratrechina longicornis* occurs widely throughout the Old World and New World, both the northern and southern hemispheres (Wetterer 2008).

***Plagiolepis boltoni* Sharaf, Aldawood & Taylor, 2011b**
Plagiolepis boltoni Sharaf, Aldawood & Taylor, 2011b: 204, figs. 2a-c (w.), KSA. Afrotropic.

Measurements: HL 0.50–0.62; HW 0.52–0.62; EL 0.20–0.25; SL 0.45–0.55. **Indices:** CI 95–110; EI 36–44; SI 81–100 (n=7).

Queen (Fig. 3 a-c). **Head.** Nearly as long as broad or little broader than long, with convex sides and straight posterior margin, narrower anteriorly than posteriorly; scapes when laid back from their insertions surpass posterior margin of head by about ¼ of its length; anterior clypeal margin convex; mandibles armed with five teeth; eyes conspicuously large (EL 0.41 × HW); ocelli well-developed. **Mesosoma.** Robust with flat dorsal outline in profile; propodeal spiracle relatively large and circular; dorsal face of propodeum long, sloping abruptly to a short descending face. **Sculpture.** Head and mesosoma smooth and shining; gaster finely shagreened. **Pilosity.** Body covered with dense appressed pubescence, clypeus and mandibles with longer pale suberect hairs. **Colour.** Head, mesosoma, antennae, legs uniform yellow; gastral tergites yellow with anterior two-thirds of each tergite brown.

Material examined: Oman: Jebel Akhdar, Alain, 23.07279°N, 57.66179°E, 1949m, 04.iv.2016, (M. R. Sharaf leg.) (25 w, 8 q, KSMA) (1 w, CASENT0919951; 1 q, CASENT0919950, CASC); Jebel Akhdar, Alain, 23.07237°N, 57.66187°E, 1889 m, 06.iv.2016, (M. R. Sharaf leg.), (4 q, 8 w, KSMA).

Biological notes: *Plagiolepis boltoni* was found nesting in dry soil under a stone at the edge of a pomegranate field and coexisting with *B. sennaarensis*. Several additional workers were found inhabiting leaf litter where soil was dry.

Geographic range: This species was originally described from Riyadh Province, KSA; herein is the first record from Oman, with the first above description of the queen caste.

***Polyrhachis lacteipennis* Smith, 1858**
Polyrhachis lacteipennis Smith, 1858: 60, pl. 4, fig. 40 (q.), India. Indomalaya.

Material examined: Oman: Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (7 w, KSMA, 1 w, CASENT0922268, CASC); Nakhl, 23.38803°N, 57.82937°E, 322 m, 02.iv. 2016, (M. R. Sharaf leg.) (10 w); Muscat, 23.6176°N, 58.49364°E, 81 m, 07.iv.2016, (M. R. Sharaf leg.) (3 w); Date palm, no specific locality, 280 m, 06.iv.2016, (A. Polaszek leg.) (6 w); Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (6 w); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.) (3 w); Alkhoud village, 23.57154°N, 58.12166°E, 63 m, 19.i.2017, (M. R. Sharaf leg.) (1 w) (All in KSMA).

Biological notes: This species nests inside the trunks of date palm trees. Several additional workers were found in leaf litter under date palm trees where the soil was loose and dry.

Geographic range: Originally described from India, this species has been collected in date palm plantations in Oman. Previously, it was recorded from several countries in the Arabian Peninsula including KSA, UAE, and Yemen (Collingwood 1985, Collingwood and Agosti 1996, Collingwood et al. 2011). This species was not observed in any of the date palm plantations of KSA, whereas few specimens were collected using pitfall traps in Asir Mountains.

Subfamily: Myrmicinae
***Aphaenogaster asmaae* Sharaf sp. n.**
(Figure 4 a-c)

Holotype worker. Oman: Jebel Akhdar, Alain, 23.07279°N, 57.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (CASENT0922290, KSMA). **Paratype workers.** KSA: Al Bahah, Dhi Ayn Archeological Village, 19.92796°N, 41.44187°E, 735 m, 23.ix.2011, (B. L. Fisher leg.), Banana field, (1 w, CASENT0264212, KSMA; 1 w, CASENT0264214, CASC).

Worker. Head. In full-face view distinctly longer than broad with nearly parallel sides and straight posterior margin; posterior head corners clearly rounded; eyes relatively large (EL 0.31–0.34 × HW) with about 18 ommatidia in the longest row; anterior clypeal margin clearly convex; scapes long (SL 1.21–1.47× HW); masticatory margin of mandibles armed with eight teeth, the first (counting from apex) is the largest. **Mesosoma.** Promesonotum convex in profile; promesonotal suture shallowly impressed in profile; metanotal groove deeply impressed in profile; propodeal dorsum about twice longer than declivity in profile; propodeal spines minute upward directed dents; pronotum about twice broader than mesonotum in dorsal view. **Petiole.** In profile with long peduncle and low dorsal node (PI1 82–100), in dorsal view slightly longer than broad. **Postpetiole.** Node in the same level of petiolar node in profile. **Sculpture.** Cephalic surface smooth and shining; genae and mandibles longitudinally rugulose; promesonotal dorsum, sides, and gaster smooth and shining, petiole and postpetiole faintly superficially reticulate; mesonotum, mesopleuron, metapleuron, and propodeum transversally rugulose. **Pilosity.** Cephalic, gular and mandibular surfaces with scattered suberect setae; anterior clypeal margin with 10 exceptionally longer setae (seta length 0.34 × HW); scape and antenna with abundant appressed setae; promesonotum and mesonotum with few suberect setae; propodeum with three short pairs of setae; petiole with two pairs of setae, postpetiole with three pairs of backward directed setae; gaster with abundant scattered setae. **Colour.** Head, mesosoma, petiole, and postpetiole yellow-brown, legs yellow, gaster yellow-brown, dark brown or black.

Measurements and indices.

Holotype worker. Measurements: BL 5.12; CW 0.17; DPSB 0.15; DPST 0.20; EL 0.32; FLW 0.37; HL 1.30; HTL 1.50; HW 1.02; ML 1.62; PH 0.25; PL 0.22; PNW 0.65; PPH 0.25; PPL 0.22; PPW 0.20; PSL 0.22; PW 0.20; SDL 0.20; SL 1.50; TL 0.55. **Indices:** CL 17; EI 31; FLI 46; HTI 147; MI 249; PI1 88; PI2 22; PPI1 88; PPI2 22; PSI 167; SI1 115; SI2 147; SPI1 22; SPI2 110.

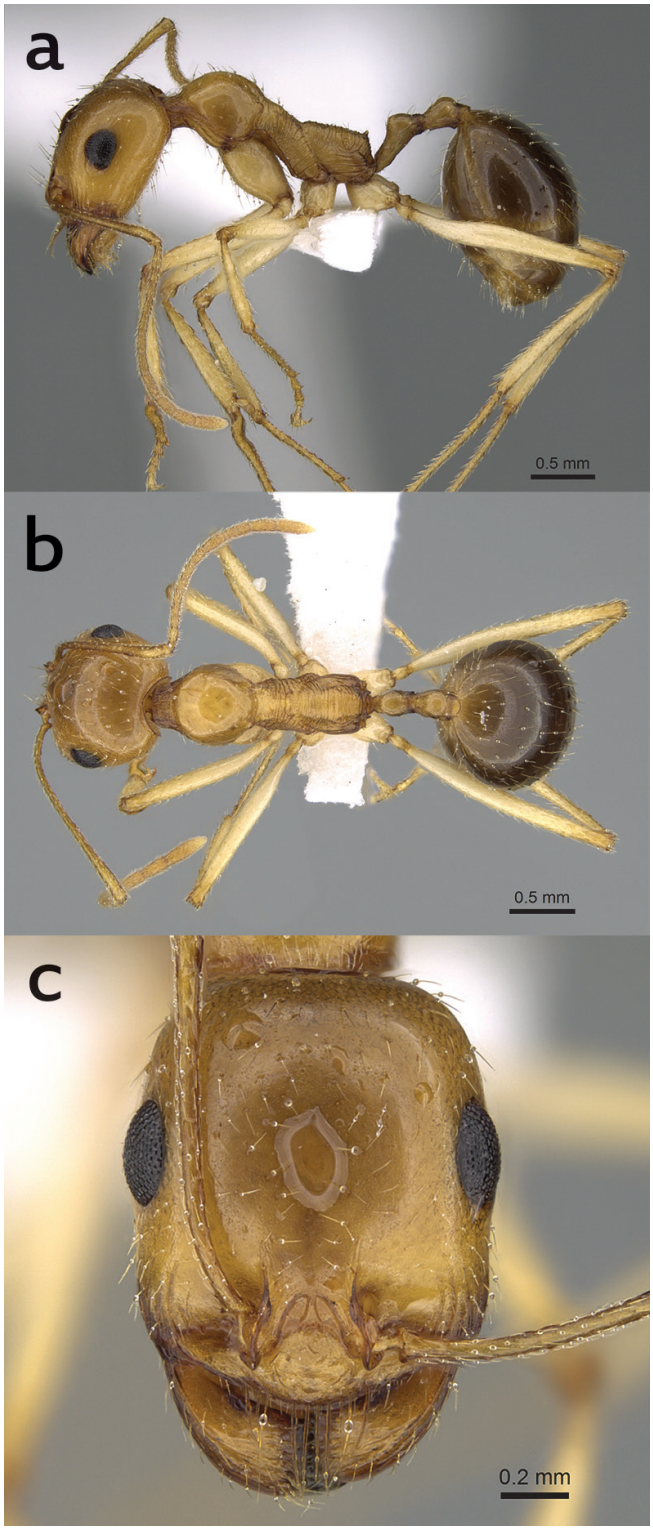

Fig. 4. (a-c): *Aphaenogaster asmaae* sp. n., paratype worker, CASENT0264214, a. body in profile; b. body in dorsal view; c. head in full-face view.

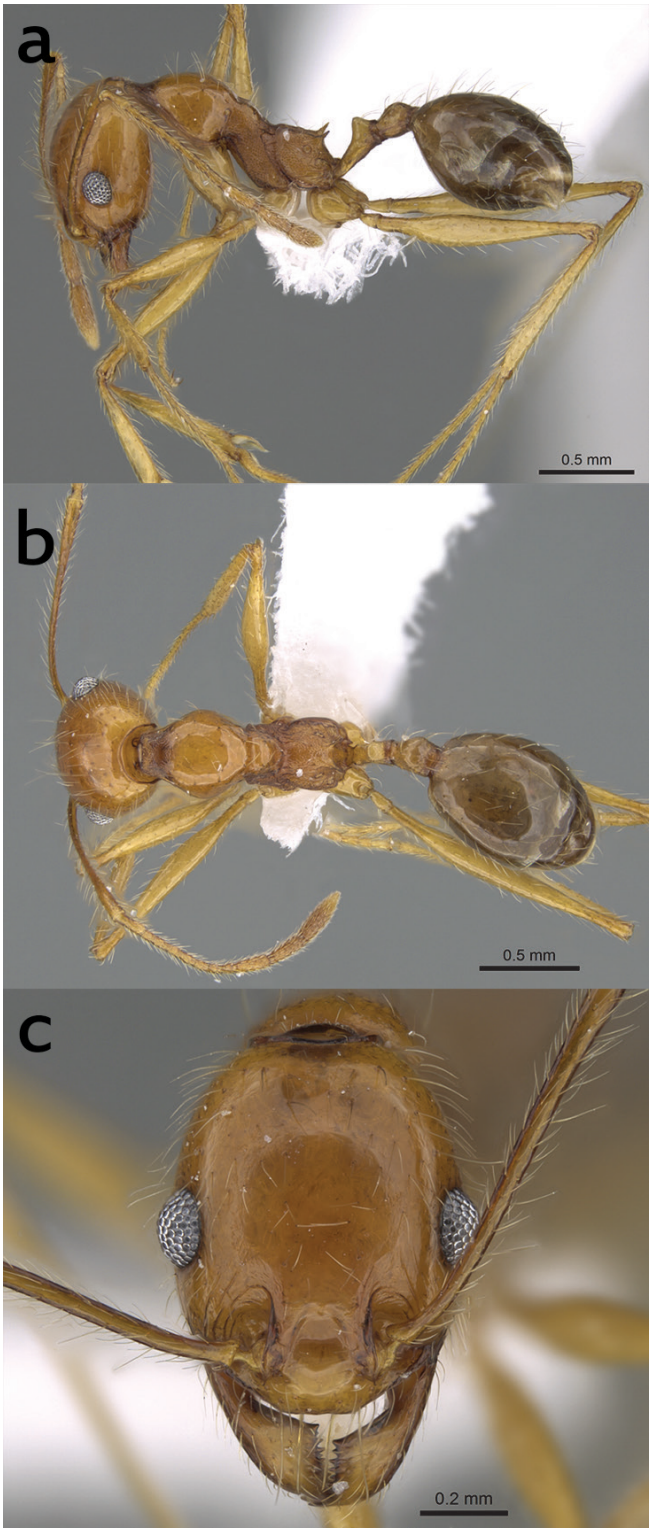

Fig. 5. (a-c): *Aphaenogaster sarae* sp. n., paratype worker, CASENT0922283, a. body in profile; b. body in dorsal view; c. head in full-face view.

Paratype workers. Measurements: BL 4.40–5.30; CW 0.22–0.25; DPSB 0.09–0.15; DPST 0.14–0.22; EL 0.30–0.37; FLW 0.34–0.45; HL 1.18–1.25; HTL 1.32–1.40; HW 0.94–1.07; ML 1.50–1.75; PH 0.22–0.27; PL 0.18–0.27; PNW 0.63–0.67; PPH 0.20–0.22; PPL 0.16–0.20; PPW 0.14–0.22; PSL 0.17–0.18; PW 0.17–0.18; SDL 0.16–0.20; SL 1.27–1.30; TL 0.50–0.59. Indices: CL 21–23; EI 32–35; FLI 56–59; HTI 131–140; MI 238–261; PI1 82–100; PI2 19–25; PPI1 80–91; PPI2 17–19; PSI 147–222; SI1 104–108; SI2 121–135; SPI1 16–19; SPI2 85–113 (n=2).

Differential diagnosis. *Aphaenogaster asmaae* appears to be most similar to A. *isekram* Bernard, 1977, from Algeria. The two species are similar in size, colour, and body sculpture. Both species have the head, mesosoma, petiole, and postpetiole yellow-brown, antennae and legs yellow, and gaster dark brown or black-brown. In addition, the body is smooth and shining with fine transverse rugae on propodeal dorsum. However, *A. asmaae* can be readily separated from *A. isekram* by the following characters: masticatory margin of mandibles armed with eight teeth, propodeum armed with a pair of distinct minute dents, and propodeal dorsum finely, transversely rugulose (ca 20 rugae). In *A. isekram*, the masticatory margin of mandibles armed with 6–7 teeth, the propodeum lacks propodeal dents. The propodeum is broadly angulate in profile, and propodeal dorsum densely transversely rugulose (more than 30 rugae). In addition, *A. asmaae* has lower frontal lobes index (FLI 46–59 versus FLI 76 in *isekram*), and lower postpetiole index (PPI1 80–91 versus PPI1 125 in *isekram*).

Habitat and Biology. The type locality (Fig. 6) is a mountainous region with a substantial variety of cultivated plants mainly rose (*Rosa* sp.) plantations. The new species was found nesting in the soil under a stone where the soil was relatively moist, rich in organic matter, and close to a date palm tree.

Etymology. The patronym *asmaae* has been selected in honor of Eng. Asmaa Khater, Jeddah, KSA.

***Aphaenogaster sarae* Sharaf sp. n.**
(Fig. 5 a-c)

Holotype worker. Oman, Masfat El-Ebryein, 23.12111°N, 57.29662°E, 1949 m, 21.i.2017, (M. R. Sharaf leg.), MRS0361, (CASENT0823830, KSMA).

Paratype workers. (11 w) Same data as the holotype (KSMA), 1 w, CASENT0922283(CASC), 1 (CWEM), 1 (WMLC), the remaining in KSMA; 4 w, KSA, Al Bahah Aqaba, 20.00039°N, 41.43702°E, 1235 m, 11.iv.2016, (M. R. Sharaf leg.), MRS0322 (KSMA), (1 w, CASENT0922294); 6 w, Al Bahah Province, Shada Al ‘Ala, 19.838817°N, 41.310067°E, 1563 m, 02.iii.2015, (Al Dhafer leg.) (3-1-2, Cactus, P.T.) (KSMA); 2 w, Oman, Jebel Akhdar, Alain, 23.07279°N, 57.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.); MRS0299; 1w, CASENT0922294 (KSMA), 1 w, CASENT0922283(CASC); 5 w, KSA, Wadi Dhiyan, 19.7314°N, 41.4219°E, 333 m, ix.83, (C. A. Collingwood leg.) (labeled: species close to *rugaticipes*, card labeled beneath: C. A. Collingwood) (WMLC).

Worker. Head. Distinctly longer than broad with convex sides, narrower anteriorly and posteriorly in full-face view; posterior head corners gradually rounded and faintly marked; eyes of moderate size (EL 0.27–0.32 × HW) with about 12 ommatidia in the longest row; anterior clypeal margin nearly straight; scapes long (SL 1.48–1.87× HW); mandibles long with curved outer margin and masticatory margin armed with ten teeth, the first (counting from apex) is the largest. **Mesosoma.** Promesonotum convex in profile; promesonotal suture present; metanotal groove impressed; propodeal dorsum nearly equal to declivity in profile; propodeal spines of moderate length (SPI1 18–26; SPI2 120–171) and acute; propodeal spiracle circular. **Petiole.** Node as long as broad in dorsal view; peduncle long and node narrowly rounded in profile; petiolar and postpetiolar nodes of same level in profile. **Postpetiole.** Node as long as broad in dorsal view, with convex dorsum and ventral margin in profile. **Sculpture.** Cephalic and mandibular surfaces smooth and shining; cephalic surface behind posterior-lateral clypeal margins with three distinct curved rugae;

pronotum, mesonotal dorsum, petiole, postpetiole, and gaster smooth and shining, mesopleura and propodeum densely finely punctulate. **Pilosity.** Body surface with abundant long setae, anterior clypeal margin with two exceptionally long pairs of setae. **Colour.** Uniform light brown.

Measurements and indices.

Holotype worker. Measurements: BL 3.37; CW 0.10; DPSB 0.10; DPST 0.15; EL 0.20; FLW 0.25; HL 0.80; HTL 1.07; HW 0.62; ML 1.05; PH 0.15; PL 0.10; PNW 0.40; PPH 0.17; PPL 0.17; PPW 0.17; PSL 0.15; PW 0.10; SDL 0.05; SL 1.12; TL 0.40. **Indices:** CL 16; EI 32; FLI 40; HTI 173; MI 263; PI1 67; PI2 16; PPI1 100; PPI2 27; PSI 170; SI1 140; SI2 181; SPI1 24; SPI2 300.

Paratype workers. Measurements: BL 3.0–4.25; CW 0.07–0.12; DPSB 0.07–0.12; DPST 0.12–0.25; EL 0.17–0.20; FLW 0.17–0.25; HL 0.75–0.87; HTL 0.87–1.07; HW 0.62–0.67; ML 1.0–1.25; PH 0.15–0.17; PL 0.07–0.12; PNW 0.37–0.42; PPH 0.12–0.17; PPL 0.12–0.17; PPW 0.12–0.17; PSL 0.12–0.17; PW 0.07–0.12; SDL 0.07–0.12; SL 0.92–1.25; TL 0.37–0.50. **Indices:** CL 11–19; EI 27–30; FLI 35–71; HTI 129–161; MI 267–313; PI1 47–71; PI2 11–18; PPI1 71–142; PPI2 18–31; PSI 100–243; SI1 123–167; SI2 148–187; SPI1 18–26; SPI2 120–171 (n=11).

Differential diagnosis. *Aphaenogaster sarae* is the most similar to *A. finzi* Müller, 1921 described from Federal Republic of Yugoslavia in regard to body size and the abundant long body pilosity. *Aphaenogaster sarae* can be readily distinguished from *A. finzi* by the paler colour, the larger eyes (EI 27–32), the rounded posterior head margin, the longer antennal scapes (SI2 148–187), and the thinner and more acute propodeal spines. *Aphaenogaster finzi* is dark brown with smaller eyes (EI 19), broad and straight posterior head margin, shorter antennal scapes (SI2 111), and the blunt and broadly based propodeal spines. Superficially, *A. sarae* appears similar to *A. radchenkoi* Kiran, Aktac & Tezcan, 2008 from Turkey, but *A. sarae* can be easily separated by the larger eyes (with about 12 ommatidia in the longest row), the longer scapes (SI1 123–167, SI2 148–187), the anteriorly and posteriorly narrow head, the thin and acute propodeal spines, and the densely granulate propodeal sides and dorsum, whereas *A. radchenkoi* has smaller eyes (with about 6 ommatidia in the longest row), shorter scapes (SI1 84–88, SI2 96–104), head narrower anteriorly than posteriorly, the propodeal spines short, blunt, and broadly based, and the propodeal sides and dorsum smooth.

Habitat and biology. The same habitat of *A. asmaae* (Fig. 6).

Etymology. The patronym *sarae* honors Sara El Saadany the daughter of Asmaa Khater and Ahmed El Saadany, relatives of M. Sharaf.

Key to Arabian *Aphaenogaster* Mayr, 1853

1. Propodeum dentate in profile (Fig. 7a); mesopleura, metapleura, and propodeum transversally rugulose (Fig. 7a) (Oman, KSA)..... ..... *A. asmaae* sp. n.

– Propodeum armed with a pair of acute spines (Fig. 7b); mesopleura, metapleura, and propodeum finely and densely punctulate (Fig. 7b)... 2

2. Dark brown in color; body pilosity sparse, short and blunt (Fig. 7c); cephalic surface reticulate-rugulose (Fig. 7c); eyes small (EL 0.22 × HW), situated behind midlength of head; clypeus longitudinally rugulose with granulate ground sculpture (Fig. 7c); promesonotal suture indistinct; (Algeria, KSA, Andorra, Armenia, Bulgaria, France (type locality), Georgia, Gibraltar, Greece, Iberian Peninsula, Iran, Israel, Montenegro, Portugal, Republic of Macedonia, Spain, Switzerland, Turkey, Turkmenistan .... *A. gibbosa* (Latreille)

– Yellow-brown species; body pilosity abundant, long, and fine (Fig. 7d); cephalic surface smooth and shining except for three pairs of curved rugae on genae (Fig. 7d); eyes large (EL 0.27–0.32 × HW), situated on midlength of head; clypeus entirely smooth and shining (Fig. 7d); promesonotal suture well-developed (Oman, KSA) .... *A. sarae* sp. n.

Fig. 6. Type locality of *Aphaenogaster sarae* sp. n. Photo: M. R. Sharaf.

***Cardiocondyla breviscapa* Seifert, 2003**
(Fig. 8 a-c)
Cardiocondyla breviscapus Seifert, 2003: 288, fig. 64 (w.), India. Indomalaya.

Material examined: Oman: 23.54333°N, 58.93333°E, 280 m, 06.iv.2016, (A. Polaszek leg.) (1 w, CASENT0922293, KSMA).

Geographic range: This species is described from India. Our collection represents a new country record for Oman.

***Cardiocondyla emeryi* Forel, 1881**
Cardiocondyla emeryi Forel, 1881: 5 (w.), Virgin Is. Neotropic.

Material examined: Oman, Jebel Akhdar, Alain, 23.07237°N, 57.66187°E, 1889 m, 06.iv.2016, (M. R. Sharaf leg.) (2 w, CASENT0922295, KSMA); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.) (3 w, KSMA).

Biological notes: This species was found in leaf litter where soil was dry.

Geographic range: *Cardiocondyla emeryi* is one of the most successful cosmopolitan tramp species, widely spread by human trade (Wetterer 2012). It was described from Virgin Islands, and commonly found in several countries of the Arabian Peninsula, including Oman, Yemen (Collingwood and Agosti 1996), KSA (Collingwood 1985), UAE (Collingwood et al. 1997), and the Socotra Archipelago (Collingwood et al. 2004, Sharaf et al., 2017a).

***Cardiocondyla mauritanica* Forel, 1890**
(Fig. 9 a-c)
Cardiocondyla nuda var. *mauritanica* Forel, 1890: lxxv (w.), Tunisia. Palearctic.

Material examined: Oman: Muscat, Al Qurm, 23.62405°N, 58.48891°E, 9 m, 09.iv.2016, (M. R. Sharaf leg.), (2 q, 8 w, KSMA; 1 w, CASENT0922292, CASC); Muscat, 23.6176°N, 58.49364°E, 81 m, 07.iv.2016, (M. R. Sharaf leg.) (1 w, KSMA).

Biological notes: This species was found in leaf litter under a date palm tree where the soil was loose and dry.

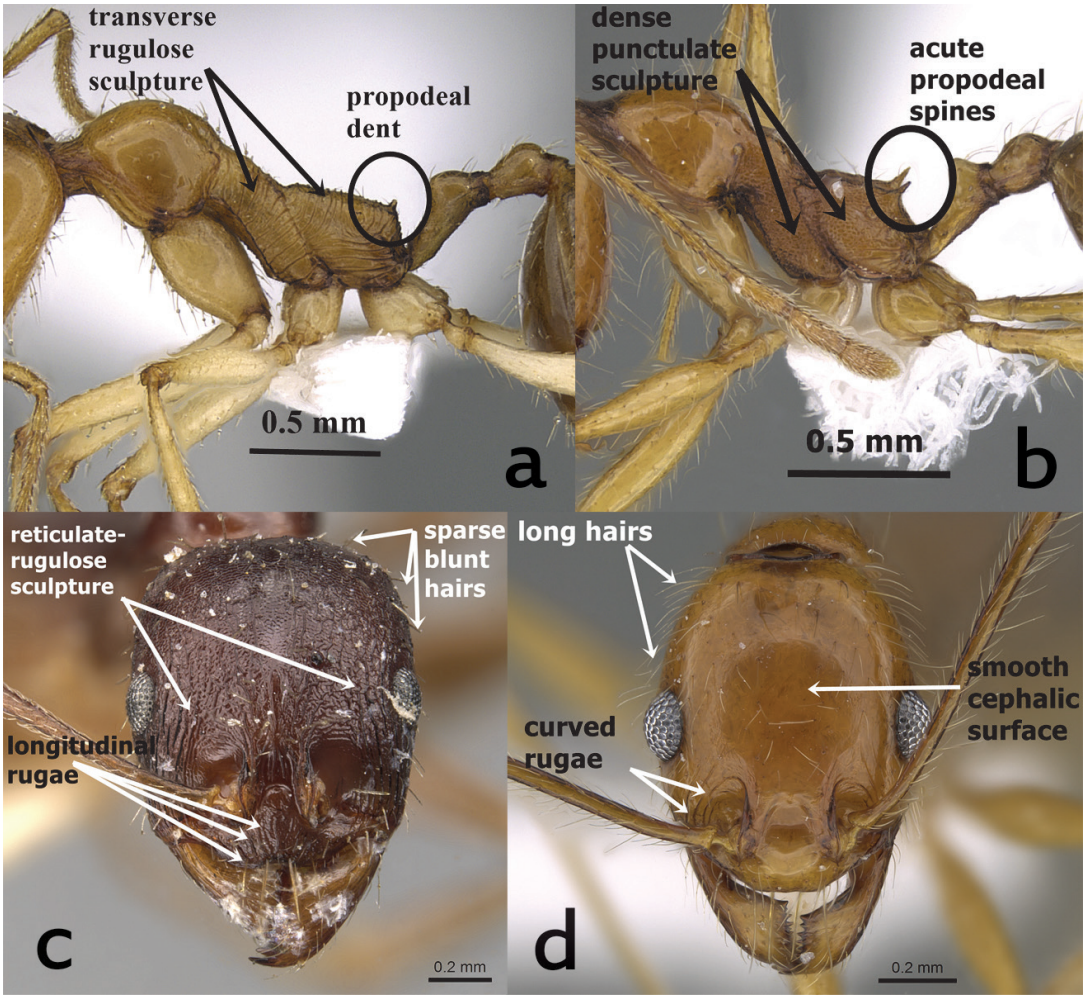

Fig. 7. (a-d): *Aphaenogaster* key illustrations; a. body profile of *A. asmaae* sp. n.; b. mesosoma of *A. sarae* sp. n. in profile; c. head of *A. gibbosa* (Latreille) in full-face view; d. head of *A. sarae* sp. n. in full-face view.

Geographic range: This species was described from Tunisia and it is the second-most common species of the genus in the Arabian Peninsula. It has been recorded from KSA (Collingwood 1985), Yemen (Collingwood and Agosti 1996), and UAE (Collingwood et al. 1997). *Cardiocondyla mauritanica* is recorded for the first time from Oman.

***Cardiocondyla yemeni* Collingwood & Agosti, 1996**

(Fig. 10 a-c)

Cardiocondyla yemeni Collingwood & Agosti, 1996: 328, fig. 11 (w.) Yemen. Afrotropic.

Material examined: Oman: Nakhl, 23.6176°N, 58.49364°E, 81 m, 05.iv.2016, (M. R. Sharaf leg.) (8 w, KSMA; 1 w, CASENT0922296, CASC).

Biological notes: This species was found in dry leaf litter.

Geographic range: This species was originally described from Yemen and this is the second record since its description.

***Crematogaster oasium* Santschi, 1911**

Crematogaster (Acrocoelia) auberti st. oasium Santschi, 1911f: 84 (w.), Tunisia. Palearctic.

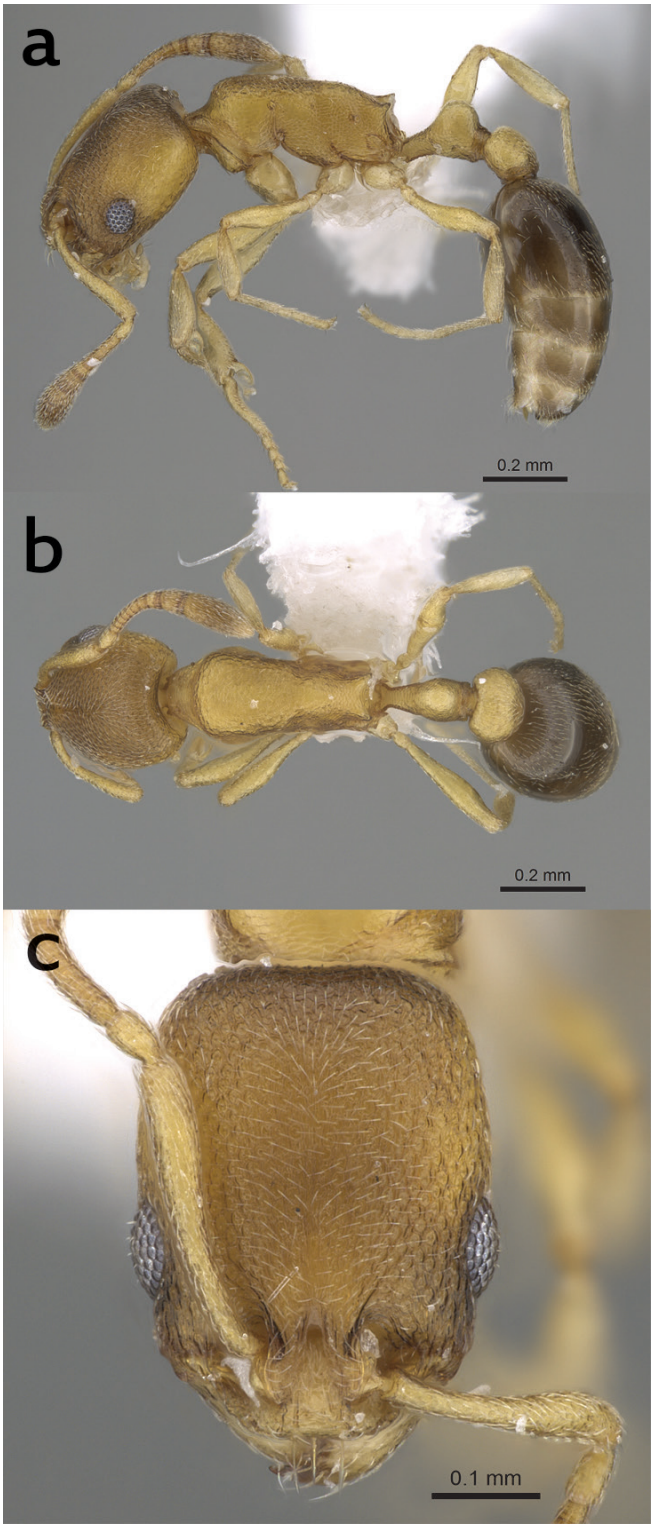

Fig. 8. (a-c): *Cardiocondyla breviscapa* Seifert, CASENT0922293, a. body in profile; b. body in dorsal view; c. head in full-face view.

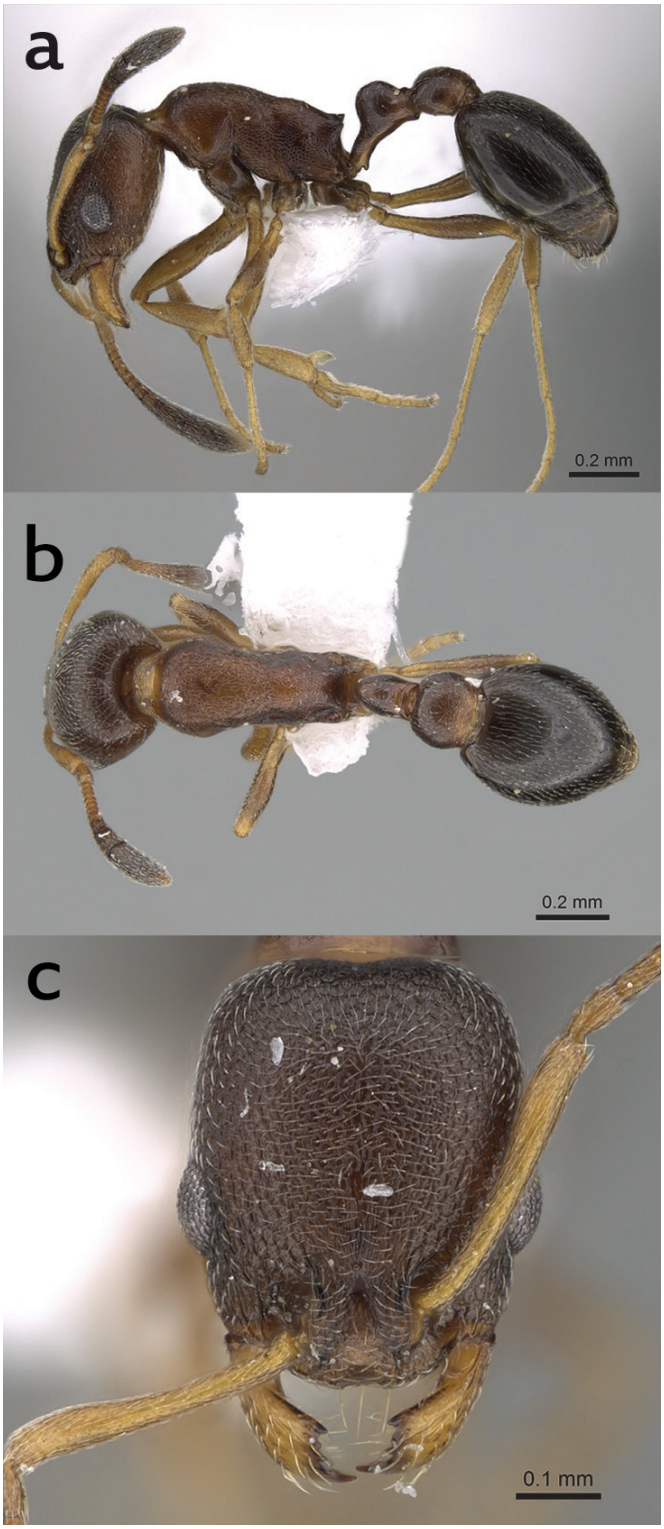

Fig. 9. (a-c): *Cardiocondyla mauritanica* Forel, CASENT0922292, a. body in profile; b. body in dorsal view; c. head in full-face view.

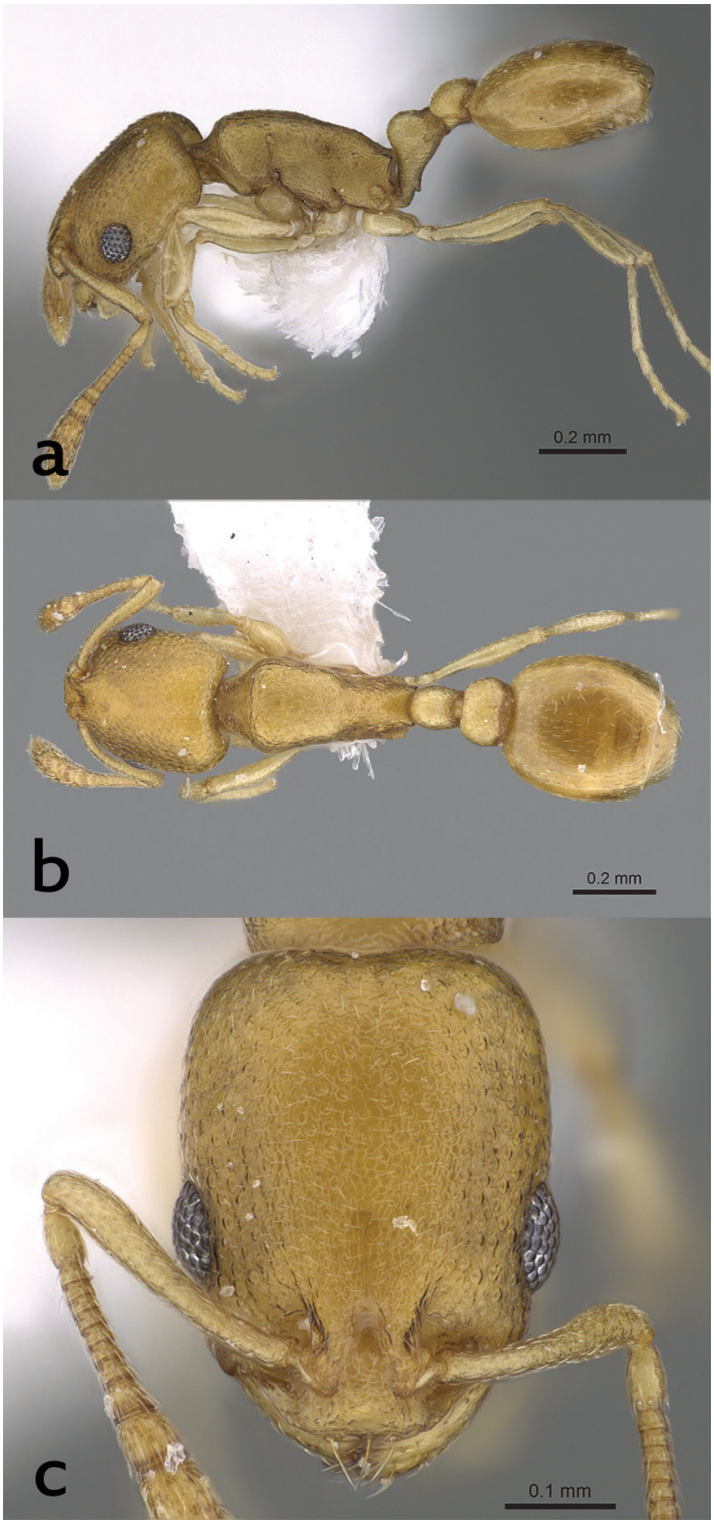

Fig. 10. (a-c): *Cardiocondyla yemeni* Collingwood & Agosti, CASENT0922296, a. body in profile; b. body in dorsal view; c. head in full-face view.

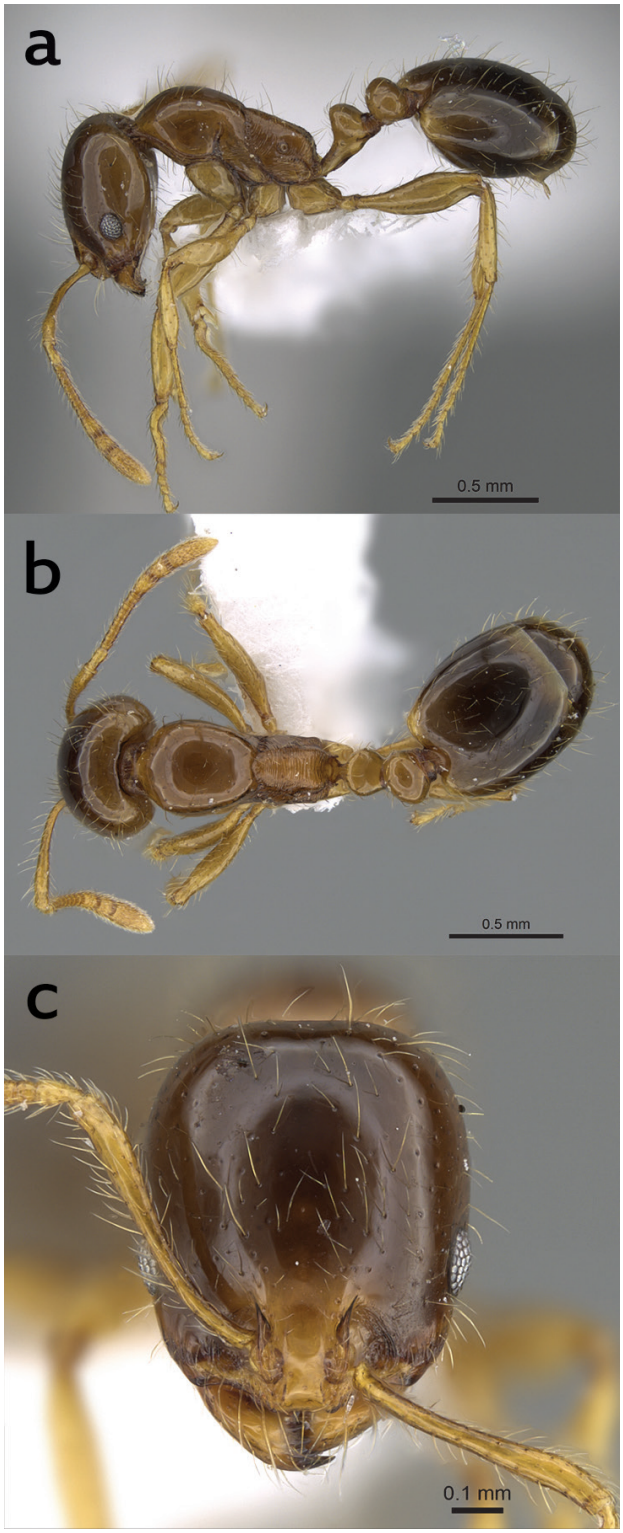

Fig. 11. (a-c): *Erromyrma latinodis* (Mayr), CASENT0922298, a. body in profile; b. body in dorsal view; c. head in full-face view.

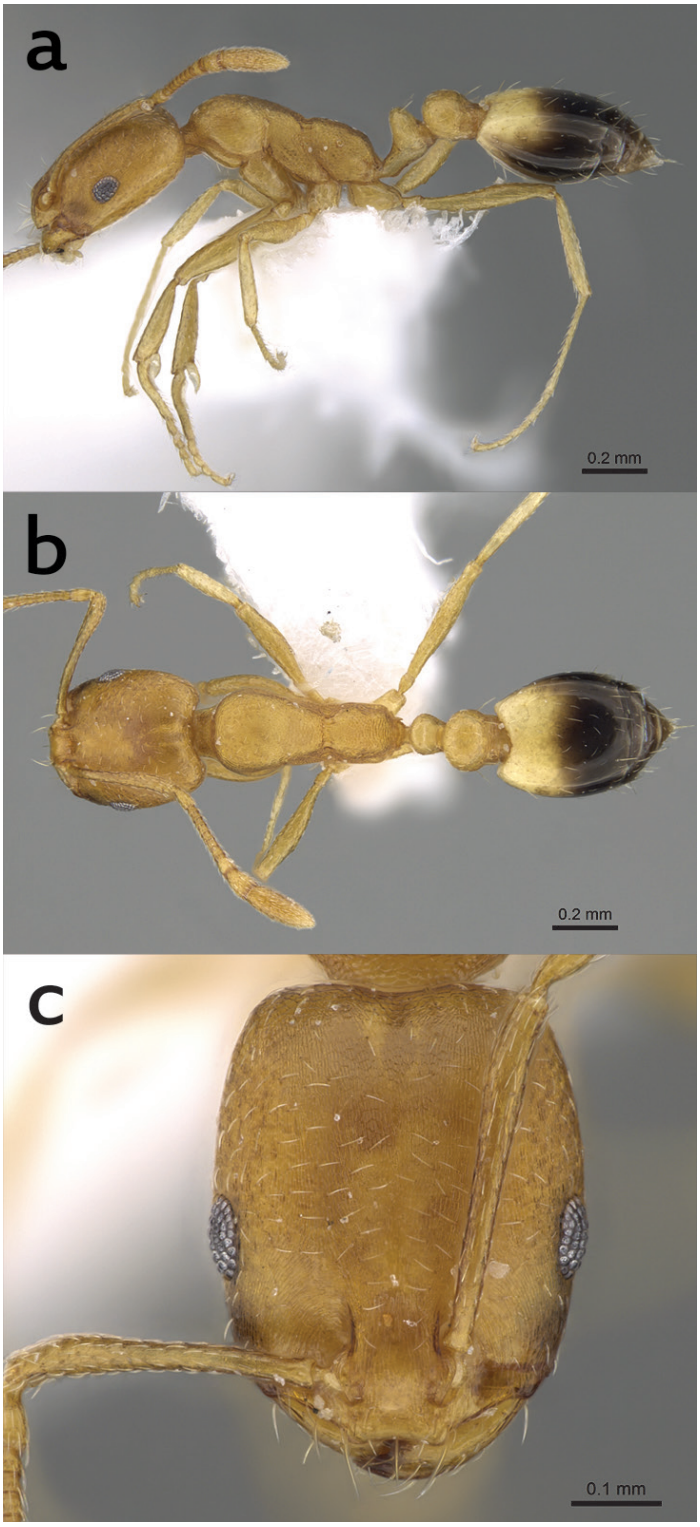

Fig. 12. (a-c): *Monomorium dichroum* Forel, CASENT0922304, a. body in profile; b. body in dorsal view; c. head in full-face view.

Material examined: Oman: Muscat, 23.6176°N, 58.49364°E, 81 m, 07.iv.2016, (M. R. Sharaf leg.) (1 w, CASENT0922286, CASC).

Geographic range: This species was originally described from Tunisia, and recorded from Oman (Collingwood 1985) and UAE (Collingwood and Agosti 1996).

***Crematogaster senegalensis* Roger, 1863**
Crematogaster senegalensis Roger, 1863: 206 (w. q.), Senegal. Afrotropic.

Material examined: Oman: Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (15 w); Date palm, no specific locality, 280 m, 06.iv.2016, (A. Polaszek leg.) (3 w); Alfleh, Qurayat, 23.20460°N, 58.96920°E, 39 m, 08.iv.2016, (M.R. Sharaf leg.) (1 w); Alkhoud Village, 23.57154°N, 58.12166°E, 63 m, 19.i.2017, (M. R. Sharaf leg.) (1 w) (All in KSMA).

Biological notes: This species was found foraging on moist ground and found in leaf litter under a date palm tree. A nest series was found under a stone. Several additional workers were collected from leaf litter under a large tree of *Rubus* sp.

Geographic range: A species originally described from Senegal and recorded from the Malagasy Region. It is also widely distributed in the Afrotropical Region (Collingwood 1985; Collingwood et al. 2011). In the Arabian Peninsula, this species is recorded from KSA, Oman (Collingwood and Agosti 1996), and the UAE (Collingwood et al. 2011).

***Erromyrma latinodis* (Mayr, 1872)**
(Fig. 11 a-c)
Monomorium latinode Mayr, 1872: 152 (w.), Borneo. Indomalaya.

Material examined: Oman: Jebel Akhdar, Alain, 23.07237°N, 57.66187°E, 1889 m, 06.iv.2016, (M. R. Sharaf leg.) (7 w); Jebel Akhdar, Alain, 23.07279°N, 57.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (8 w, 1 w, CASENT0922300, KSMA; 1 w, CASENT0922298, CASC); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.) (48 w, KSMA).

Biological notes: A nest series was found under a pomegranate tree. Several workers were collected from under a rock where the soil was dry and loose and in an area in cultivated rose plantations. Individuals were also found among leaf litter where soil was dry.

Geographic range: *Erromyrma latinodis* was originally described from Borneo and has invaded several regions of the World (Fisher & Bolton 2016). The present collections represent the first record for Oman and for the Arabian Peninsula.

***Monomorium dichroum* Forel, 1902**
(Fig. 12 a-c)
Monomorium dichroum Forel, 1902: 212 (w.), India. Indomalaya.

Material examined: Oman: Muscat, Al Qurm, 23.62405°N, 58.48891°E, 9 m, 09.iv.2016, (M. R. Sharaf leg.) (1 w, KSMA; 1 w, CASENT0922304, CASC); Muscat, 23.6176°N, 58.49364°E, 81 m, 07.iv.2016, (M.R. Sharaf leg.) (4 w); Muscat, KOM, Alraha village, 23.56665°N,58.17630°E, 74 m 18.i.2017, (M. R. Sharaf leg.) (6 w) (All in KSMA).

Biological notes: Several workers were found in leaf litter under a date palm tree where the soil was soft and dry.

Geographic range: *Monomorium dichroum* was originally described from India (Forel 1902) and has been recorded from the Socotra Archipelago (Sharaf et al., 2017a). The present collections represent a new record for Oman.

***Monomorium exiguum* Forel, 1894**
Monomorium exiguum Forel, 1894: 85 (w.), Ethiopia. Afrotropic.

Material examined: Oman: Jebel Akhdar, Alain, 23.07279°N, 57.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (17 w); Jebel Akhdar, Alain, 23.07237°N, 57.66187°E, 1889 m, 06.iv.2016, (M. R. Sharaf leg.) (4 w); Muscat, 23.62405°N, 58.48891°E, 9 m, 09.iv.2016, (M. R. Sharaf leg.) (6 w); Qurayat, 23.20460°N, 58.96920°E, 39 m, 08.iv.2016, (M. R. Sharaf leg.) (9 w); Date palm, no specific locality, 08.iv.2016, (A. Polaszek)

(1 w); Nakhl, 23.49327°N, 57.83421°E, 190 m, 5.iv.2016, (M. R. Sharaf leg.) (7 w); Muscat, 23.61760°N, 58.49364°E, 81 m, 07.iv.2016, (M. R. Sharaf leg.) (1 w); Wadi Fanga, 23.46194°N, 58.10326°E, 160 m, 20.i.2017, (M. R. Sharaf leg.) (3 w); Eastern Hajar, Mts, S. side, Samail gap, Lizurgh village, 23.355556°N, 58.105556°E, 280 m, 6.iv.2016, (A. Polaszek) (3 w); Muscat, KOM, Alraha village, 23.56665°N, 58.17630°E, 74 m, (M. R. Sharaf leg.) (1 w); Masfat Elebryein, 23.14178°N, 57.31330°E, 933 m, 21.i.2017, (M. R. Sharaf leg.) (3 w); Alkhoud village, 23.57154°N, 58.12166°E, 63 m, 19.i.2017, (M. R. Sharaf leg.) (1 w); Wadi Fanga, 23.45336°N, 58.11807°E, 166 m, 20.i.2017, (M. R. Sharaf leg.) (4 w); Eastern Hajar, Mnt, Rd to Sur, 23.1675°N, 58.101944°E, 280 m, 06.iv.2016, (A. Polaszek leg.) (2 w), (All in KSMA); Jebel Akhdar, Alain, 23.07279°N, 57.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (1 w, CASENT0922302, CASC).

Biological notes: This species is one of the most successful *Monomorium* species of the Arabian Peninsula because of its ability to invade most types of habitats including leaf litter and sandy and clay soils of natural and urban sites (Sharaf et al. 2018).

Geographic range: This species was originally described from Ethiopia and has many records from the Afrotropical Region (Bolton 1987). It was originally recorded from Oman as the species *M. baushare* Collingwood & Agosti, 1996, recently synonymized with *M. exiguum* by Sharaf et al. (2017a). *Monomorium exiguum* has occupied into many different habitats in Oman. This species also has been recorded from KSA (Aldawood & Sharaf 2009) and the Socotra Archipelago (Sharaf et al., 2017a).

***Monomorium jizane* Collingwood & Agosti, 1996**

Monomorium jizane Collingwood & Agosti, 1996: 348, fig. 19 (w.), KSA. Afrotropic.

Material examined: Oman: Muscat, Al Qurm, 23.62405°N, 58.48891°E, 9 m, 09.iv.2016, (M. R. Sharaf leg.) (3 w, KSMA; 1 w, CASENT0922303, CASC).

Biological notes: This species was collected by sifting leaf litter.

Geographic range: A species that appears native to the Arabian Peninsula, described from the southwestern mountains of the KSA. Additional records are available from Oman and Yemen (Collingwood and Agosti 1996).

***Monomorium subopacum* (Smith, 1858)**

Myrmica subopaca Smith, 1858: 127 (w. q.), Portugal (Madeira Island). Afrotropic.

Material examined: Oman: Muscat, Oman Botanical Garden, 23.55886°N, 58.12772°E, 98 m, 03.iv.2016, (M. R. Sharaf leg.) (1 w, CASENT0922305); Firq, 23.07343°N, 58.95742°E, 256 m, 08.iv.2016, (M. R. Sharaf leg.) (3 w) (All in KSMA).

Biological notes: This species was collected in a dry valley planted with *Acacia*.

Geographic range: *Monomorium subopacum* was originally described from Portugal and has been recorded from Oman, Yemen (Collingwood and Agosti 1996), KSA (Collingwood 1985), and UAE (Collingwood et al. 2011).

***Monomorium niloticum* Emery, 1881**

Monomorium niloticum Emery, 1881: 533 (w.) Egypt. Palearctic.

Material examined: Oman: Nakhl, 23.44696°N, 57.88062°E, 364 m, 02.iv.2016, (M. R. Sharaf leg.) (6 w, KSMA, 1 w, CASENT0922306, CASC); Oman: Muscat, Oman Botanical Garden, 23.55886°N, 58.12772°E, 98 m, 03.iv.2016, (M. R. Sharaf leg.) (3 w); Oman: Muscat, 23.57532°N, 58.4379°E, 22 m, 03.iv.2016, (M. R. Sharaf leg.) (3 w) (All in KSMA).

Biological notes: This species was found nesting under a rock with several unidentified silverfish (Thysanura) in nest galleries. Several workers were observed foraging on the ground.

Geographic range: A species originally described from Egypt and widely distributed in the Arabian Peninsula (Collingwood 1985, Collingwood and Agosti 1996, Collingwood et al. 2011).

***Pheidole indica* Mayr, 1879**
Pheidole indica Mayr, 1879: 679 (s. w. q.), India. Indomalaya.

Material examined: Oman: Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (10 w, KSMA, 1 minor w, CASENT0922285, 1 major w, CASENT0922284); Jebel Akhdar, Alain, 23.07279°N, 54.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (1 w); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.) (1 major w) (All in KSMA).

Biological notes: A nest series was found under a stone next to a large *Rubus* sp. tree. Many workers were also found under a pomegranate tree. Another nest series was found under a rock where the soil was dry and loose. Several workers were also occurred in moist soil under a stone next to a date palm tree.

Geographic range: Originally described from India, this species is one of the more successful invasive species of the genus worldwide (Sarnat et al. 2015). It has been recorded from Oman, Yemen, KSA, Kuwait (Collingwood and Agosti 1996), and the UAE (Collingwood et al. 1997, Collingwood et al. 2011). *Pheidole indica* has been recorded from the Mediterranean and, the Malagasy Regions, and the New World (Fischer and Fisher 2013).

***Pheidole megacephala* (Fabricius, 1793)**
Formica megacephala Fabricius, 1793: 361 (s.), Mauritius (Former Ile De France). Malagasy.

Material examined: Oman: Jebel Akhdar, Alain, 23.07279°N, 54.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (1 major w, 4 minor w, 1 major w CASENT0922282, KSMA); Jebel Akhdar, Alain, 23.07237°N, 57.66187°E, 1889 m, 06.iv.2016, (M. R. Sharaf leg.) (3 major w, 8 minor w); Nakhl, 23.44696°N, 57.88062°E, 364 m, 02.iv.2016, (M. R. Sharaf leg.) (7 w) (All in KSMA).

Biological notes: *Pheidole megacephala* was found nesting under a stone amid cultivated pomegranate trees. It was also found in leaf litter and dry soil. Several unidentified silverfish (Thysanura) were observed inside the galleries of a nest under a rock.

Geographic range: *Pheidole megacephala* was originally described from Mauritius. It is a worldwide invasive species, especially throughout the tropics (Sarnat et al. 2015). In the Arabian Peninsula it has been collected from Oman, KSA, Kuwait, Yemen (Collingwood and Agosti 1996), and the UAE (Collingwood et al. 2011).

***Pheidole parva* Mayr, 1865**
(Figs. 13 a-c, 14 a-c)
Pheidole parva Mayr, 1865: 98, pl. 4, fig. 28 (s. w.), Sri Lanka. Indomalaya.

Material examined: Oman: Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (2 major w, 2 minor w, KSMA; 1 major w, CASENT0922280, 1 minor w, CASENT0922281, CASC); Nakhl, 23.38803°N, 57.82937°E, 322 m, 02.iv. 2016, (M. R. Sharaf leg.) (11 minor w); Nakhl Region, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (3 minor w); Muscat, 23.61760°N, 58.49364°E, 81 m, 07.iv.2016, (M. R. Sharaf leg.) (2 minor w); Date palm, no specific locality, 280 m, 06.iv.2016, (A. Polaszek leg.) (3 minor w); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.) (36 minor w, 17 major w); Muscat, KOM, Alraha village, 23.56665°N, 58.17630°E, 74 m, 18.i.2017, (M. R. Sharaf leg.) (6 minor w); Wadi Fanga, 23.45336°N, 58.11807°E, 166 m, 20.i.2017, (M. R. Sharaf leg.) (21 minor w) (All in KSMA).

Biological notes: This species was found nesting in moist soil under a rock next to a date palm tree. It was also collected from wet leaf litter under a date palm tree. *Pheidole parva* was also observed inhabiting leaf litter in well-irrigated public parks.

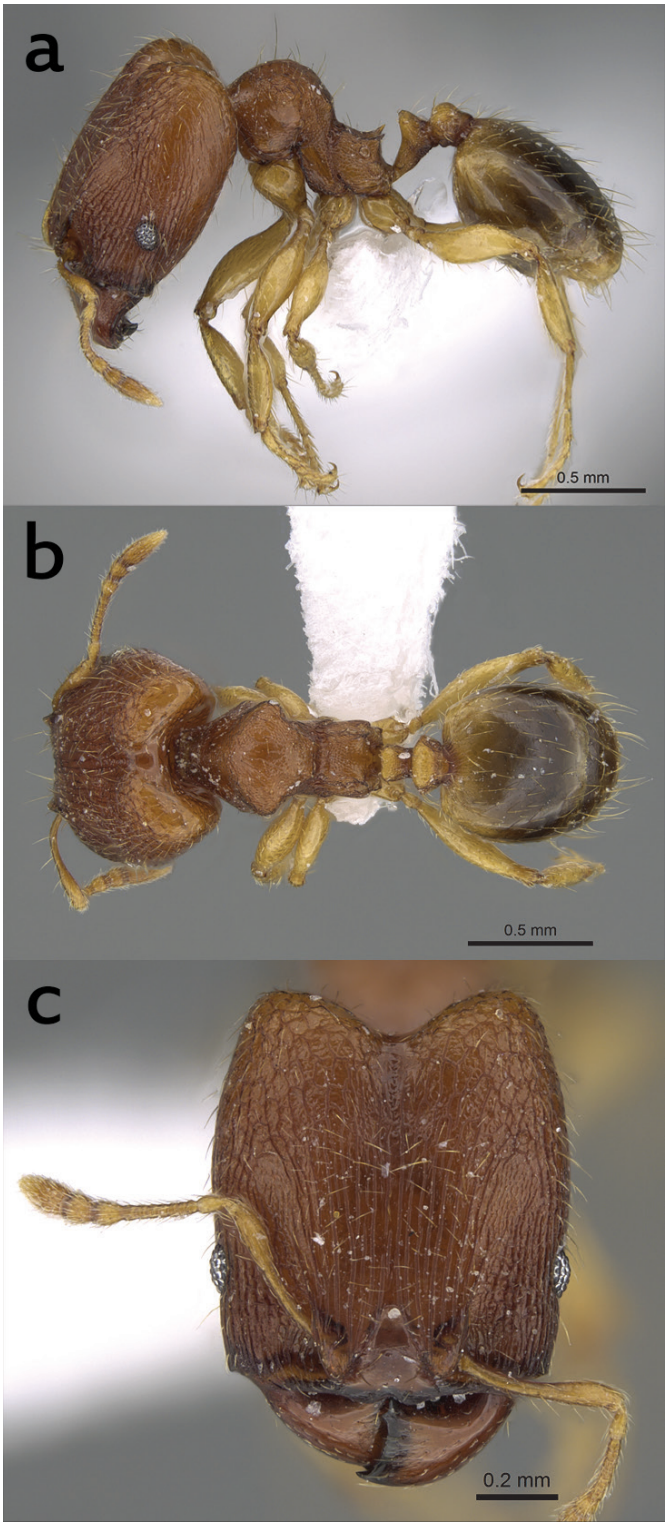

Fig. 13. (a-c): *Pheidole parva* Mayr, major worker, CASENT0922280, a. body in profile; b. body in dorsal view; c. head in full-face view.

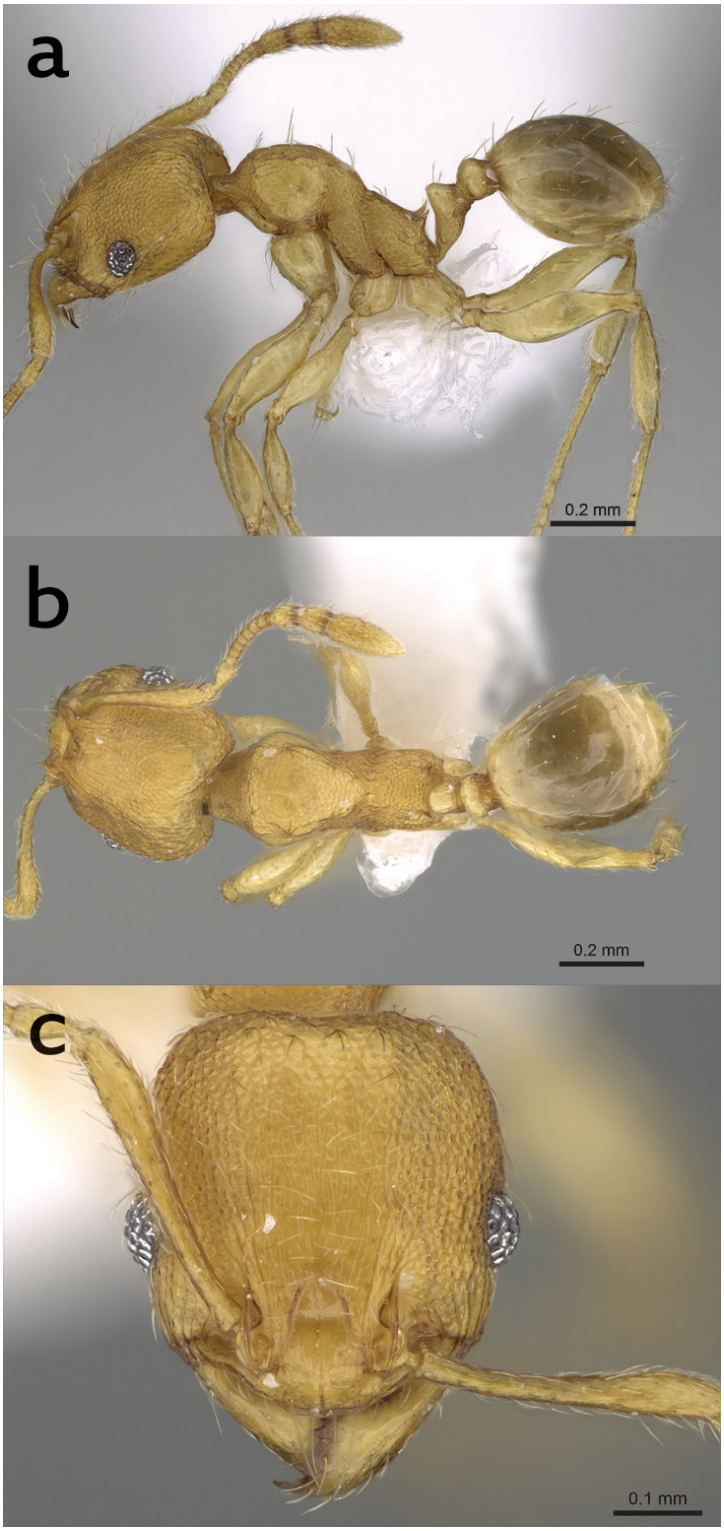

Fig. 14. (a-c): *Pheidole parva* Mayr, minor worker, CASENT0922281, a. body in profile; b. body in dorsal view; c. head in full-face view.

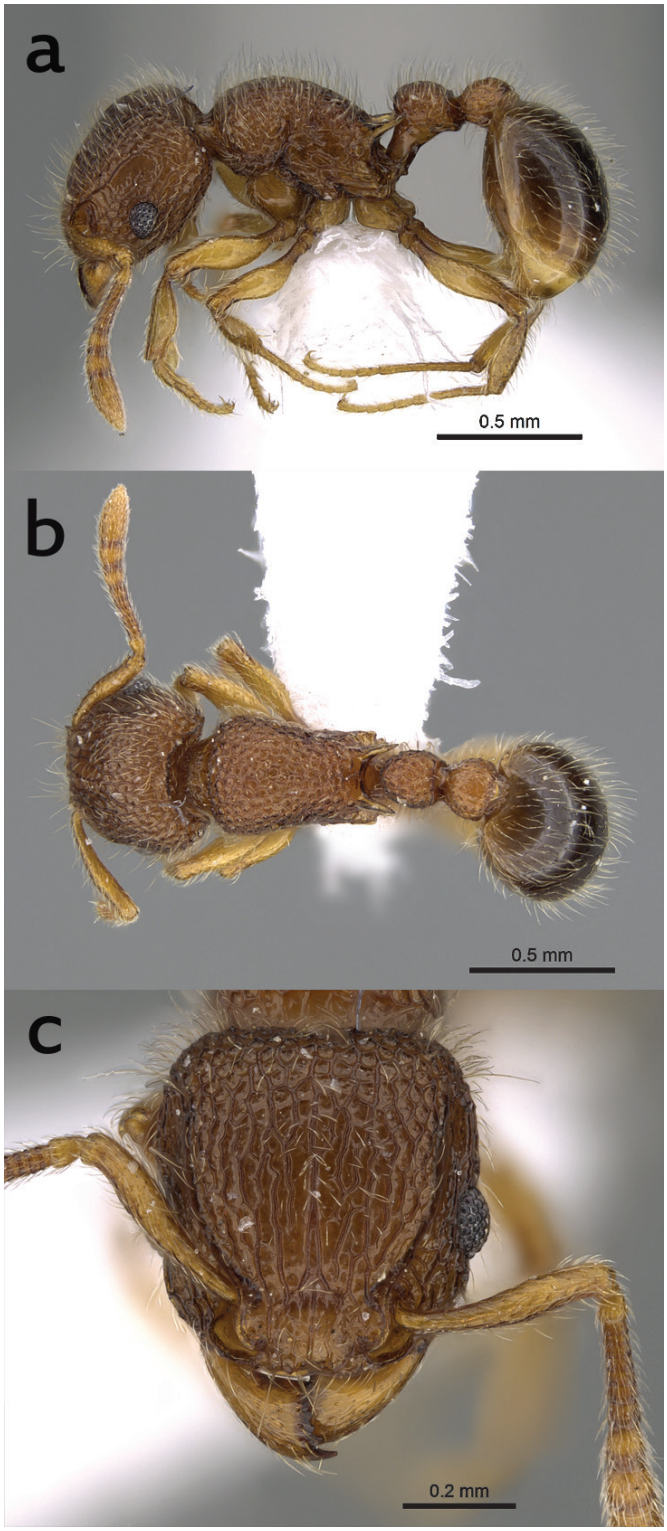

Fig. 15. (a-c): *Tetramorium lanuginosum* Mayr, CASENT0922287, a. body in profile; b. body in dorsal view; c. head in full-face view.

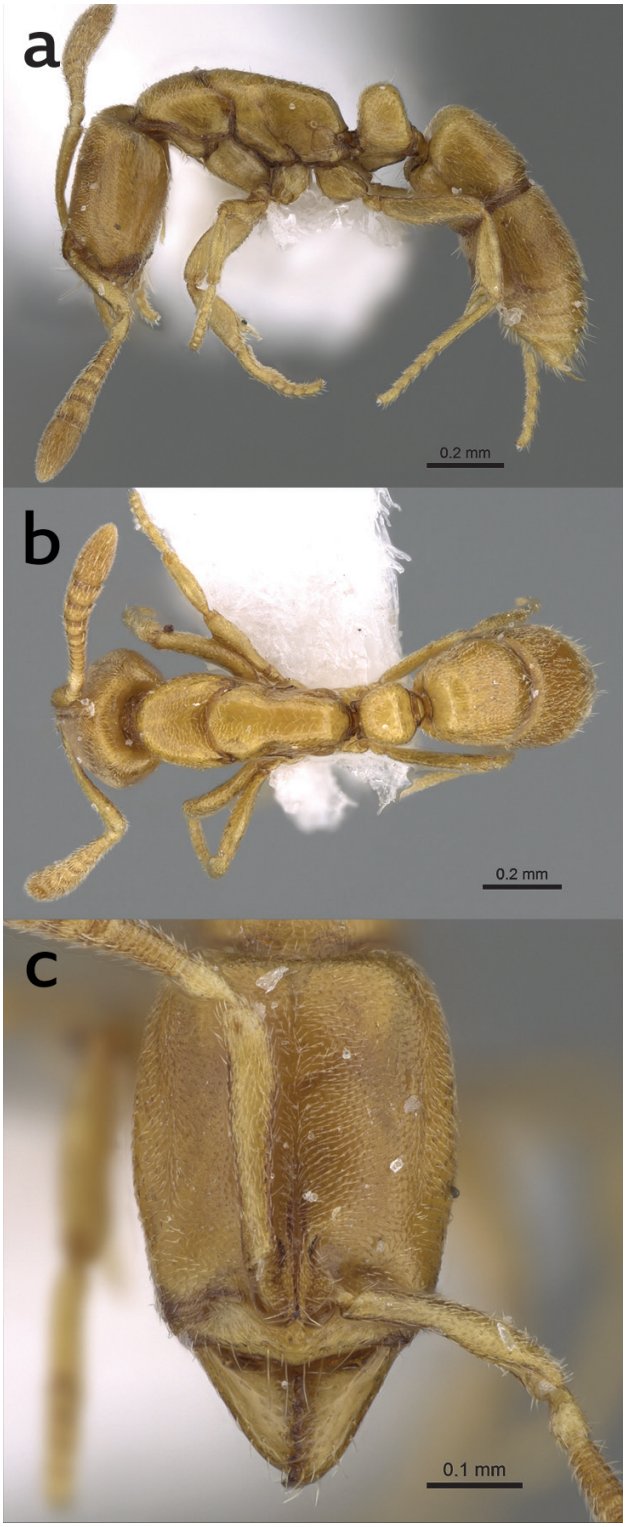

Fig. 16. (a-c): *Hypoponera abeillei* (André), CASENT0922299, a. body in profile; b. body in dorsal view; c. head in full-face view.

Geographic range: *Pheidole parva* originally described from Sri Lanka. It is native to the Indo-Malay Region (Sarnat et al. 2015). This species has been introduced to several countries around the world (*e.g.* Seychelles, Mauritius, KSA, and the UAE (Fischer and Fisher 2013)). The present collections represent the first record from Oman.

***Tetramorium caldarium* (Roger, 1857)**
Tetrogmus caldarius Roger, 1857: 12 (w. q.), Poland. Palearctic.

Material examined: Oman: Jebel Akhdar, Alain, 23.07279°N, 54.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (3 w, KSMA; 1 w, CASENT0922289, CASC); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.) (21 w, KSMA).

Biological notes: This species was found nesting under a rock where the soil was dry and loose and in an area cultivated rose plantations. *Tetramorium caldarium* was also collected among leaf litter in a well-irrigated public park.

Geographic range: *Tetramorium caldarium* was described from Poland but now is distributed worldwide (Wetterer and Hita Garcia 2015). This species may be of African origin (Bolton 1980). It has been recorded from Oman, Yemen *(*Collingwood and Agosti 1996), KSA (Collingwood 1985), and the Socotra Archipelago (Collingwood et al. 2004, Sharaf et al., 2017a).

***Tetramorium lanuginosum* Mayr, 1870**
(Fig. 15 a-c)
Tetramorium lanuginosum Mayr, 1870: 976 (w.), Indonesia (Java). Indomalaya.

Material examined: Oman: Alfleh, Qurayat, 23.20460°N, 58.96920°E, 39 m, 08.iv.2016, (M. R. Sharaf leg.) (1 w, KSMA; 1 w, CASENT0922287, CASC); Nakhl Region, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (1 w); Qurayat, 23.20460°N, 58.96920°E, 39 m, 8.iv.2016, (M. R. Sharaf leg.) (1 w); Jebel Akhdar, Alain, 23.07237°N, 57.66187°E, 1889 m, 06.iv.2016, (M. R. Sharaf leg.) (1 w); Date palm plantation, 23.54333°N, 58.93333°E, 280 m, 06.iv.2016, (A. Polaszek leg.) (1 w); Hibra, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (7 w); Nakhl, 23.38803°N, 57.82937°E, alt. 322 m, 02. iv. 2016, (M. R. Sharaf leg.) (1 w); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.), (5 w); Wadi Fanga, 23.45336°N, 58.11807°E, 166 m, 20.i.2017, (M. R. Sharaf leg.) (1 w) (All in KSMA).

Biological notes: This species was found nesting under a stone next to a date palm tree where soil was moist. It was also found in leaf litter under a mango tree.

Geographic range: A species originally described from Indonesia, and distributed worldwide, especially in tropical and subtropical Regions (Wetterer 2010; Hita Garcia and Fisher 2011). *Tetramorium lanuginosum* has also been recorded from KSA (Collingwood and Agosti 1996) and the Socotra Archipelago (Collingwood et al. 2004, Sharaf et al., 2017a).

***Trichomyrmex mayri* (Forel, 1902)**
Monomorium (Parholcomyrmex) gracillimum var. *mayri* Forel, 1902: 209 (w.), India. Indomalaya.

Material examined: Oman: Muscat, Oman Botanical Garden, 23.55886°N, 58.12772°E, 98 m, 03.iv.2016, (M. R. Sharaf leg.) (1 w, KSMA, 1 w, CASENT0922297, CASC); Muscat, Al Qurm, 23.62405°N, 58.48891°E, 9 m, 09.iv.2016, (M. R. Sharaf leg.) (1 w); Nakhl, 23.44696 °N, 57.88062 °E, 364 m, 02.iv.2016, (M. R. Sharaf leg.) (9 w); Jebel Akhdar, Alain, 23.07279°N, 54.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (6 w); Nakhl, 23.38803°N, 57.82937°E, 322 m, 02.iv. 2016, (M. R. Sharaf leg.) (6 w); Muscat, 23.57532°N, 58.4379°E, 22 m, 03.iv.2016, (M. R. Sharaf leg.) (6 w); Jebel Akhdar, Alain, 23.13662°N, 57.6351°E, 2334 m, 04.iv.2016, (M. R. Sharaf leg.) (3 w); Nakhl Region, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (1 w); Muscat, 23.07343°N, 58.95742°E, 239 m, 08.iv.2016, (M. R. Sharaf leg.) (3 w); Muscat, 23.62418°N, 58.48927°E, 2 m, 02.iv.2016, (M. R. Sharaf leg.) (6 w); Date palm, no specific locality, 280 m, 06.iv.2016, (A. Polaszek leg.) (8 w); Muscat, 23.61760°N, 58.49364°E, 81 m,

07.iv.2016, (M. R. Sharaf leg.) (1 w); Muscat, KOM, Alraha village, 23.56665°N, 58.17630°E, 74 m 18.i.2017, (M. R. Sharaf leg.) (2 w); Alkhoud village, 23.57154°N, 58.12166°E, 63 m, 19.i.2017, (M. R. Sharaf leg.) (1 w) (All in KSMA).

Biological notes: The nesting sites of *T. mayri* was found to be diverse. This species was collected by sifting moist leaf litter. Several workers were found foraging on the ground close to an *Acacia* tree. Many workers were observed foraging under a pomegranate tree. A nest series was collected from beneath a rock where the soil was dry and loose. Some additional workers were foraging under a small *Acacia* tree and carrying a dead moth. A nest series was collected from leaf litter under a date palm tree where the soil was soft and dry.

Geographic range: *Trichomyrmex mayri* was originally described from India. It is known from several regions of the world including the coastal zones of sub-Saharan Africa (Bolton 1987), the Arabian Peninsula (Collingwood 1985; Collingwood and Agosti 1996; Sharaf et al. 2013), and North Africa (Egypt) (Sharaf 2006). Bolton (1987) speculated that the origin of this species was from the Indian subcontinent.

Subfamily: Ponerinae

***Anochetus annetteae* Sharaf, 2017b**
Anochetus annetteae Sharaf, 2017b: 81, figs. 3, 7-9 (w.), Oman. Palearctic.

Material examined: Oman: Hibra village, Nakhl Region, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (MRS0311) (2 paratype w, KSMA, 1 paratype w, CASENT0919949, CASC); Wadi Fanga, 23.45336°N, 58.11807°E, 166 m, 20.i.2017, (M. R. Sharaf leg.) (10 w, KSMA).

Biological notes: *Anochetus annetteae* was found foraging in leaf litter and in date palm plantations.

Geographic range: *Anochetus annetteae* is described from Oman and has not been recorded elsewhere in the region.

***Brachyponera sennaarensis* (Mayr, 1862)**
Ponera sennaarensis Mayr, 1862: 721 (w.), Sudan. Afrotropic.

Material examined: Oman: Nakhl, 23.49327°N, 57.83421°E, 190 m, 05.iv.2016, (M. R. Sharaf leg.) (1 q, KSMA; 1 q, CASENT0922273, 1 w, CASENT0922274, CASC); Alfleh, Qurayat, 23.20460°N, 58.96920°E, 39 m, 08.iv.2016, (M. R. Sharaf leg.) (4 w); Muscat, 23.62418°N, 58.48927°E, 2 m, 02.iv.2016, (M. R. Sharaf leg.) (6 w); Jebel Akhdar, Alain, 23.07279°N, 54.66179°E, 1949 m, 04.iv.2016, (M. R. Sharaf leg.) (3 w); Muscat, KOM, Alraha village, 23.56665°N,58.17630°E, 74 m 18.i.2017, (M. R. Sharaf leg.) (3 w); Alkhoud village, 23.57154°N, 58.12166°E, 63 m, 19.i.2017, (M. R. Sharaf leg.) (1 w); Masfat Al-Ebreien, 23.14069°N, 57.31261°E, 903 m, 21.i.2017, (M. R. Sharaf leg.), (2 w); Wadi Fanga, 23.45336°N, 58.11807°E, 166 m, 20.i.2017, (M. R. Sharaf leg.) (2 w) (All in KSMA).

Biological notes: *Brachyponera sennaarensis* is a common ponerine ant of the Arabian Peninsula (Collingwood and Agosti 1996). This species was found nesting under a stone and foraging on the ground. Several individuals were found in moist soil under a stone next to a date palm tree. In the KSA it has been observed inhabiting sites near human settlements and has an apparent preference of hot habitats (Sharaf & Aldawood, unpublished data)

Geographic range: *Brachyponera sennaarensis* was originally described from Sudan. It is the most successful invasive ponerine species of the Region (Collingwood 1985, Collingwood and Agosti 1996; Collingwood et al. 2011, Sharaf et al., 2017a). The species has established in a wide variety of sites including agricultural landscapes, and both undisturbed and disturbed native sites (Sharaf et al., 2017a).

***Hypoponera abeillei* (André, 1881)**
(Fig. 16 a-c)
Ponera abeillei André, 1881: 61. (w.), France (Corsica). Palearctic.

Material examined: Oman: Jebel Akhdar, Alain, 23.07237°N, 57.66187°E, 1889 m, 06.iv.2016, (M. R. Sharaf leg.) (4 w, KSMA; 1 w, CASENT0922299, CASC); Wadi Fanga, 23.45336°N, 58.11807°E, 166 m, 20.i.2017, (M. R. Sharaf leg.) (4 w); Muscat, KOM, Alraha village, 23.56665°N,58.17630°E, 74 m, 18.i.2017, (M. R. Sharaf leg.) (4 w) (All in KSMA).

Biological notes: This species was found in leaf litter where soil was dry.

Geographic range: This species was originally described from France (Corsica) and with a broad circum-Mediterranean distribution including Portugal, Spain, Italy, Israel, KSA, Egypt, and Tunisia (Bolton & Fisher 2011). The present collections are new records for Oman.

DISCUSSION

The ant fauna of Oman documented in the literature prior to this study included 111 species (Collingwood 1985, Collingwood & Agosti 1996, Sharaf et al. 2011a, Sharaf et al. 2016, Sharaf et al. 2017b), occurring in most types of habitats sampled during the two expeditions described here. Results of this study has increased the number of ant species in Oman to 123, species including two additional genera, *Aphaenogaster* and *Erromyrma*, and ten new species records for Oman (Tables 1 & 2). Additionally, two new species, *A. asmaae* and *A. sarae* are described from Oman and KSA. Six species (*C. emeryi, M. exiguum, P. longicornis, P. megacephala*, *T. melanocephalum,* and *T. lanuginosum)* of the 123 species are taxa spread by worldwide human commerce (Wetterer 2015).

The first record of the genus *Aphaenogaster* from the Arabian Peninsula (KSA) was based on a single worker (Collingwood 1985) of *A. gibbosa* (Latreille, 1798) (=*A. muschtaidica* Emery, 1908) from Wadi Horaah (1600 m), 21.v.1982, and collected by W. Buttiker (WMLC). Currently, three species are known from the Arabian Peninsula, *A. asmaae*, *A. gibbosa,* and *A. sarae*. *Aphaenogaster asmaae* and *A. sarae* seem to prefer sites of mid- and high altitudes (Jebel Akhdar, 1949 m; Dhi Ayn Archeological Village, 735 m; Baha Aqaba, 1235 m). Several published records for the genus support this observation. Three new species were described from Turkey from sites of mid- and higher elevation (Kiran et al. 2008), *A. aktaci* Kiran & Tezcan (Izmir, 1160 m), *A. maculifrons* Kiran & Tezcan (Konya-Ak¸sehir-Eskiler Village, 1770 m; Konya-Ak¸ sheer, 7 km SW, 1500 m; Aksehir-Çakıllı Village, 1620 m), and *A. radchenkoi* Kiran & Tezcan from different locations above 1000 m. In addition, *A. iranica* Kiran & Alipanah was described from Iran from two sites of higher altitude (Mashhad, Shāndiz, 985m; Khoshyeylāgh, Beh-Cheshmeh station, 1554m) (*Kiranet al. 2013)*. Two species, *A. syriaca* Emery, 1908, and *A. phillipsi* Wheeler & Mann, 1916, were reported from southern Sinai, Egypt, occurring in two valleys in Saint Catherine at altitudes of more than 1500 m (Mohamed et al., 2001).

The genus *Erromyrma* was recently established for the single species *E. latinodis,* which was previously treated as a species of *Monomorium* (Bolton 1987). *Erromyrma latinodis* has successfully been introduced into numerous countries including Bangladesh, Christmas Islands, Comoro Islands, Hawaii, India, Japan, Madagascar, Malaysia, Mozambique, New Zealand, Sri Lanka, Taiwan, Tanzania, and Thailand. Fisher & Bolton (2016) considered this species of Indian origin. For the Oman records, both sites (Jebel Akhdar, and Masfat Al-Ebreien) were characterized by agricultural production and tourism. Introduction of this species into these sites seems likely.

Pheidole parva was observed nesting in diverse habitats including in soil, under stones, in leaf litter, in date palm plantations, and in public parks, in both dry and moist soils. The ability of this species to adapt to diverse habitats has allowed it to become widely introduced across the Old World (Fischer & Fisher 2013). On the Arabian Peninsula, *P. parva* was introduced by human commerce to the KSA and the UAE *(*Fischer & Fisher 2013). We anticipate that, with additional collecting, this species may be relatively widespread in Oman.

The rare species, *Anochetus annetteae* is known from a date palm plantation of the Nakhl Region, Oman (Sharaf et al. 2017b). During this study, this species was collected from Wadi

Fanga, a region of dense date palm trees, possibly indicating its close association with this habitat.

Based on information available in literature and species recently described from Oman, the endemic species of Oman is represented by 13 species (11%) which are only known from the country, *Camponotus gallagheri*, *Lepisiota dhofara*, *Cardiocondyla gallagheri*, *Messor muscatus*, *Monomorium acutinode*, *M. aeyade*, *M. brunneolucidulum*, *M. dirie*, *M. gallagheri*, *M. marmule*, *M. matame*, *Solenopsis omana*, and *Anochetus annetteae*. There are probably additional species of ants that may be endemic because of the large area of the country and the number of unexplored localities.

Combining our sampling records with available records listed in Collingwood (1985), Collingwood & Agosti (1996), Sharaf et al. (2011a, 2016, 2017b) indicates that Oman hosts at least 123 species of ants belonging to 24 genera and four subfamilies (Tables 1 & 2). We anticipate that future collecting efforts will add additional material to the faunal list of Oman, especially if regions such as the Hajar Mountains, Dhofar, and remote desert habitats are surveyed. This future material will provide a more complete picture of species endemism, and also will allow comparing the ant fauna of Oman with the fauna of adjacent countries

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