ANT FAUNA (HYMENOPTERA: FORMICIDAE) OF FARASAN ISLANDS PROTECTORATE (SAUDI ARABIA)

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INTRODUCTION

Few contributions were carried out on the Saudi Arabian ant fauna. Therefore, the taxonomy of this group of insects is relatively incomplete and much more research being needed. The first study was that of Collingwood (1985) in which a list and keys to 164 species, 156 of which were recorded for the first time from Saudi Arabia; more over, 146 were new records for the Arabian Peninsula as a whole. In addition, ten new species were described. The second study was that of Collingwood and Agosti (1996) in which 256 species for the entire Arabian Peninsula were listed and 56 new species were described. The most recent study on the Arabian ant fauna was done by Collingwood *et.al.* (2004) which was conducted on the Socotra Archipelago. They recorded 18 species, one of them, *Monomorium nimihil* Collingwood, 2004, was described as new species.

Farasan islands protectorate lies in the southern eastern part of the Red Sea and far from Jizan city by about 40 km. These islands extend between 16°20'-17°20'N and 41°24'-24°28'E, and are located in the position where the Red Sea has its maximum width, 360 km. Farasan Archipelago includes a large number of islands, the largest one is the major Farasan, El-Sokayed and Qomah. The first island is the largest one with 66 km length and 5-8 km width.

Farasan Islands are one of the most interesting areas in all the Arabian Peninsula. In the previously mentioned studies, Collingwood (1985) and Collingwood and Agosti (1996) said that no comprehensive survey was carried out on these islands. Therefore, the ant fauna of this area is completely unknown. The present paper is the first contribution to study the ant fauna of these islands. It presents a list of the ant species recorded from Farasan Islands.

MATERIAL AND METHODS

The specimens concerned in this study were collected from Farasan Islands, 42°11'E, 16°42'N, Altitude 9 m.a.s.l. during two field trips in 25.II.2005 and 26.IV.2006 by Mostafa Sharaf. All measurements were taken in millimetres.

RESULTS AND DISCUSSION

I. Subfamily Formicinae

Camponotus adenensis Emery, 1893

Camponotus maculates adenensis Emery, 1893 -Bull. Soc. Ent. Fr. 62: 257.

Camponotus adenensis. – Collingwood, 1985; Fauna of Saudi Arabia 7: 277.

Type-locality: Yemen.

Diagnosis: Body colour uniformly dark, legs yellow. Head with occasional fine punctures, not pits; gena bare not fringed with projecting hairs, subcephalic hairs sparse; dorsal outline of alitrunk a more or less continuously curved. Gaster more or less shining with sparse pubescence.

This species was observed foraging on a small shrub with another species, *Camponotus sericeus* (Fabricius, 1798).

It was recorded from Saudi Arabia and recently recorded from Egypt (Gebel Elba) by specimens collected by Dr. Hassan H. Fadl (Ain Shams University. (Sharaf, 2006).

Camponotus aegyptiacus Emery, 1915

Camponotus maculatus aegyptiacus Emery, 1915 -Bull. Soc. Ent. Fr.: 79.

Camponotus aegyptiacus. - Baron Urban. 1972; Verh. Natur. Ges. Basel 82 (1): 130.

Type-locality: Egypt.

Diagnosis: Soldier (large worker). TL: 14-18. This species has a great variation in colour; head and antennal scapes dark brown or blackish brown, funiculus testaceous, yellow or brownish yellow; mandibles reddish black; pro-and mesonotum reddish brown, legs reddish yellow, propodeum and petiole yellow, gaster dark reddish brown with two or three merging yellow blotches on its sides giving an irregular banded pattern. Pubescence few and sparse. Head longer than broad, and broader than alitrunk, underside of head with 6 pairs of

hairs; subcephalic hairs few and sparse; eyes large; occiput convex, with one pair of hairs; pronotum with four pairs of hairs; mesonotum with two; propodeum with one. Petiole, in lateral view, with a slightly curved anterior face and a long straight one.

This is a common species in the Arabian Peninsula, it was recorded from Saudi Arabia, Kuwait, Yemen and Oman (Collingwood and Agosti, 1996).

Camponotus sericeus (Fabricius, 1798)

Formica sericea Fabricius, 1798 -Suppl. Ent. Syst.: 279.
Camponotus sericeus.- Mayr, 1862; Verh. zool.-bot. Ges. Wien.12: 675.

Type-locality: Senegal.

Diagnosis: (Large workers). TL: 12-17.4. Body black and dull; head and antennae reddish black; sometimes head, alitrunk and appendages reddish black, whole body finely, densely sculptured and hairy. Body densely and coarsely punctated. Head little broader than long; mandibles armed with 6 strong teeth and provided with many long yellow hairs; anterior border of head covered with long stiff silvery hairs; occiput straight. In profile, the dorsal outline of alitrunk is interrupted by a deep mesopropodeal groove; propodeum broadly dentate. Petiole massive, globular and with many long stiff hairs. Gaster globular covered with thick golden pubescence and many long stiff yellow hairs.

This species was recorded from different countries in Arabian Peninsula especially throughout western and central Arabia including Saudi Arabia, Oman and Yemen.

Lepisiota obtusa (Emery, 1901)

Acantholepis carbonaria var. *obtusa* Emery, 1901 -Boll.Soc.ent.Ital.33: 63.
Acantholepis *obtusa*.-Collingwood, 1985; Fauna of Saudi Arabia 7: 296.

Diagnosis: Small, opaque, dull black species. Antennal scape short, over-reaching the occipital margin by a third of its length or less. Whole alitrunk dorsum covered with long pale hairs. Petiole simply dentate. Head and gaster distinctly sculptured.

This species was previously recorded from Saudi Arabia, Yemen and Oman and present in northern eastern Africa (Collingwood and Agosti, 1996).

Lepisiota sp.

Diagnosis: Body colour black, smooth and shining. Antennal scape long, over-reaching the occipital margin by half its length or more. Dorsum of alitrunk without any standing hairs. This species is similar to *Lepisiota riyadha* Collingwood & Agosti, 1996 in the bare alitrunk but it can be distinguished from it by the few scattered hairs on the second half of the gaster.

Paratrechina longicornis (Latrielle, 1802)

Formica longicornis Latrielle, 1802 -Hist. Nat. Fourm. : 113.

Prenolepis longicornis Roger, 1863 -Berl. Ent. Zeit. 7: 10.

Paratrechina longicornis Emery, 1925; Gen. Ins. 183: 217.

Paratrechina longicornis Tiwari *et.al.*, 1994 - Fauna of West Bengal series 3, part 8: 280.

Type-locality: Senegal.

Diagnosis: (Worker) . TL: 2.2-2.5. Body colour light or dark brown; antennae and leg yellow and very long. The whole body with very long setae except antennae; scapes and tibiae without pubescence. Body sculpture very fine forming a network pattern. Head with two median longitudinal rows of setae; scapes usually without bristles or hairs and surpassing the occipital margin by about two thirds of its length and reaching the mesonotum; eyes relatively large. Alitrunk with a distinct mesopropodeal suture; propodeum bare.

This species is one of the most widely distributed cosmopolitan species.

II. Subfamily Myrmicinae

Monomorium destructor (Jerdon, 1851)

Atta destructor Jerdon, 1851 -Madras J. Lit. Sci. 17: 105.

Myrmica gracillima F.Smith, 1861 - J. Proc. Soc. Lond. 6: 31-35. [synonymy by Bolton 1987: 324].

Monomorium destructor – Emery, 1893; in Della Torre, Cat. Hym. 7: 60.

Monomorium gracillimum –Collingwood, 1985; Fauna of Saudi Arabia 7: 270. [synonym].

Type-locality: India.

Diagnosis: (Worker). TL: 2.62 (range 1.8-3.5). Head, alitrunk, petiole and postpetiole uniformly glossy yellow, varying in shade from light yellow to dull brownish yellow; gaster dark brown to blackish brown. In general, eyes of small

workers relatively somewhat larger in relation to head width than in larger workers; antennae relatively longer in small individuals and shorter in large individual; scape reaching the occipital margin in smallest workers but falling short of the margin in larger individuals. Alitrunk in profile with a convex promesonotum and an impressed metanotal groove. Petiole node in dorsal view globular to subglobular; occipital margin of head with 2-4 pairs of hairs forming a transverse row; dorsum of head in front of this row but behind the frontal lobes with 1-4 pairs of hairs straddling the midline.

In smallest workers, propodeal dorsum always finely transversely striate to rugose and usually with punctate sculpture; promesonotum usually smooth and shining with scattered hairy pits; pronotum sides smooth, the remainder of the sides of alitrunk punctate to reticulate punctate. First gastral tergite smooth except for hairy pits.

This species is a successful tramp species, widely distributed throughout the tropical zones of the world and being spreading into temperate zones by commercial activity (Bolton, 1987). Collingwood and Agosti (1996) have recorded this species from Saudi Arabia, Kuwait, Yemen and Oman.

Monomorium salomonis (Linnaeus, 1758)

Formica salomonis Linnaeus, 1758 -Syst. Nat. ed. 10, 1: 580.
Monomorium salomonis –Roger, 1862; Berl. Ent. Zeit. 6: 294.

Type-locality: Egypt.

Diagnosis: (Worker). TL: 3; HL: 0.77; HW: 0.65; SL: 0.7; SI: 107.6. Colour reddish brown to brown, monomorphic, usually with some variation in size. Head longer than broad; mandibles sculptured and longitudinally striated; cephalic dorsum usually sculptured, the sculpture ranging from dense reticulate punctation to faint superficial reticulate patterning; eyes distinct generally with 6 or more ommatidia in the longest row, eyes circular to roughly oval; underside of the head bare. Alitrunk with a distinct mesopropodeal furrow; propodeal spiracle circular to subcircular; propodeum rounded between dorsum and declivity; propodeum dorsum usually sculptured but never transversely striate. Body pilosity rare; petiole and postpetiole each with one pair of hairs. Alitrunk, petiole and postpetiole sculptured, first gastral tergite shagrinate.

This species has a wide distribution in north Africa and its distribution in Arabia is restricted to Saudi Arabia and Kuwait (Collingwood and Agosti, 1996).

Tetramorium khyarum Bolton, 1980

Tetramorium khyarum Bolton, 1980 -Bull. Br. Mus. nat. Hist. 40(3): 327.

Type-locality: Nigeria.

Diagnosis: (Worker). Large species, bicoloured species, body and appendages yellow or yellowish brown, gaster brown. Propodeal dorsum with one or two pairs of suberect hairs; propodeal spines strongly developed; tibiae without suberect hairs on the extensor surface; petiole in dorsal view longer than broad. Body strongly sculptured. Gaster smooth and shiny.

This species was described from Nigeria by Bolton (1980) and was recorded from Saudi Arabia (Collingwood, 1985) and Yemen (Collingwood and Agosti, 1996). It seems to have a good distribution in the southern part of Arabia (Asir province).

III. Subfamily Ponerinae

Pachycondyla sennaarensis (Mayr, 1862)

Ponera sennaarensis Mayr, 1862 -Verh. Zool.-bot. Ges. Wien 12: 72.
Pachycondyla sennaarensis -André, 1890; Revue Ent. 9: 316.

Type-locality: Sudan.

Diagnosis: (Worker). Robust black ant with a deep mesopropodeal furrow and relatively large eyes; mandibles with a dorsolateral pit.

It is an aggressive species with a good distribution throughout African tropics and was recorded from several countries in the Peninsula including Saudi Arabia, Oman and Yemen (Emery, 1881), and from Kuwait, United Arab Emirates (Collingwood and Agosti, 1996) and it appears to be the most common member of the subfamily in southern Arabia. This species is extremely common in the island and is apparently almost entirely confined to human settlement and is a disturbing species to inhabitants on the island with its painful sting with at least 30 cases of human allergic reaction and two deaths due to anaphylactic shocks following its sting in Al Ain, United Arab Emirates during 1992 (Dib *et. al.*, 1992).

Farasan islands ant fauna has not been studied before, even during the comprehensive studies on the Arabian Formicidae carried out by Collingwood (1985) and Collingwood and Agosti (1996). It had been completely excluded from the surveyed sites, this may be due to the vast area of the Arabian Peninsula included in these studies. Therefore, nothing is known about the ant fauna of these groups of islands and this study could be the first contribution for the knowledge of it. These islands may support a relatively an impoverished native ant fauna supplemented with many species introduced by man. This low species richness mentioned in the present study may be similar to a certain degree with the poor ant fauna of Socotra Archipelago given by Collingwood *et. al.* (2004) in which only eighteen species have been recorded and only one new species, *Monomorium nimihil*, had been described from the entire island. As mentioned before, many of the species here recorded have been transferred to Farasan Islands by human commerce and this human impact on the fauna there takes place daily. This hypothesis can be confirmed by the wide distribution of these species in Arabia like *Camponotus adenensis* Emery, 1893, *Camponotus aegyptiacus* Emery, 1915, *Camponotus sericeus* (Fabricius, 1798), *Lepisiota obtuse* (Emery, 1901), *Paratrechina longicornis* (Latrielle, 1802), *Monomorium destructor* (Jerdon, 1851), *Monomorium salomonis* (Linnaeus, 1758), and *Pachycondyla sennaarensis* (Mayr, 1862).

The authors believe that Farasan Islands have few native ant species, of the ten recorded species only one seems to be native *Lepisiota* sp., mentioned in the text, which has not been recorded in Collingwood (1985) and Collingwood and Agosti (1996). Therefore, it appears to be undescribed species.

Unfortunately, its has not been possible for the authors to carry out survey in the other groups of islands which could add further species to the ant list of the Arabian fauna.

SUMMARY

A list of ten ant species of Farasan Islands (Saudi Arabia) is presented, *Camponotus adenensis* Emery, 1893, *Camponotus aegyptiacus* Emery, 1915, *Camponotus sericeus* (Fabricius, 1798), *Lepisiota obtuse* (Emery, 1901), *Lepisiota* sp., *Paratrechina longicornis* (Latrielle, 1802), *Monomorium destructor* (Jerdon, 1851), *Monomorium salomonis* (Linnaeus, 1758), *Tetramorium khyarum* Bolton, 1980 and *Pachycondyla sennaarensis* (Mayr, 1862), with synopses on their diagnosis and distribution.

Key words: Insecta, Hymenoptera, Formicidae, ant, Farasan Islands, protectorate, Saudi Arabia.

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