Order Hymenoptera, family Mymaridae
John T. Huber, Gennaro Viggiani and Ricardo Jesu

INTRODUCTION

The family Mymaridae includes the smallest known insects, all parasitoids in the eggs of other insects (Huber, 1986) except for two that parasitize larvae of a species of Eulophidae (Huber et al., 2006). Members of the family are commonly known as fairyflies because of their small size and delicate, fringed wings. An example of a typical mymarid wasp can be seen in Annex 1. We present an illustrated key to both sexes of the 13 mymarid genera found so far in the entire Arabian Peninsula or close by. In addition, we give an estimate of the number of morphospecies for some of the genera for the UAE and Yemen, the two countries best surveyed for Chalcidoidea, including Mymaridae. Genera with more than one species will require further study to sort out the species properly so that useful identification keys for the region can eventually be prepared. These species revisions, especially for large genera such as Polynema and Gonatocerus, are beyond the scope of the present work but are necessary before species names can reliably be applied to the Mymaridae of the UAE. We do not name the species here unless we are certain of their identity. The species we know so far are listed in Table 1. Only nine species, belonging to three genera, Gonatocerus, Anagrus and Erythmelus, were previously recorded from the Arabian Peninsula (Jesu & Viggiani, 2004, 2006; Triapitsyn et al., 2007).

MATERIALS AND METHODS

About one thousand specimens of Mymaridae from Yemen and the UAE were collected and sorted into vials of 70% alcohol by A. van Harten. The material from Yemen was sent for study to the two junior authors, and the UAE material was sent to the senior author. About 250 of the specimens from UAE were mounted on cards after critical point drying. Only part of the long series of the same species was prepared and most of the rest were stored in gelatin capsules placed under a card-mounted specimen of the same species. Some specimens were stored in ethanol. About 100 additional specimens were collected in Oman by M. Gallagher, M.J.E. Huber-Reader and the senior author from 1985–1988. Selected specimens from the UAE were slide mounted in Canada balsam according to the method described by Noyes (1982) and digital photographs of some were prepared using Auto-Montage TM Pro, © Synoptics Ltd and retouched using Adobe Photoshop®. The specimens were collected by A. van Harten unless otherwise indicated. The material from Yemen was stored in 70% ethanol and almost all specimens were slide mounted in Canada balsam phenol.

Specimens are deposited in the United Arab Emirates Invertebrate Collection, Dipartimento di Entomologia Agraria “Filippo Silvestri” (Portici, Italy), Università di Napoli “Federico II” (Naples, Italy), the Oman Natural History Museum (Muscat, Oman), and the Canadian National Collection of Insects (Ottawa, Canada). Collection locality and date are given for specimens illustrated. Data for all other specimens are best recorded when individual genera are revised.

Because of their small size, good slide preparations of entire or dissected specimens, preferably placed in a permanent mounting medium such as Canada balsam, are needed to see some of the distinguishing features. However, most genera have a characteristic look and, with experience, can readily be identified to genus from card- or point-mounted specimens examined under at least 50 x magnification. The specimens should preferably be critical point
dried so they do not shrivel. Distinguishing species within a genus usually requires slide-mounted specimens.

**Table 1.** Check list of species of Mymaridae recorded from the Arabian Peninsula and surrounding countries. An asterisk indicates a new record for the country.

<table>
<thead>
<tr>
<th>Species</th>
<th>Recordations</th>
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<tbody>
<tr>
<td><em>Anagrus atomus</em> (Linnaeus, 1767): Egypt, Iran, Israel, Turkey</td>
<td>(Triapitsyn, 2004).</td>
</tr>
<tr>
<td><em>Anagrus nigriceps</em> (Smits van Burgst, 1914): Iran, Israel</td>
<td>(Triapitsyn, 2004).</td>
</tr>
<tr>
<td><em>Anagrus sensillatus</em> Paoli, 1930: Somalia, Yemen</td>
<td>(Paoli, 1930), (Jesu &amp; Viggiani, 2006).</td>
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<tr>
<td><em>Anaphes diana</em> (Girault, 1911): Syria, Turkey</td>
<td>(Aeschlimann, 1986).</td>
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<tr>
<td><em>Erythmelus</em> (Erythmelus) flavovarius (Walker, 1846): Iran, Oman</td>
<td>(Triapitsyn, 2003), UAE (Triapitsyn et al., 2007).</td>
</tr>
<tr>
<td><em>Erythmelus</em> (Parallelaptera) funiculi (Annecke &amp; Doult, 1961): Yemen*</td>
<td></td>
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<tr>
<td><em>Erythmelus</em> (Parallelaptera) rex (Girault, 1911): Iran</td>
<td>(Triapitsyn, 2003).</td>
</tr>
<tr>
<td><em>Gonatocerus ater</em> Förster, 1841: UAE*</td>
<td></td>
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<tr>
<td><em>Litus cynipseus</em> Haliday, 1833: Turkey</td>
<td>(Triapitsyn &amp; Berezovskiy, 2004).</td>
</tr>
<tr>
<td><em>Mymar africanum</em> Annecke, 1961: Yemen*</td>
<td></td>
</tr>
<tr>
<td><em>Mymar taprobanicum</em> Ward, 1875: Egypt</td>
<td>Soyka, 1950), Yemen*</td>
</tr>
<tr>
<td><em>Stephanodes rediviolis</em> Perkins, 1905: Iran</td>
<td>Triapitsyn &amp; Berezovskiy, 2002), UAE*</td>
</tr>
<tr>
<td><em>Stephanodes similis</em> (Förster, 1847): Turkey</td>
<td>(Huber &amp; Fidalgo, 1997; Triapitsyn &amp; Berezovskiy, 2002).</td>
</tr>
<tr>
<td><em>Stethynium triclavatum</em> Enock, 1909: Egypt</td>
<td>(Triapitsyn, 2002); UAE*</td>
</tr>
</tbody>
</table>
Key to genera of Mymaridae of the Arabian Peninsula. Females.
[Antenna with apical 1–3 segment(s) widened to form a distinct clava (Plates 1–15)]

1 Tarsi 5-segmented ................................................................. 2
– Tarsi 4-segmented .................................................................. 6

2 Antenna with 8 funicle segments (Plates 8-10) ...................... Gonatocerus Nees
– Antenna with at most 7 funicle segments ................................ 3

3 Funicle 7-segmented, with segment 2 minute, ring-like (Plate 5); fore wing slightly but distinctly curved at apex (Plate 33) ........................................... Camptoptera Förster
– Funicle 6- or 5-segmented, with segment 2 similar in length to remaining segments; fore wing not curved at apex ................................................................. 4

4 Funicle 6-segmented, with short, ovoid club (Plate 11); fore wing very narrow (Fig 39); head and mesosoma reticulate (Plate 69); metasoma smooth (Plate 69), with gastral tergum 1 longer than following segments combined .................................. Litus Haliday
– Funicle 5-segmented (Plates 1, 4) ............................................. 5

5 Fore wing narrow, with venation about one-quarter wing length and posterior margin of wing with membrane distinctly incised behind venation (Plate 29); mesosoma uniformly dark brown or grayish; dorsellum strap-like (Plate 59) .................... Alaptus Westwood
– Fore wing wide, with venation more than half wing length and posterior margin of wing with membrane not incised (Plate 32); mesosoma yellow with brown areas (Plate 62); dorsellum rhomboidal (Plate 62) ...................................................... Arescon Walker

6 Metasoma with petiole distinct, longer than wide, tube-like (Plates 70, 74); body well sclerotized, the head and metasoma not shriveled when air dried ...................................... 7
– Metasoma with petiole inconspicuous, shorter than wide, ring-like (Plates 60, 61, 65, 73); body usually weakly sclerotized, head and metasoma shriveled when air dried ... 10

7 Fore wing oar-like, narrow and without membrane for most of length, then abruptly widening apically, frequently with brown spot in apical half of blade (Plate 40); hind wing without membrane, filamentous (Plate 55) ........................................... Mymar Curtis
– Fore wing normal in shape, with membrane for its entire length and without distinct brown apical spot; hind wing with membrane (Plates 44–54, 56–58) ..................... 8

8 Scape with rasp-like sculpture on inner surface (Plate 14); vertex with a large, shallow depression outside each ocellus; pronotal spiracle near anterior apex of notaulus (Plate 72), not at posterior angle of pronotum ......................................................... Stephanodes Enock
– Scape smooth or, at most, lightly sculptured on inner surface; vertex without depressions outside each ocellus or, if small depression present in front of mid ocellus, this much less than ocellar diameter; pronotal spiracle at posterolateral angle of pronotum (Plate 71) ................................................................. 9

9 Body yellow; antenna yellow except for distinctly contrasting, brown clava (Plate 6); Setae of head and mesosoma with truncate apices (Plate 64); axillar seta long and conspicuous, extending almost to posterior margin of scutellum ................................................................. Chaetomymar Ogloblin
– Body and antenna uniformly dark brown; setae of head and mesosoma with pointed apices (Plate 71); axillar seta short, inconspicuous, at most extending halfway towards posterior margin of scutellum (Plate 71) ........................................... Polynema Haliday

10 Eye in lateral view extending to back of head so gena extremely narrow or absent, at least dorsally; mandibles not meeting medially, greatly reduced to minute stubs without teeth; hypopygium prominent, extending to apex of gaster .......... Erythmelus Enock
Plates 1–5. Antennae, females. 1: *Alaptus* spec. (UAE, Sharjah Desert Park, 25.i–22.ii.2005); 2: *Anagrus* spec. (UAE, Sharjah Desert Park, 10.xii.2004); 3: *Anaphes diana* (Girault, 1911) (France, Hérault, St. Gély-du-Fesc, iii.1984, ex *Sitona* sp., leg. J.-P. Aeschlimann); 4: *Arescon* spec. (UAE, Sharjah Desert Park, 22.ii–9.iii.2005); 5: *Camptoptera* spec. (Oman, Salalah, ca. 500 m, coastal hills and scrub, 12.x.1985, sweeping, leg. J. & M. Huber-Reacher). Scale line = 0.1 mm.
Eye in lateral view not extending to back of head so gena at least half as wide as eye width; mandibles meeting medially, with 3 or 4 teeth; hypopygium inconspicuous ....11

11 Posterior scutellum entire (Plate 61); propodeum with median groove (Plate 61); body black or very dark brown ................................................................. Anaphes Haliday
– Posterior scutellum divided into two lobes by median longitudinal groove (Plates 60, 73); propodeum without median groove; body pale coloured, yellowish to light brown ...

12 Antennal clava 1-segmented (Plate 2); posterior scutellum with each lobe about as long as wide (Plate 60); fore wing narrow, without distinct lobe behind venation (Plate 30) ....

Anagrus Haliday
– Antennal clava 3-segmented (Plate 15); posterior scutellum with each lobe about twice as long as wide (Figure 1); fore wing wider, with more prominent lobe behind venation (Plate 43) .......................................................... Stethynium Enock

Key to genera of Mymaridae of the Arabian Peninsula. Males.
[Antenna filiform, the apical segment(s) similar in width to preceding segments (Plates 16–28)

1 Tarsi 5-segmented ........................................................................................................... 2
   – Tarsi 4-segmented ....................................................................................................... 6
2 Flagellum 11-segmented .............................................................................................. 3
   – Flagellum at most 10-segmented (Plate 20) ............................................................ 4
3 Fore wing venation not more than 0.4 × wing length (Plates 36–38); genitalia without phallobase or parameres, aedeagus without apodemes (Figure 8) ..... Gonatocerus Nees
   – Fore wing venation at least 0.5 × wing length (Plate 32); genitalia with a boat-shaped phallobase and parameres but without volsellar digitii, and aedeagus with apodemes (Figure 4) ................................................................. Arescon Walker
4 Flagellum 10-segmented, with segments 2 and 4 minute, ring-like (Plate 20); fore wing with posterior margin not incised behind venation, and posterior margin curved apically so apex of wing appearing distinctly curved (Plate 33); genitalia reduced to only a simple aedeagus (Figure 5) ................................................................. Camptoptera Förster
   – Flagellum 8- or 9-segmented, without ring-like segments ...................................... 5
5 Flagellum 8-segmented (Plate 16); fore wing with posterior margin incised behind venation (Plate 29); male genitalia with a short phallobase, without parameres and with rather long volsellar digitii (Figure 1) ....................................................... Alaptus Westwood
   – Flagellum 9-segmented; genitalia with curved phallobase (in lateral view), with two long setae extending to base of volsellar digiti, without parameres and volsellar digiti with two hooks (Figure 9) ................................................................. Litus Haliday
6 Metasoma with petiole distinct, longer than wide, tube-like (Plates 70, 74); body well sclerotized ........................................................................................................... 7
   – Metasoma with petiole inconspicuous, shorter than wide, ring-like; body lightly sclerotized ................................................................. 10
7 Fore wing oar-like, narrow and without membrane for most of length, then abruptly widening apically, usually with brown spot in apical half of blade (Plate 40); genitalia with phallobase spoon-shaped, with long parameres and without volsellar digitii (Figure 10) ................................................................. Mymar Curtis
   – Fore wing normal in shape, with membrane for its entire length and without distinct brown apical spot ................................................................. 8
8 Scape with rasp-like sculpture on inner surface (Plate 27); vertex with a large, shallow depression outside each ocellus; pronotal spiracle near anterior apex of notaullus (Plate 72), not at posterior angle of pronotum; genitalia as in *Mymar*, but with distal part of phallobase tubular (Figure 12) .................................................. *Stephanodes* Enock

– Scape smooth or, at most, lightly sculptured on inner surface; vertex without depressions outside each ocellus (Plate 26) or, if small depression in front of mid ocellus, this much less than ocellar diameter; pronotal spiracle at posterolateral angle of pronotum (Plate 71) ...........................................................................................................................................................................

9 Mesothoracic setae with blunt apices (Plate 64); axillar seta long and conspicuous, extending to posterior margin of scutellum; genitalia with subtriangular volsellar digiti (Figure 6) .......................................................... *Chaetomymar* Ogloblin

– Mesothoracic setae with pointed apices (Plate 71); axillar seta short, inconspicuous (Plate 71); genitalia (Figure 11) as in *Stephanodes* ........................................ *Polynema* Haliday

10 Eye, in lateral view, extending to back of head so gena extremely narrow or absent, at least dorsally; mandibles greatly reduced to minute stubs without teeth, not meeting medially; genitalia with boot-shaped phallobase, parameres, volsellar digit and aedeagal apodemes (Figure 7) .................................................................................. *Erythmelus* Enock

– Eye, in lateral view, not extending to back of head so gena at least half as wide as eye width; mandibles meeting medially, with 3 or 4 teeth; genitalia not exactly as above ... 

11 Posterior scutellum entire (Plate 61); propodeum with median longitudinal groove (Plate 61); body black or very dark brown; genitalia with aedeagus fused with the phallobase and with long parameres, but without digiti (Figure 3) ....................... *Anaphes* Haliday

– Posterior scutellum divided into two lobes by median longitudinal groove (Plates 60, 72); propodeum without median longitudinal groove; body pale, yellowish to light brown .......................................................................................................................... *Anagrus* Haliday

12 Posterior scutellum with each lobe about as long as wide (Plate 60); fore wing narrow and without distinct lobe behind venation (Plate 30); genitalia with volsellar digit but without parameres (Figure 2) .......................................................... *Stethynium* Enock

– Posterior scutellum with each lobe about twice as long as wide (Plate 73); fore wing wider and with distinct lobe behind venation (Plate 47); genitalia without a boat-shaped phallobase and a complex aedeagus (Figure 13) ........................................ *Stethynium* Enock

Genus *Alaptus* Westwood, 1839  Plates 1, 16, 29, 44, 59; Figure 1

*Alaptus* species parasitize mainly Psocoptera. Records from Coccoidea have been published but need confirmation. No hosts are yet reported for *Alaptus* collected in the Arabian Peninsula or surrounding countries. *Alaptus* is one of the three most commonly collected genera in the UAE and Yemen. At least three species were found in the UAE. The minute, compact body, notched hind margin of the fore wing, and large, broadly truncate mesophragma extending well into the gaster (Plate 59) help to distinguish the genus.

Genus *Anagrus* Haliday, 1833  Plates 2, 17, 30, 45, 60; Figure 2

*Anagrus* species parasitize mainly Cicadellidae and Delphacidae. At least two species of *Anagrus* occur in the UAE. Species of *Empoasca* Walsh, 1862 (Cicadellidae) are the hosts recorded from Egypt (Triapitsyn, 2004) and Somalia (Paoli, 1930). Seven species are recorded for Yemen (Jesu & Viggiani, 2006). The small size and usually pale yellow body and posterior scutellum divided into two lobes that are not longer than wide (Plate 60) help to distinguish the genus.
Genus **Anaphes** Haliday, 1833 Plates 3, 18, 31, 46, 61; Figure 3 Anaphes species parasitize mainly Curculionidae or Chrysomelidae, but at least one parasitizes eggs of *Lygus* Hahn, 1833 (Miridae). *Sitona discoideus* Gyllenhal, 1834 (Curculionidae) is the host reported for *A. diana* (Girault, 1911) from Syria (Aeschlimann, 1986). Huber (1992, 2004) reviewed some of the species, including *A. diana* (Girault). One specimen of an unidentified species has been collected in Oman, but none so far from the UAE. The black body, apparent absence of gastral petiole, female antenna with 2-segmented clava (in species occurring in the region) and propodeum and first gastral segment divided medially, help distinguish the genus.

Genus **Arescon** Walker, 1846 Plates 4, 19, 32, 47, 62; Figure 4 Arescon species parasitize Cicadellidae and possibly Coccoidea though records from this host group need confirmation. No hosts are yet recorded for *Arescon* in the Arabian Peninsula or surrounding countries. Triapitsyn & Berezovskiy (2004) reviewed the Palaearctic species. Only two specimens of *Arescon* were collected in the UAE and ten in Yemen. The 5-segmented female antenna and long venation distinguish the genus.

Genus **Camptoptera** Förster, 1856 Plates 5, 20, 33, 48, 63; Figure 5 Camptoptera species have been recorded from various families in Coleoptera, Hemiptera, Lepidoptera, Neuroptera and Thysanoptera (Noyes, 2002). All records except from Scolytidae need confirmation. Huber & Lin (1999) reviewed the genus. Very few *Camptoptera* specimens were collected, and only in Yemen and Oman. The narrow, distinctly curved fore wing, presence of ring segments (Plate 20) beyond the first funicle segment, and short and narrow but distinct gastral petiole (Plate 63, petiole partly visible) help to distinguish the genus.

Genus **Chaetomymar** Ogloblin, 1946 Plates 6, 34, 49, 64; Figure 6 Chaetomymar species parasitize Cicadellidae. Huber (2003) reviewed the genus, which is now considered to be a synonym of *Palaeoneura* Waterhouse, 1915 (Triapitsyn & Berezovskiy, 2007). The name *Chaetomymar* is provisionally retained here. One, rarely collected, species occurs in the region, including in the UAE. The yellow body colour, and the vertex and mesosoma, especially the pronotum, bearing strong, apically truncate setae (Plate 64) help to distinguish the genus.

Genus **Erythmelus** Enock, 1909 Plates 7, 21, 35, 50, 65; Figure 7 Erythmelus species parasitize Cicadellidae, Miridae and Tingidae. *Stephanitis pyri* (Fabricius, 1775) (Tingidae) is the host recorded for *E. teleonemiae* (Subba Rao, 1984) in Iraq (Triapitsyn, 2003). Erythmelus is the one of the most commonly collected genera in the UAE, where at least one species was frequently collected at light at night. At least three species, representing the two currently recognized subgenera, *E. (Erythmelus)* and *E. (Parallelaptera)* Enock, 1909, occur in the UAE (Triapitsyn et al., 2007). At least two species were collected in Yemen. The thin head with eye extending to the occiput, minute mandibles that do not meet medially, fore wing often without microtrichia except in apical half or in a single line or two, and female gaster with prominent hypopygium help to distinguish the genus.

Genus **Gonatocerus** Nees, 1834 Plates 8–10, 22–24, 36–38, 51–53, 66–68; Figure 8 Gonatocerus species parasitize mainly Cicadellidae. Gonatocerus appears to be the most commonly collected and diverse genus in the Arabian Peninsula. Until now the only identified species is *Gonatocerus vanharteni* Jesu & Viggiani, 2004, from Yemen, but at least
15 species were collected there and perhaps 10 from UAE (including \textit{G. vanharteni}) and Oman. Three species groups are represented in UAE, the \textit{ater}, \textit{litoralis} and \textit{sulphuripes} groups. The \textit{litoralis} species group is by far the most common and diverse group collected, with many species. The other two groups are represented by a single species each. The 8-segmented female funicle (Plates 8–10), fore wing with fairly long marginal vein and hypochaeta placed medially between proximal and distal macrochaeta, and non-encapsulated male genitalia distinguish the genus. The \textit{ater}-group species has no microtrichia behind the marginal vein of the fore wing (Plate 36) in contrast to the other two species groups. The \textit{ater}- and \textit{sulphuripes}-group species have a rhomboidal metanotum (Plates 66, 68) compared to the \textit{litoralis}-group species which have a strap-like metanotum (Plate 67).

Genus \textit{Litus} Haliday, 1833

\textit{Litus} species parasitize Staphylinidae. The genus has not yet been reported from the Arabian Peninsula but is likely to occur there, so is included in the key. The nearest country record is Turkey. The large, ovoid female clava (Plate 11) and strongly sculptured mesosoma contrasting with the smooth metasoma (Plate 69) help distinguish this genus.

Genus \textit{Mymar} Curtis, 1829

\textit{Mymar} species parasitize Cicadellidae and Delphacidae. No hosts are yet recorded for \textit{Mymar} in the Arabian Peninsula or surrounding countries. Triapitsyn & Berezovski (2001) revised the genus. Two species, \textit{M. taprobanicum} Ward, 1875, reported as \textit{Oglobliniella aegyptiaca} nov. spec. by Soyka (1950), and \textit{Mymar africanum} Annecke, 1961, were collected in Yemen, but rarely (Jesu & Viggiani, in preparation).

Genus \textit{Polynema} Haliday, 1833

\textit{Polynema} species parasitize various families of Hemiptera, mainly Cicadellidae, Membracidae, Miridae, Nabidae, and Anthocoridae, and Odonata, mainly Lestidae. Records from other families need confirmation. No hosts are recorded for \textit{Polynema} in the Arabian Peninsula or surrounding countries. Although it is one of the most specious genera of Mymaridae, relatively few specimens of about four species were collected in the UAE. These represent two of the three subgenera recognized by Triapitsyn & Fidalgo (2006): \textit{P. (Polynema)} and \textit{P. (Doriclytus)} Förster, 1847. In contrast, at least 10 species were identified from Yemen. The dark brown body with long, slender gastral petiole (Plate 74), and punctiform marginal vein in the fore wing (Plate 41) help to distinguish the genus.

Genus \textit{Stephanodes} Enock, 1909

\textit{Stephanodes} species parasitize Nabidae and there is one record from Cicadellidae. No hosts are yet recorded for \textit{Stephanodes} in the Arabian Peninsula or surrounding countries. Huber & Fidalgo (1997) reviewed the genus. The genus is uncommon but several specimens of \textit{Stephanodes} were collected in the UAE. The scape with rasp-like inner surface, vertex with depressions outside each ocellus, and advanced position of the mesothoracic spiracle help to distinguish the genus.

Genus \textit{Stethynium} Enock, 1909

\textit{Stethynium} species parasitize mainly Cicadellidae but a reliable record from gall-forming \textit{Ophelimus} Haliday, 1844 (Eulophidae) larvae is known (Huber et al., 2006). \textit{Empoasca} sp. is the host reported for \textit{S. triclavatum} Enock, 1909 from Egypt (Triapitsyn, 2002). Only two specimens were collected in the UAE. The 3-segmented female clava and longitudinally
divided scutellum with each lobe longer than wide, or the complex male genitalia help to
distinguish the genus.

FAUNAL RELATIONSHIPS

At most, only about a dozen genera of Mymaridae seem to occur in a given desert (including
cold deserts such as tundra), grassland, or savannah/dry woodland habitat. The number of
genera of Mymaridae collected so far in the Arabian Peninsula, and even including the entire
region surrounding it, is therefore typical of arid regions generally. In contrast, twice as many
genera may be found in regions with humid temperate forests, as in Europe for example, and
even more genera in a given tropical area containing rainforest.
The Arabian Peninsula is a meeting point of two faunal regions, the Afrotropical and
Palaearctic. It is generally recognized that the fauna of Yemen is more strongly related to the
Afrotropical fauna than to the Palaearctic fauna whereas the fauna of the UAE (and much of
the rest of the peninsula) is essentially Palaearctic. For Mymaridae, these relationships are
supported by the presence in Yemen of *Mymar africanum* Annecke, a widespread African
species, and the presence in the UAE of *Gonatocerus ater* Förster, 1841, a widespread
Palaearctic species. The presence of *Chaetomymar*, a genus widespread in the Old World
except the western Palaearctic region (Huber, 2003), supports the link between the
Afrotropical and Oriental faunas. Generally, however, Mymaridae are a poor choice for
determining faunal relationships because the species appear to be easily dispersed and often
have wide geographic distributions. Likely, any of the species that occur in the UAE may be
found throughout the Arabian Peninsula in suitable habitats where their hosts occur.

DISCUSSION

The fauna of the Arabian Peninsula, surrounded by the Persian Gulf, Arabian Sea and Red
Sea, and south of approximately 30ºN, is poorly known for parasitic Hymenoptera. Although
the 'Fauna of Arabia' series contains comprehensive treatments of several groups, only few
parasitic Hymenoptera have been treated. Until 2002 only about 125 scattered publications
have some information on chalcids from the seven peninsular countries (Noyes, 2002). The
number of chalcidoid species listed in Noyes (2006) for each is: Bahrain 0, Kuwait 0, Oman
13, Qatar 0, Saudi Arabia 36, United Arab Emirates 7, and Yemen 18. However, several
recent publications on Chalcidoidea of the Arabian Peninsula have appeared (Narendran &
Girish Kumar, 2004; Narendran & van Harten, 2007; Narendran et al., 2007; van Noort & van
Harten, 2006; Zerova et al., 2006; Yefremova, 2007, 2008).
The number of chalcidoid species recorded by Noyes (2006) for the surrounding countries is
generally much higher: Djibouti 0, Egypt 228, Ethiopia 81, Iran 188, Iraq 58, Israel 324,
Jordan 40, Lebanon 50, Somalia 61, Sudan 48, Syria 45, and Turkey 558. However, fewer
than 30 species of Mymaridae have been reported (Table 1). We expect that most of the
mymarid species from the surrounding countries will eventually also be found in the Arabian
Peninsula. That so few species have been recorded from such a large area (from 5º–40º N and
25º–60º E) shows how poorly the entire region has been collected for Mymaridae.

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We thank A. van Harten for the invitation to write a chapter for this volume and for sending
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masterfully prepared the digital images (other than male genitalia line drawings) and compiled all the figures into plates.

REFERENCES


Postscript
After correcting the proofs it was found that the identification of *Gonatocerus ater* (Förster) is incorrect. Actually it is *G. sahadevani* (Subba Rao & Kaur, 1959), an Oriental species.

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