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Systematic and Illustrated Catalogue of the Macroheterocera and Superfamilies Cossoidea LEACH, [1815], Zygaenoidea LATREILLE, 1809, Thyridoidea HERRICH-SCHÄFFER, 1846 and Hyblaeoidea HAMPSON, 1903 of the Arabian Peninsula, with a survey of their distribution (Lepidoptera)

by

Hermann H. HACKER

including contributions by Ralf FIEBIG, Barry GOATER, Axel HAUSMANN, Wolfgang NÄSSIG, Stefan NAUMANN, Rolf G. OBERPRIELER, Aidas SALDAITIS and Dirk STADIE.

Abstract

The scenery of the 'Arabian Subcontinent' is surprisingly diverse, and first impressions of huge, true deserts with little or no rainfall and extremes of temperature can be very misleading. The mountains of western and southern Arabia have a much more elaborate zonation of vegetation, with permanent flowing water, oases and irrigated agricultural land and subtropical habitats and fauna.

The present 'Illustrated Catalogue' is devoted to the Macroheterocera and Superfamilies Cossoidea, Zygaenoidea, Thyridoidea and Hyblaeoidea (Lepidoptera) of the Arabian Peninsula. The main goal is to summarize our knowledge and to present complete taxonomic and faunistic data for both domestic and foreign users. The majority of species are illustrated and these illustrations hopefully can serve as a source for the identification of superficially identifiable species.

The treatment covers 1277 species distributed over 17 Lepidoptera families and numerous genera. For all species, especially the more uncommon, diagnoses and geographical range are given, and where known, habitat preference and biology.
All species are presented with their full name and references to the original description, fully referenced synonyms; special emphasis is given to the descriptions of genitalic features. For many species colour photos of adults, figures of male and female genitalia, and in some cases distribution maps are provided.

In many cases it was necessary to review all available African and Madagascan taxa in order to give a sure statement about the Arabian species. The treatment present here is therefore also an introduction and review of the knowledge on several important genera of the African Region and includes the following taxonomic reviews:

- Review of the Genera *Zekelita* WALKER, 1863, *Proluta* SAALMÜLLER, 1854 and *Rhynchina* GUENÉE, 1854
- Review of the Afrotropical-subtropical (Subsaharan) species of the genus *Aedia* HÜBNER, [1823]
- Review of the tribe Pericymini WILTSHIRE, 1976

Review of the *Maliattha* WALKER, 1863/*Ozarba* WALKER, 1865 genera groups of the subfamily Eustrotiinae GROTE, 1882 of the Ethiopian and Madagascan Regions

Descriptions of 2 genera, 149 species and 17 subspecies are given (cf. 'Taxonomic and nomenclatural summary')

Key words: Arabian Peninsula; Systematic and Illustrated Catalogue; Fauna Macroheterocera, Cossoidea, Zygaenoidea, Thyridoidea, Hyblaeoidea; Taxonomic and Faunistic Revision; Distribution; Bionomics; Genitalia Figures.
Reviews *Zekelita, Proluta, Rhynchina, Aedia,* Pericymini, *Maliattha, Ozarba*

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Review of the tribe Pericymini Wiltshire, 1976

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Tytroca heterophaea Hacker **spec. nov.**
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Cortyta canescens septentrionalis Hacker **subspec. nov.**
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Family Noctuidae Latreille, 1809

Review of the *Maliattha* Walker, 1863/*Ozarba* Walker, 1865 genera groups of the subfamily Eustrotiinae Grote, 1882 of the Ethiopian and Madagascan Regions

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Pseudozarba featheri Hacker **spec. nov.**
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Pseudozarba nilotica Hacker **spec. nov.**
Aconzarba Hacker **gen. nov.**
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Hiccoda pluristriata socotrensis Hacker & Saldaitis **subspec. nov.**
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New synonyms

Family Notodontidae Stephens, 1829

Sumeria Tams, 1938 = *Arciera* Kiriakoff, 1962 **syn. nov.**
Poppaea Fawcett, 1916 = *Bostrychogyna* Kiriakoff, 1960 **syn. nov.**; = *Debrosaniai* Berio, 1993 **syn. nov.**
Poppaea sabina sabina Fawcett, 1916 = *Debrosania puechredoni* Berio, 1993 **syn. nov.**

Family Nolidae Bruand, 1846

Odontestis striata Hampson, 1912 = *Calpe* ? *dubiosa* Brandt, 1941 **syn. nov.** = *Odontestis murina* Wiltshire, 1988 **syn. nov.**

Family Erebidae Leach, [1815]

Rhesala moestalis (Walker, [1866]) = *Pyralomorpha inscripta* Rebel, 1917 **syn. nov.**
Rhesala Walker, 1858 = *Pyralomorpha* Rebel, 1917 **syn. nov.**
Plecoptera hypoxantha Hampson, 1926 = *Eulocastra zavattarii* Berio, 1944 **syn. nov.**

Review of the Afrotropical-subtropical (Subsaharan) species of the genus *Aedia* Hübner, [1823]

Aedia Hübner, [1823] = *Simonettania* Berio, 1985 **syn. nov.**
Aedia Hübner, [1823] = *Renatia* Berio, 1985 **syn. nov.**
Aedia Hübner, [1823] = *Syagrana* Wiltshire, 1980 **syn. nov.**
Aedia serapis (Fawcett, 1916) = *Renatia kampfi* Berio, 1985 **syn. nov.**
Aedia squamosa (Wallengren 1856) = *Catephia scylla* Fawcett,1916 **syn. nov.**

Proconis ochrosia Hampson, 1926 = *Proconis arabica* Wiltshire, 1949 **syn. nov.**

Review of the tribe Pericymini Wiltshire, 1976

Pericyma metaleuca Hampson, 1913 = *Pericyma metaleuca obscura* Wiltshire, 1980 **syn. nov.**
Beriodesma smithii (Holland, 1897) = *Tytroca tabberti* Hacker & Hoppe, 2011 **syn. nov.**

Family Noctuidae Latreille, 1809

Brevipecten buchanani (Rothschild, 1921) = *Brevipecten niloticus* Wiltshire, 1977 **syn. nov.**

Review of the *Maliattha* Walker, 1863/*Ozarba* Walker, 1865 genera groups of the subfamily Eustrotiinae Grote, 1882 of the Ethiopian and Madagascan Regions

Ozarba (Ozarba) phaea phaea (Hampson, 1902) = *Ozarba fuscata* Mey, 2011 **syn. nov.**
Ozarba (Ozarba) semiluctuosa semiluctuosa Berio, 1937 = *Ozarba captata* Berio, 1940 **syn. nov.**
Ozarba (Ozarba) fasciata (Wallengren, 1860) = *Ozarba flavicilia* Hampson, 1914 **syn. nov.**
Ozarba (Ozarba) atrisigna (Hampson, 1910) = *Ozarba himbana* Mey, 2011 **syn. nov.**
Ozarba (Ozarba) socotrana socotrana Hampson, 1910 = *Ozarba timida* Berio, 1940 **syn. nov.**
Ozarba (Ozarba) plagifera (Rebel, 1907) = *Ozarba atrifera* Hampson, 1910 **syn. nov.**
Ozarba (Ozarba) marthae Berio, 1940 = *Ozarba paulianae* Viette, 1985 **syn. nov.**

Pioneabathra olesialis (Walker, 1859) = *Mimasura larseni* Wiltshire, 1984 **syn. nov.**
Thiacidas cerurodes adnanensis (Wiltshire, 1980) = *Auchenisa cerurodes asiriensis* Hacker & Fibiger, 2002 **syn. nov.**
Constantiodes Hampson, 1916 = *Pluxilloides* Berio, 1944 **syn. nov.**
Constantiodes pyralina Hampson, 1916 = *Pluxilloides hartigi* Berio, 1944 **syn. nov.**
Acrorieses ignifusa Hampson, 1916 = *Carcharoda yemenicola* Wiltshire,1983 **syn. nov.**

Revised status

Family Notodontidae Stephens, 1829

Poppaea sabina purpurascens (Hacker, Fibiger & Schreier, 2007) **stat. nov.**

Family Erebidae Leach, [1815]

Phytometra xanthoptera (Hampson, 1894) **bona species**

Review of the Afrotropical-subtropical (Subsaharan) species of the genus *Aedia* Hübner, [1823]

Aedia pericyma cana (Brandt, 1939) **stat. nov.**

Proconis abrostoloides nyctiscia (Hampson, 1926) **stat. nov.**
Proconis politzari Hacker & Hausmann (2010) **stat. nov.**

Family Noctuidae Latreille, 1809

Review of the *Maliattha* Walker, 1863/*Ozarba* Walker, 1865 genera groups of the subfamily Eustrotiinae Grote, 1882 of the Ethiopian and Madagascan Regions

Ozarba (Ozarba) semiluctuosa debrosi Wiltshire, 1983 **stat. nov.**
Ozarba (Ozarba) hemileuca Wiltshire, 1982 **bona spec.**
Ozarba (Ozarba) dignata (Möschler, 1883) **stat. nov.**
Ozarba (Ozarba) bipartita algaini Wiltshire, 1983 **stat. nov.**
Ozarba (Ozarba) socotrana subtilis Berio, 1966 **stat. nov.**

Pseudozarba schencki orthozona Wiltshire, 1984 **stat. nov.**
*Nonagria pringle**i*** (Wiltshire,1958) **bona spec.**
Cardepia affinis legraini Hacker, 1998 **stat. nov.**

New combinations

Family Notodontidae Stephens, 1829

Sumeria grisea Holland, 1893 **comb. nov.**
Poppaea sabina purpurascens (Hacker, Fibiger & Schreier, 2007) **comb. nov.**

Family Erebidae Leach, [1815]

Review of the Genera *Zekelita* Walker, 1863, *Proluta* Saalmüller, 1854 and *Rhynchina* Guenée, 1854

Zekelita (Zekelita) endoleuca (Hampson, 1916) **comb. nov.**
Proluta yemenitica (Hacker, 2011) **comb. nov.**
Proluta ethiopica (Hacker, 2011) **comb. nov.**
Proluta staudei (Hacker, 2013) **comb. nov.**

Polymona philbyi (Collenette, 1933) **comb. nov.**
Progonia yemenitica (Hacker, 2011) **comb. nov.**
Plecoptera malhamana Hacker & Fibiger, 2006 **comb. nov.**
Cerynea hesuensis (Wiltshire, 1983) **comb. nov.**

Review of the Afrotropical-subtropical (Subsaharan) species of the genus *Aedia* Hübner, [1823]

Aedia eremica (Wiltshire, 1980) **comb. nov.**
Aedia nigrescens nigrescens (Wallengren, 1856) **comb. nov.**

Proconis ochrosia Hampson, 1926 **comb. nov.**
Proconis anaerygidia (Berio, 1984) **comb. nov.**

Review of the tribe Pericymini Wiltshire, 1976

Pericyma mauritanica Hacker & Hausmann, 2010 **bona spec.**
Rhabdophera exarata wiltshirei (Hacker & Ebert, 2002) **stat. nov.**
Beriodesma smithii (Holland, 1897) **comb. nov.**
Beriodesma determinata (Wallengren, 1863) **comb. nov.**
Beriodesma sexmaculata (Berio, 1971) **comb. nov.**
Beriodesma sagulata (Wallengren, 1875) **comb. nov.**
Beriodesma mahafaly (Viette, 1970) **comb. nov.**
Beriodesma semiusta (Distant, 1898) **comb. nov.**
Beriodesma setifera (Hampson, 1918) **comb. nov.**
Beriodesma zethesoides (Viette, 1966) **comb. nov.**

Family Noctuidae Latreille, 1809
Brevipecten buchanani (Rothschild, 1921) **comb. nov.**

Review of the *Maliattha* Walker, 1863/*Ozarba* Walker, 1865 genera groups of the subfamily Eustrotiinae Grote, 1882 of the Ethiopian and Madagascan Regions

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Maliattha scapha (Saalmüller, 1891) **comb. nov.**
Maliattha mysteriosa (Berio, 1954) **comb. nov.**
Maliattha mabillei (Berio, 1954) **comb. nov.**
Maliattha varioplagiata (Berio, 1954) **comb. nov.**
Maliattha decorina (Berio, 1954) **comb. nov.**
Maliattha bernica (Viette, 1957) **comb. nov.**
Maliattha perta (Schaus, 1893) **comb. nov.**
Maliattha albibasis (Hampson, 1902) **comb. nov.**
Aconzarba decissima decissima (Walker, 1863) **comb. nov.**
Aconzarba reussi (Strand, 1911) **comb. nov.**
Aconzarba citripennis (Hampson, 1910) **comb. nov.**
Aconzarba scorpio (Berio, 1935) **comb. nov.**
Aconzarba hemimelaena (Hampson, 1910) **comb. nov.**
Aconzarba trigonodes (Hampson, 1910) **comb. nov.**
Aconzarba semitorrida (Hampson, 1916) **comb. nov.**
Acontiola heliastis (Hampson, 1902) **comb. nov.**
Acontiola densa (Walker, 1865) **comb. nov.**
Acontiola acclivis (Felder & Rogenhofer, 1874) **comb. nov.**
Acontiola gobabis (Berio, 1940) **comb. nov.**
Acontiola cyanopasta (Hampson, 1910) **comb. nov.**
Acontiola chryseiplaga (Hampson, 1910) **comb. nov.**
Acontiola binorbis (Hampson, 1910) **comb. nov.**
Acontiola vulluosa (Distant, 1898) **comb. nov.**
Acontiola hypoxantha (Wallengren, 1860) **comb. nov.**
Acontiola divisa (Gaede, 1916) **comb. nov.**
Acontiola implicata (Berio, 1940) **comb. nov.**
Acontiola diplogramma (Hampson, 1902) **comb. nov.**
Acontiola punctithorax (Berio, 1940) **comb. nov.**
Acontiola parvula (Berio, 1940) **comb. nov.**
Acontiola separabilis (Berio, 1940) **comb. nov.**
Acontiola festiva (Berio, 1950) **comb. nov.**
Acontiola varia (Walker, 1865) **comb. nov.**
Acontiola subterminalis (Hampson, 1910) **comb. nov.**

Acontiola metachrysea (Hampson, 1910) **comb. nov.**
Acontiola cryptochrysea (Hampson, 1902) **comb. nov.**
Acontiola hemichrysea (Hampson, 1910) **comb. nov.**
Acontiola subtilimba (Berio, 1963) **comb. nov.**
Acontiola boursini (Berio, 1940) **comb. nov.**
Acontiola rosescens (Hampson, 1910) **comb. nov.**
Acontiola incognita (Berio, 1954) **comb. nov.**
Acontiola epimochla (Bethune-Baker, 1911) **comb. nov.**
Eublemma prolai Berio, 1977 **comb. nov.**

Epharmottomena pica (Wiltshire, 1983) **comb. nov.**
Epharmottomena erastrioides (Brandt, 1938) **comb. nov.**
Thiacidas cerurodes adnanensis (Wiltshire, 1980) **stat. nov., comb. nov.**
Calophasia sinaica (Wiltshire,1948) **comb. nov.**

New names

Family Erebidae Leach, [1815]

Polymona wiltshirei Hacker, 2015 **nom. nov.**

Review of the tribe Pericymini Wiltshire, 1976

Pericyma subbasalis Hacker **nom. nov.**

Introduction

The systematic and illustrated catalogue presented here is another taxonomic, faunistic and zoogeograpic review of the fauna of the eremic parts of North Africa and the Arabian Peninsula. The previous parts dealt with the fauna of other subterritories including the Cape Verde Islands (Hacker, Schreier & Aistleitner, 2010), Mauritania (Hacker & Hausmann, 2010), Macaronesian Archipelago (Hacker, H. & W. Schmitz, 1996), Levante (Hacker, 2001) and Yemen, including Socotra (Hacker & Fibiger, 2006a; Hacker & Saldaitis, 2010, 2011) and provided comprehensive and up to date information on the Lepidoptera of those regions.

The Cape Verde Islands and Macaronesian Archipelago, and the vast Subcontinent of Arabia with the Socotra Archipelago, form the western and eastern boundaries of the huge, dry Sahara eremic and semieremic area which dominates the northern half of Africa. Overall, this huge, but not really impenetrable land ranks among the comparatively unexplored parts of the world. Consequently, there is a serious lack of synoptic literature with contemporary taxonomy and systematics, and helpful illustrations, and this lack must surely have discouraged further exploration.

In contrast to 19th and 20th Centuries, during which only a few privileged scientists were able to undertake expeditions, especially to the remote desert areas with the assistance of villagers in oases or through the hospitality of the Bedouins, reaching these regions has become easier in recent decades. It is now much easier to observe, collect and study material from these parts than in the past. Even so, many areas remain dangerous because of their isolation and remotenes, their dryness, erratic thunderstorms and downpours, as well as periods of political instability and insecurity, and the possibility of terrorist attacks. Consequently, collecting has been localised to a considerable extent; even national borders have changed for a variety of reasons.

The aim of this catalogue is to present an annotated list of all taxa of the larger moths (Macro Heterocera) in systematic order, illustrating all the reasonably common species as well as those not or insufficiently illustrated in other publications. Those who decide to study moths are faced with a formidable number of species, many of which vary greatly in colour, wing pattern and size. It is hardly surprising that many moths are still undescribed or unfamiliar even to specialists, even in an area with rich lepidopterological tradtion such as the Levante and on the Arabian subcontinent. There remains a vast open field for further discovery and enquiry. There is still much to be learnt on the taxonomy, zoogeography, biology, life cycle and behaviour. The bionomics of the majority of the species are still unknown.

Although numerous articles on the Macroheterocera fauna have been published by foreign authors, there is little in the way of traditional studies by local lepidopterists in the area, apart from the countries of the Levante. It is hoped that this contribution will be helpful and stimulating, both tolocal and foreign researchers, as an introduction to the Lepidoptera of the Arabian Peninsula, which will lead to further studies of the insect diversity of this extensive region.

Geomorphology

The Arabian Peninsula forms the northeastern part of the African shelf, separated from mainland Africa by the Red Sea and extending slightly south-eastward. The tectonic elevation started some 50 million years ago and continues to this day.

Geomorphology of the Peninsula is characterized by some large tectonic units:

- The Western mountain range which extends north-south along the Red Sea coast and escarpment from the Dead Sea and Sinai Mountains in the north to the southernmost foothills near Aden. It is generally divided into two major areas, the Hidjaz in the north and Asir in the south, extending over the two western countries Saudi Arabia and Yemen. Highest peak is the Dschabal an-Nabi Schuʿaib, 3665m.
- Another mountain system in the south extends in west-east direction, across Yemen and as far as as West Oman, Dhofar. It consists of a number of mountain ranges along the Hadramaut valley from west to east, including Jabal Habashiya, Jabal Mahrat, Jabal-al-Qamar or Jabal Samhan.
- One further mountain system near the Omanian Muscat, Jebal al Hajar, belongs geologically to the Iranian Zaghros mountain system and culminates in Jabal as-Sham, 3035m in Jebal Akhdar.
- The main part of the Arabian shelf is covered by plateaux and elevated plains sloping from the western mountain range to the east, mainly between 600 and 1000 metres. It is of granitic origin and is composed of sedimentary rock formations of sand, limestone, dolomite and similar sedimentary rocks which originated between the Precambrium and Quaternary periods. Some mountain ranges such as Jebel Shammar and Jebel Tuwaiq are included in this area, but are not much higher than the surrounding plateaux.

- Central and eastern parts of the Arabian Peninsula are characterised by mainly vast desert areas, Rub-al-Khali and Al Huqf in the south, Ad Dahna in the east and An Nafud in the north. Here stony deserts alternate with huge areas of sand dunes, and the only inhabitable areas are scattered oases. Apart from the highlands of Asir, Hadramaut and Jabal al Hajar the Central Arabian region Nejd is the most densely populated part of the Arabian Peninsula. This area gains humidity from favourable subterranean hydrological conditions: numerous wells with rather high ground water-table, which arise from the Jebel Tuwaiq and Hidjaz.
- The area between Hidjaz and Asir mountain range and Red Sea is formed of coastal plains Tihama as Sahm and Tihama Asis, where the rivers from the mountain ranges with rather high precipitation disappear in the sand before reaching the coast. These regions are among the hottest places in the World.

The Arabian Peninsula consists of the state territories of Saudi Arabia, Yemen, Oman, the United Arab Emirates, Qatar, Bahrain and Kuwait. To the north, the Arabian Peninsula is limited by the northern borders of Saudi Arabia and Kuwait, although there is no clear border line in the Syrian Desert and the range of many species characteristic of the Levante may extend into Arabia. Therefore often small areas of South Iraq and S Jordan, especially the Dead Sea region, are also regarded here as part of the Arabian Peninsula. On the other hand, in the northwesternmost mountains areas of Saudi Arabia such as Jabal al-Lawz (2580m), which are entomologically hardly explored, many eastern Mediterranian species are known to occur.

Flora and fauna, history of research

Although large parts of Arabia like the Rub al Khali in the south and the Nefud desert in the north consist of huge, true deserts with little or no rainfall and extremes of temperature, the scenery of this huge region is surprisingly diverse, and first impressions can be very misleading. Large tracts of land in flat parts of Saudi Arabia form an essential similar habitat, extremely dry and very hot, but centrally during winter even with frosts. On the contrary, the mountains of western and southern Arabia have a much more elaborate zonation of vegetation, with permanent flowing water, oases and irrigated agricultural land. Stony deserts, vast sand dunes, hilly districts and mountainous regions, gorges and canyons, permanent small rivers and even subtropical rainforests as in the southern Asir Mountains or in Dhofar are to be found. Animals and plants in arid regions are adapted to irregular precipitation and can survive in extreme conditions, even up to several years of severe drought and sweltering heat. Many insects have survival mechanisms which enable them to endure long periods of drought, or become dormant during spells of extreme heat, called as an alternative internal physiological “aestivation“. Therefore it is quite baffling to find that the arid regions of North Africa and the Saudi Arabian Subcontinent are inhabited by a huge number of seemingly delicate species, many of them endemic within special zoogeographical regions.

Some areas such as the Jebel Burra, one of the most impressive and humid, subtropical mountain ranges of Yemen, the equally humid region Ghofar in South Oman, the terraces of Jebal Akhdar in East Oman and the isolated Socotra Archipelago in the Indian Ocean are well known “hot spots” of biogeography and evolution, living laboratories with a high degree of endemism.

So far, in southern Arabia about 2500 species of flowering plants have been recorded and identified (Al-Hubaishi & Müller-Hohenstein, 1984). Although most trees belong to just three genera of different families: *Ficus* (Moraceae), *Acacia* (Mimosaceae) and *Commiphora* (Burseraceae), altogether representatives of about 120 families of woody and herbaceous plants have been found. Biodiversity is naturally highest in the humid, subtropical mountain ranges of Yemen and the Saudi Arabian Asir Mountains. About 20 ♀ of the flora of SW Arabia is endemic and this applies also to the insects linked with their existence.

The systematic exploration of the region at the end of the 19th century was initiated in the Levante mostly by German lepidopterologists, including O. Staudinger and R. Püngeler. They described the majority of the species there. The material is conserved in the NHMU in Berlin. The fauna of Nolidae and Noctuidae of the Levante was summarized and published by Hacker (2001).

The biogeographical “hot spot” Socotra was visited by two famous natural-historic expeditions about 110 years ago, an English expedition by H.O. Forbes (Liverpool Museum) and W.R. Ogilvie-Grant (BMNH, London) 1898-1899 (descriptional part published by Hampson, 1899; 1903) and the legendary Austrian South Arabian expedition 1898-1899 on the Swedish steamer “Gottfried” with the entomologist Prof. Oskar Simony (descriptional part published by Rebel, 1907). During the first 11 decades of the 20th century, Socotra became isolated and completely cut off from the rest of the world by military activity and extreme natural conditions, an inaccessible place. Hence it was not until our time that the secret of the composition of the noctuid fauna could be disclosed and presented in a biogeographical elabouration. Wranik (2000) summarized most of

the current knowledge and sketched the problems of nature protection and sustainable development. It is true that his comprehensive paper gave an overview of the natural history of the Socotra Archipelago with special considerations to the fauna, especially the butterflies and moths, but valuable as his publication is, most of the records, in particular of Noctuidae, are based on the results of the expeditions a hundred years ago, without any new data.

Wiltshire (1980; 1982; 1983; 1984; 1986; 1988 and 1990) presented a complete revision of the fauna of Saudi Arabia, including a large number of descriptions of new species, in volumes of the "Fauna of Saudi Arabia". However, he usually he excluded the other countries, Yemen in particular. In three of his papers (1977b; 1980b, 1985a) he also included a tentative approach to the fauna of Oman. Legrain & Wiltshire (1998) and Fibiger & Legrain (2009) gave an inventory of the Noctuoidea of UAE. Details of the history of research of the Arabian Peninsula and especially Saudi Arabia have been published in numerous papers in the series "Fauna of Saudi Arabia", 26 volumes of which have been published since 1979. These books contain many taxonomic revisions, faunal lists, synonymies, identification keys and detailed descriptions. More than 1450 taxa new to science have been described in this comprehensive and up-to-date reference work. Recently A. Saldaitis was able to present new material, collected in 2008, 2009, details of which were published by Hacker & Saldaitis, (2010, 2011) and others.

The Yemeni fauna in the remote country at the SW tip of the Arabian Peninsula is strongly influenced by African elements. Three German expeditions to that country in 1996, 1998 and 2000, made by H. Hacker and collegues were outlined in numerous papers and the results finally summarized by Hacker & Fibiger (2006). Even so, many findings remained unpublished or were recognized within revisions of genera and groups such as *Caradrina* Ochsenheimer, 1816 (Hacker, 2004), *Acontia* Ochsenheimer, 1816 and the tribus Acontiini Guenée, 1841 (Hacker, Legrain & Fibiger, 2008), *Feliniopsis* Roepke, 1938 (Hacker & Fibiger, 2007a), *Brevipecten* Hampson, 1894 (Hacker & Fibiger, 2007b), *Thiacidas* Walker, 1855 (Hacker & Zilli, 2007; 2010) and Nolini (Hacker, Schreier & Goater, 2012).

Zoogeography

Until the Tertiary period, about 50 million years ago, the Arabian Peninsula was connected to the neighbouring parts of Africa and India, and shared a similar flora and fauna. Subsequently, as a result of tectonic plate movements, India, Africa and Madagascar became separated until they reached their present place, and the East African Rift Valley system gradually formed. One result was the appearance of the Red Sea in the west and Persian Gulf in the East. These processes are of fundamental importance in understanding the history of the flora and fauna.

The zoogeographical categories used here for the Lepidoptera are based on a combination of phytogeography (Kürschner, 1998; Léonard, 1989; Mandaville, 1984; White, F. & J. Léonard, 1983; Zohary, 1973), and zoogeography, mainly the terms used by Wiltshire.

Overview of zoogeographical categories

1) Mediterranean (Pontomediterranean = Euroriental of Wiltshire) (cf. p.487)
Mediterranean regional centre (East Mediterranean province of the Mediterranean region sensu Zohary 1973)

2) Irano-Turanian (Anatolian-Iranian) (incl. endemic relicts of the highest mountain chains of the Asir Mountains and Oman = glacial relicts) (cf. p.177)
Irano-Turanian regional centre (incl. Mesopotamian and Irano-Anatolian provinces of the Irano-Turanian region sensu Zohary 1973)

3) Eremic (non tropical-subtropical)
Saharo-Sindian*Saharo-Sindian regional zone* (cf. p.470)
A) **Saharo-Eremic** (incl. endemics of Central Arabia) (cf. p.327)
Arabian regional subzone (= Saharo Arabian region sensu Zohary; Saharo-Sindian sensu Eig)
B) **East Saharo-Eremic** (incl. endemics of SW Arabia and Yemen) (cf. pp. 331, 499)
Nubo-Sindian subprovince/local centre of endemism
C) **Omano-Makranian** (Omano-Makranian; Eastern Eremic of Wiltshire) (incl. endemics of Oman, UAE, SE Saudi Arabia)
Omano-Makranian subprovince/local centre of endemism

4) Tropical

Afrotropical-subtropical (Subsaharan) (Ethiopian)
A) **East African** (incl. endemics of Yemen, Oman and Socotra) (cf. p.428)
Somali-Masai regional centre (incl. Eritreo-Arabian province of the Sudanian region sensu Zohary 1973)
B) **Subsaharan** (incl. 4 A) (cf. pp. 181, 203, 328, 405, 457, 487)

Oriental (Indo-Malayan)
Indo-Malayan

Palaeotropical-subtropical (Old World)

5) Afromontane (*Juniperus procera* zone of East Africa and the S Arabian Penisula)
Afromontane

Material and Methods

Material and data given in this book are from all collections with specimens from the area concerned. These are British Museum (Natural History), London, Museum National d'Histoire Naturelle, Paris, Musée Royal de l'Afrique Centrale, Tervuren, Museum Witt, München, Naturhistorisk Museum, Oslo, Naturhistorisches Museum der Humboldt-Universität, Berlin, Naturhistorisches Museum, Wien, Staatliches Museum für Naturkunde, Karlsruhe, Forschungsinstitut Senckenberg, Frankfurt, Transvaal Museum, Pretoria and Zoologische Staatssammlung, München, and also from a large number of private collectors, who are listed under 'Acknowledgements'.

The majority of the specimens are in a separate section of the African collection of the ZSM, in which the collections of the author are included, and which also contains a multitude of unidentified material. For many parts of the present book it was necessary to examine and figure all relevant type specimens. Most of them were located in the collections mentioned above.

The holotypes of the species described here are deposited in the current collections except where indicated to the contrary; if collected by the author in the Zoologische Staatssammlung, München.

Photographs of the specimens were usually taken before dissection. Because of the immense number of species treated here, many of which are strikingly similar, it was necessary to make more than 5000 male and female genitalia dissections, applying the standard procedure for Noctuoidea (Fibiger, 1997). The nomenclature of internal features, mainly parts of the male and female genitalia, follows that usedin the series Noctuidae Europaeae and earlier publications by the author (especially Hacker, 2004; Hacker et al., 2008). The definition of the processes of the inner surface of the valva of the male genitalia varies in different publications, especially between those of the New and the Old World. Therefore the features clasper, harpe, digitus and ampulla are redefined here to avoid ambiguity.

DNA barcodes for the majority of the species treated here were obtained by taking samples from dry legs from each specimen. The DNA extracts are stored at the CCDB and the DNA-Bank facility of the ZSM. Data of the specimens, e.g. images, voucher deposition, GenBank accession number, GPS coordinates, sequence and trace file are stored in the BOLD in the GZPPL and GZPPT projects. The samples IDs (Museum IDs) of the specimens (voucher deposition) are all listed, such as "BC ZSM Lep 48145"; the samples used in this revision are underlined.

The handling of the sequence divergences for the barcode region follows Ratnasingham & Herbert (2007) using the Kimura 2 Parameter model, employing the analytical tools on BOLD (cf. Hausmann, 2011). The genetic distances between genera and species shown in some figures are reported as minimum pairwise distances (cf. also Hausmann, 2011).

Unfortunately the results of DNA sequencing become less clear in old specimens. Therefore matchable results have only been possible for species of which newly collected material was available.

Annotated list of species

The format of the checklist follows standard checklist style. Subspecies names are given only when the nominotypical subspecies does not occur in the region under consideration. The text is kept to a minimum, and illustrations, especially of the male and female genitalia, are provided in order to facilitate a clear understanding

of the subject matter

The term Macroheterocera is used here for the well-supported moth clade identified in recent extensive molecular studies (Regier et al. 2009; Mutanen et al. 2010), to avoid confusion with the popular term macrolepidopterans, now freed for popular use for a polyphyletic assemblage of larger moths and butterflies.

The treatment of orders, families, subfamilies follows Nieukerken et al. (2011), that of the Erebidae Zahiri et al. (2011).

Acronyms of depositories:

AMNH	American Museum of Natural History, New York
BMNH	British Museum (Natural History), London
HNHM	Hungarian Natural History Museum, Budapest
IEVU	Institute of Ecology of Vilnius University, Lithuania
MCSM	Museo Civico di Storia Naturale, Milano
MCSN	Museo Civico di Storia Naturale Giacomo Doria, Genoa
MNHN	Museum National d'Histoire Naturelle, Paris
MRAC	Musee Royal de l'Afrique Centrale, Tervuren
NHMO	Naturhistorisk Museum, Oslo
NHMU	Naturhistorisches Museum der Humboldt-Universität, Berlin
NHMW	Naturhistorisches Museum, Wien
NMB	National Museum of Zimbabwe, Bulawayo
NMK	National Museums of Kenya, Nairobi
NHMB	Naturhistorisches Museum, Basel
NRM	Naturhistoriska Riksmuseet, Stockholm
SMNK	Staatliche Museum für Naturkunde, Karlsruhe
SNG	Forschungsinstitut Senckenberg der Senckenbergischen Naturforschenden Gesellschaft, Frankfurt am Main
SNMD	Senckenberg Museum, Dresden/formerly Museum für Tierkunde, Dresden
TMP	Transvaal Museum, Pretoria
UMO	University Museum, Oxford University
UZM	Universitetets Zoologiske Museum, Copenhagen
ZSM	Zoologische Staatssammlung, München
ZIN	Zoological Museum of the Zoological Institute of the Russian Academy of Science, St. Petersburg

Further abbreviations:

BOLD	Barcode of Life Data Systems
CCDB	Canadian Centre for DNA Barcoding
RCA	Central African Republic
RSA	Republic of South Africa
UAE	United Arab Emirates
ICZN	International Commission of Zoological Nomenclature auct.
of author(s)	(=misidentification)
comb. nov.	new combination
syn. nov.	new synonym
spec. nov.	new species
subspec. nov.	new subspecies
nom. dub.	nomen dubium (= identity uncertain)
praeocc.	name preoccupied
uncert. stat.	status uncertain

List of collecting sites and dates and abbreviations

a) German Yemen expeditions 1987, 1996, 1998, 2000

List of collecting sites and dates 1998 (leg. A. Bischof, H. Hacker, & H-P. Schreier)

*1	Prov. Sana'a, 15°37'N, 43°44'E, mountains wsw Amran, Mada'a, 3000m, 29.X.1996
*2	Prov. Sana'a, 15°36'N, 43°50'E, mountains wsw Amran, Masaani, 2900m, 30.X.1996
*3a/b	Prov. Sana'a, 15°35'N, 43°47'E, mountains wsw Amran, Masaani-Gummama, 3000m, 30.X.1996
*4	Prov. Al-Mahwit, 15°29'N, 43°55'E, e Kawkaban, 2750m, 31.X.1996
*5	Prov. Sana'a, 15°16N, 44°06'E, mountains sw Sana'a, Jabal'Ayban, Bait Na'ama, 2650m-2750m, 1.XI.1996
*6	Prov. Sana'a, 15°07'N, 43°53'E, 45 sw Sana'a, Wadi 2 km nw Mafhaq, 2100m, 2.XI.1996
*7	Prov. Sana'a, 15°04'N, 43°39'E, 60 km sw Sana'a, Makaban, Naqil Manakhah (westside), 1900m, 2.XI.1996
*8	Prov. Al-Mahwit, 15°08'N, 43°34'E, 30 km ene Bajil, Wadi Shalal, 10 km ese Khamis Bani Sa'd, 900m, 3.XI.1996
*9	Prov. Al-Mahwit, 15°11'N, 43°32'E, 30 km ne Bajil, 5 km nne Khamis Bani Sa'd, 750m, 3.XI.1996

*10 Prov. Al Hudaydah, 15°04‘N, 43°19‘E, Tihama, 7 km ne Bajil, 400m, 4.XI.1996
*11 Prov. Al Hudaydah, 14°30‘N, 43°13‘E, Tihama, 3 km n Bayt al Faqih, 100m, 4.XI.1996
*12 Prov. Al Hudaydah, 13°55‘N, 43°24‘E, Tihama, 8 km wsw Hays, 70m, sanddunes, 5.XI.1996
*13 Prov. Ibb, 13°45‘N, 44°10‘E, 5 km ne Al Qa’idah, Mahal al Houmeira, 1800m, 6.XI.1996
*14 Prov. Ibb, 13°57‘N, 43°57‘E, 1,5 km w Jiblah, 2100m, 7.XI.1996
*15 Prov. Marib, 15°44‘N, 44°44‘E, 70 km ne Sana’a, Naqil al Fardah (eastside), 1700m, 10.XI.1996
*16 Prov. Hadramaut, 15°57‘N, 48°50‘E, Wadi Hadramaut, 3 km e Say’un, 700m, 11.XI.1996
*17 Prov. Hadramaut, 15°44‘N, 48°18‘E, Wadi Hadramaut, 17 km sw Shibam, 3 km n Hawra, 650m, 12.XI.1996
*18 Prov. Hadramaut, 15°24‘N, 48°21‘E, Wadi Daw’an, Khar Sowdan, 10 km s Al Huraydah, 900m, 13.XI.1996
*19 Prov. Hadramaut, 49°15‘N, 14°47‘E, 25 km nne Al Mukalla, Al Ain, 20 km nnw Ar Rayyan, 150m, 14.XI.1996
*20 Prov. Hadramaut, 14°01‘N, 48°18‘E, 45 km wsw Al Mukalla, coastal dunes 2 km w Bir Ali, 5m, 15.XI.1996
*21 Prov. Hadramaut, 14°01‘N, 48°18‘E, 45 km wsw Al Mukalla, coastal dunes 2 km w Bir Ali, 10m, 15.XI.1996
*22 Prov. Abyan, 13°09‘N, 45°19‘E, 50 km ne Aden, Wadi Bana, 5 km nnw Zinjibar, 80m, 16.XI.1996
*23 Prov. Abyan, 13°02‘N, 45°20‘E, 50 km ne Aden, 5 km s Zinjibar, agric. area, 20m, 17.XI.1996
*24 Prov. Ta’izz, 13°25‘N, 44°15‘E, Wadi Warazan, 7 km nw Ar Rahidah, 1150m, 17.XI.1996
*25 Prov. Ta’izz, 13°33‘N, 43°49‘E, 30 km wsw Ta’izz, 10 km sw Hajdah, vill. Lagius, 750m, 18.XI.1996
*26 Prov. Ta’izz, 13°30‘N, 44°08‘E, 10 km ese Ta’izz, vill. Gum Gum, 1500m, 19.XI.1996
*27 Prov. Ta’izz, 13°28‘N, 44°09‘E, 15 km se Ta’izz, subtrop. veget., 1350m, 19.XI.1996

List of collecting sites and dates 1998 (leg. A. Bischof, J. Bittermann, M. Fibiger, H. Hacker, H. Peks & H-P. Schreier)

*30 Prov. Sana’a, Sana’a Airport, 2300m, 15.IV.1998
*31 Prov. Sana’a, 15°18‘07“N, 44°16‘29‘‘E, mountains sw Sana’a, Jabal’Ayban, Bait Na’ama, 2700m-2750m, 18.IV.1998
*32 Prov. Sana’a, 15°16‘19‘‘N, 43°59‘19‘‘E, Jabal an Nabi Shu’ayb, SE-side, 3400-3450m, 19.IV.1998
*33 Prov. Sana’a, 15°12‘38‘‘N, 43°57‘23‘‘E, 6 km nw Suq Baw’an, 3035m, 20.IV.1998
*34 Prov. Sana’a, 15°05‘12‘‘N, 43°43‘28‘‘E, 60 km sw Sana’a, Makaban, Naqil Manakhah (westside), 1730m, 21.IV.1998
*35 Prov. Al-Mahwit, 15°12‘59‘‘N, 43°31‘28‘‘E, 5 km n Kamis Bani Sa’d, 600m, 22.IV.1998
*36 Prov. Al Hudaydah, 14°52‘33‘‘N, 43°26‘17‘‘E, Jebel Burra, 25 km se Bajil, 600m, 23. and 24.IV.1998
*37 Prov. Al Hudaydah, 13°53‘28‘‘N, 43°23‘05‘‘E, Tihama, 10 km wsw Hays, 50m, sanddunes, 25.IV.1998
*38 Prov. Ta’izz, 13°24‘53‘‘N, 44°14‘51‘‘E, Wadi Warazan, 5 km nw Ar Rahidah, 1100m, 26.IV.1998
*39 Prov. Ta’izz, 13°25‘16‘‘N, 44°15‘04‘‘E, Wadi Warazan, 5 km nw Ar Rahidah, 1080m, 27.IV.1998
*40 Prov. Ibb, 13°47‘50‘‘N, 44°10‘25‘‘E, 5 km non Al Qa’idah, 1840-1900m, 28.IV.1998
*41 Prov. Abyan, 14°15‘41‘‘N, 45°19‘28‘‘E, 50 km ne Aden, Wadi Bana, 7 km nnw Zinjibar, 50m, 29.IV.1998
*42 Prov. Shabwah, 14°15‘56‘‘N, 47°36‘05‘‘E, 5 km sos Mayfa’ah, 440m, 30.IV.1998
*43 Prov. Hadramaut, 14°47‘26‘‘N, 49°15‘10‘‘E, 25 km nne Al Mukalla, Al Ain, 20 km nnw Ar Rayyan, 100m, 1.V.1998
*44 Prov. Hadramaut, 15°04‘44‘‘N, 48°41‘58‘‘E, Abdallah Garib Plateau, 63 km wnw Mukalla, 1335m, 2.V.1998
*45 Prov. Shabwah, 14°03‘29‘‘N, 48°41‘34‘‘E, Wadi Hajar, 4 km s Hisn Bin Talib, delta, 3m, halophile vegetation, 3.V.1998
*46 Prov. Shabwah, Habban, 4.5.1998
*47 Prov. Abyan, 13°03‘24‘‘N, 45°19‘13‘‘E, 11 km sw Zinjibar, wadi/dunes,18m, 4.V.1998
*48 Prov. Ibb, 14°02‘47‘‘N, 44°11‘52‘‘E, Wadi Malhama, Village Malhama, 20 km non Ibb, 1650m, 6.V.1998
*49 Prov. Sana’a, 15°16‘18‘‘N, 43°59‘14‘‘E, Jabal an Nabi Shu’ayb, S-side, 3000m, 7.V.1998

List of collecting sites and dates 2000 (leg. F. Aulombard, M. Fibiger, H. Hacker & H-P. Schreier)

*50 Prov. Sana’a, 15°23“N, 44°07‘, Sana’a City, 2300m, 22.II.2000
*51 Prov. Sana’a, 15°18“N, 44°06‘E, mountains sw Sana’a, Jabal’Ayban, Bait Na’ama, 2700m-2750m, 24.II.2000
*52 Prov. Sana’a, 15°17‘N, 44°00‘E, Jabal an Nabi Shu’ayb, SE-side, 3200m, 25.II.2000
*53 Prov. Sana’a, 15°09‘N, 43°52‘E, Pass sw Suq Baw’an, 2900m, 25.II.2000
*54 Prov. Sana’a, 15°02‘N, 43°38‘E, Jabal al Hotep (s Manakhah), 2800m, 26.II.2000
*55 Prov. Sana’a, 15°05‘N, 43°43‘E, Naqil Manakhah, 1730m, 27.II.2000
*56 Prov. Al Hudaydah, 14°52‘N, 43°25‘E, Jabal Burra foothills, 23 km se Bajil, 350m, 28.II.2000
*58 Prov. Al Hudaydah, 14°53‘N, 43°26‘E, Jabal Burra, 25 km se Bajil, 550m, 29. II. and 1.III.2000
*59 Prov. Sana’a, 14°40‘N, 42°22‘E, Jabal Raymah, 20 km E Al Mansuriyah, 560m, 2.III.2000
*60 Prov. Sana’a, 14°40‘N, 42°22‘E, Jabal Raymah, 25 km E Al Mansuriyah, Wadi Bullbull, 2 km se Khansa, 700m, 3.III.2000
*61 Prov. Ta’izz, 13°26‘N, 43°53‘E, Wadi Sab sw Ta’izz,village Hedra, 1200m, 4.III.2000
*62 Prov. Ta’izz, 13°23‘N, 43°57‘E, Jabal Sabir, 2920m, alpine veg., 5.III.2000
*63 Prov. Sana’a, 13°48‘N, 44°10‘E, Mahal al Houmeira, 5 km non Al Qa’idah, 1840-1900m, 6.III.2000
*64 Prov. Sana’a, 13°45‘N, 44°10‘E, street Ta’izz-Ibb, 5 km s Nagdal Ahmar, 2280m, 7.III.2000
*65 Prov. Ibb, 14°03‘N, 44°12‘E, Lower Wadi Malhama, Village Malhama, 20 km non Ibb, 1650m, 8.III.2000
*66 Prov. Ibb, 14°03‘N, 44°12‘E, Upper Wadi Malhama, 1900m, village Alwadha, 9.III.2000
*67 Prov. Ibb, 14°00‘N, 44°12‘E, Wadi Jannat (Paradise valley), village Miikhab, 1860m, 10.III.2000
*68 Prov. Ibb, 13°53‘N, 44°06‘E, 2 km n pass w Ibb, village Diatam, 2300m, 11.III.2000

*69 Prov. Ibb, 13°53'N, 43°58'E, Lower Wadi Duur, village Azuhriya, 1350m, 12.III.2000
*70 Prov. Ibb, 13°53'N, 43°58'E, Wadi Merhab, village Jalajil, 1600m, 13.III.2000
*71 Prov. Sana'a, 15°23'N, 44°07'E, Sana'a City, 2300m, 14.III.2000

List of collecting sites and dates by B. Müller **1987 (South Yemen, P.D.R.Y.)**

M2 South Yemen/P.D.R.Y, Aden Governate, Aden, 2.VI.1987
M3-5 South Yemen/P.D.R.Y, Lahej Governate, Al Dhala, 1500m, 3.-5.VI.1987
M6-11 South Yemen/P.D.R.Y, Lahej Governate, Al Dhala, 1600m, 6.-11.VI.1987
M12-14 South Yemen/P.D.R.Y, Lahej Governate, 7 km NW Al Dhala, Jihafi Mts., Al Sareer, 2200m, 12.-14.VI.1987
M15-20 South Yemen/P.D.R.Y, Lahej Governate, 20 km NE Al Dhala, Al Awabil, 2000m,15.-20.VI.1987
M20-23 South Yemen/P.D.R.Y, Lahej Governate, 9 km SSW Al Dhala, Thee Gelal, 1250m, 20.-23.VI.1987
M24 South Yemen/P.D.R.Y, Lahej Governate, Al Dhala, 1600m, 24.VI.1987
M25,26 South Yemen/P.D.R.Y, Lahej Governate, Laboos, 2100m, 25./26.VI.1987
M29,30 South Yemen/P.D.R.Y, Lahej Governate, Hadd region, Bani Bakk, 2100m, 29./30.VI.1987
M2 South Yemen/P.D.R.Y, Lahej Governate, Laboos, 2100m, 2.VII.1987
M4-8 South Yemen/P.D.R.Y, Aden Governate, Aden, 4.-8.VII.1987

The assessment of status is subjective because it depends on the techniques of obtaining the information. If condensed, the abbreviations use above are thusly defined:
ab. abundant (> 40 specimens)
f.c. fairly common (> 10 specimens)
sc. scarce (4-10 specimens)
occ. occasional (1-3 specimens)

b) German Oman expeditions 2009-2013

2009
*1/2009 "Prov. Batinah, Al Awabi vic., Wadi Bani Awf, 29.-30.xii.2009, 430m, N 23°20'01'', E 57°29'23.5'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*2/2009 "Prov. Al Dakhillijah, Birkat Al Sharaf, 21.xii.2009, 1810m, N 23°10'10'', E 57°25'82'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*3/2009 "Prov. Dhofar, 10km N of Salalah, Wadi Nahiz, 22.xii.2009, 350m, N 17°10'52'', E 54°05'47'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*4/2009 "Prov. Dhofar, 20km w of Al Mugsahyl, 730m, 23.-26.xii.2009, N 16°50'27'', E 53°40'78'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*5/2009 Prov. Dhofar, 20km w of Al Mugsahyl, 730m, 23.-26.xii.2009, N 16°50'27'', E 53°40'78'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*6/2009 "Sur vic., 9km S of Ras al-Hadd (Turtle Beach vic.), 28 xii.2009, 5m (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*7/2009 Prov. Al Sharqiah, Dawwah vic., Wadi Bani Khalid, 27.x.2009 (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
"Prov. Batinah, Al Awabi vic., Wadi Bani Awf, 29.-30.xii.2009, 430m, N 23°20'01'', E 57°29'23.5'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);

2010
*1/2010 "Prov. Al Dakhillijah, Birkat Al Sharaf, 30.vii.2010, 1810m, N 23°10'10'', E 57°25'82"(leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*2/2010 "Prov. Dhofar, Salalah vic., Ain Jarziz, 01.viii.2010, 170m, N 17°06'63'', E 54°03'82'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*3/2010 "Prov. Dhofar, 20km W of Al Mugsahyl, Wadi Afawl, 90m, 02./07.viii.2010, N 16°51'99'', E 53°49'09'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*4/2010 "Prov. Dhofar, 20km w of Al Mugsahyl, 730m, 05./08.viii.2010, N 16°50'27'', E 53°40'78'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*5/2010 "Prov. Dhofar, Ain Razat Caves, 03.viii.2010 LF,224m, N 17°07'54'', E 54°14'53'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*6/2010 "Prov. Dhofar, 10km E of Taqua, 04. viii.2010, 5m, N 17°03'21'', E 54°31'31.5'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*7/2010 Prov. Dhofar, 10km E of Taqua (*Boscia*-zone), 04. viii. 2010, 76m, N 17°03'21'', E 54°31'31,5' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
"Prov. Dhofar, 2 km westl. Taqua (Sabkha-Veg.), N 17°02'08'', E 54°22'15'', 6.viii.2010 (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
*8/2010 "Prov. Dhofar, Canyon 6km N of Dalkut, 09.viii.2010 LF, 605m, N 17°03'21'', E 53°13'19'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
"Prov. Batinah, Al Awabi vic., Wadi Bani Awf, 10.viii.2010, 1810m, *Dodonaea* Zone, N 23°10'09'', E 57°25'82'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
"Prov. Dhofar, 20km w of Al Mugsahyl, 730m, 08.x.2010, N 16°50'27'', E 53°40'78'' (leg. Stadie & Löbel)" (coll. D. Stadie);
"Prov. Dhofar, Sarfait vic., 1km E of Hagarir 12.x.2010, 764m, N 16°42'17'', E 53°10'32'' (leg. Stadie & Löbel)"

(coll. D. Stadie);

2011

*1/2011 "Prov. Al Dakhillijah, Birkat Al Sharaf, 06./07.x.2011, 1810m, N 23°10'10'', E 57°25'82'' (leg. Stadie & Löbel)" (coll. D. Stadie);
*2/2011 Prov. Al Dakhillijah, Wadi Tanuf 3,5km E of Al Hoota cave), 783m, 04.x.2011, N 23°04'10'', E 57°22'56'' (leg. Stadie & Löbel)" (coll. D. Stadie);
*3/2011 Prov. Dhofar, 20km w of Al Mugsahyl, 730m, 08.x.2010, N 16°50'27', E 53°40'78'' (leg. Stadie & Löbel)" (coll. D. Stadie);
*4/2011 "Prov. Dhofar, Salalah vic., Ain Jarziz, 09/10.x.2011, 170m, N 17°06'52'', E 54°04'26'' (leg. Stadie & Löbel)" (coll. D. Stadie);
*5/2011 Prov. Dhofar, Ain Razat Caves, 11./12.x.2011, 224m, N 17°07'54'', E 54°14'53'' (leg. Stadie & Löbel)" (coll. D. Stadie);
*6/2011 "Prov. Dhofar, 20km W of Al Mugsahyl, Wadi Afawl, 90m, 11.x.2011, N 16°51'99'', E 53°49'09'' (leg. Stadie & Löbel)" (coll. D. Stadie);
*7/2011 "Prov. Dhofar, Sarfait vic., 1km E of Hagarir 12.x.2010 LF (light trapping), 764m, N 16°42'17'', E 53°10'32'' (leg. Stadie & Löbel)" (coll. D. Stadie);
*8/2011 "Prov. Dhofar, Salalah vic., Ghadu 13.x.2011, 769m, N 17°07'21'', E 53°59'29'' (leg. Stadie & Löbel)" (coll. D. Stadie);
*9/2011 Prov. Al Dakhillijah, Al Jabal al Akdhar, Al Hotta Resthouse, 22./23.II.2011, 1968m, N 23°09'31'', E 57°25'24'' (leg. Schellhorn & Schnitter);
*10/2011 Prov. Al Dakhillijah, Al Jabal al Akdhar, near al Hoota cave, 24.II.2011, 675m, N 23°04'02'' E 57°22'28'' (leg. Schellhorn & Schnitter);
*11/2011 Jalaan Bani BU Ali, end of Wadi Wahiba, 26.II.2011, 93m, N22°00'31'', E 59°18'21'' (leg. Schellhorn & Schnitter);
*12/2011 Al Ashkarah, Youth Hotel, N 21°49'23'', E 59°33'02'' (leg. Schellhorn & Schnitter);
*13/2011 Prov. Al Sharqiah, Maslaq SW of Sur, 28.II.2011, 36m, N 22°30'44'', E 59°25'18'' (leg. Schellhorn & Schnitter);
*14/2011 Prov. Al Sharqiah, Wadi Tiwi, N 22°47'29'', E 59°13'44'' (leg. Schellhorn & Schnitter);
*15/2011 Prov. Al Sharqiah, Al Ramlah, N 23°12'56'', E 58°56'04'' (leg. Schellhorn & Schnitter);

2013

*1/2013 Prov. Dhofar, Salalah, Samharam Tourist Village, 7./14.iii.3013, 10m, N 16°59'19'', E 54°01'45'' (leg. Schellhorn & Schnitter);
*2/2013 Prov. Dhofar, Jebel al Quara, Ayn Garziz, 07./13.iii.2013, 112m, N 17°06'40'', E 54°03'50'' (leg. Schellhorn & Schnitter);
*3/2013 Prov. Dhofar, Jebel al Quara, Wadi Darbat, 08./12.iii.2013, 192m, N 17°06'20'', E 54°27'11'' (leg. Schellhorn & Schnitter);
*4/2013 Prov. Dhofar, Jebel al Quara, Ayn Tabraq, 09.iii.2013, 90m, N 17°06'00'', E 54°19'37'' (leg. Schellhorn & Schnitter);
*5/2013 Prov. Dhofar, Ajdarawt W of Salalah, 10.iii.2013, 1014m, N 16°47'56'', E 53°32'52'' (leg. Schellhorn & Schnitter);
*6/2013 Prov. Dhofar, Jebel al Quara, Ayn Razat, 11.iii.2013, 236m, N 17°07'40'', E 54°14'59'' (leg. Schellhorn & Schnitter);

Order Lepidoptera Linnaeus, 1758

Superfamily Cossoidea Leach, [1815]

Family Cossidae Leach, [1815]

Subfamily Cossinae Leach, [1815]

Cossus cossus kossai Wiltshire,1957

Cossus cossus kossai Wiltshire, 1957, The Lepidoptera of Iraq 145, pl. 5, figs 1-3. L. t.: Iraq, Shaqlawa

Cossus cossus omrana Wiltshire, 1957

Cossus cossus kossai Wiltshire, 1957, The Lepidoptera of Iraq 144, pl. 5, figs 4, 5. L. t.: Iraq, Haj Omran

Note: Figured by Wiltshire (1957, pl. 5, figs 1-5, adults), de Freina & Witt (1990, pl. 1, figs 24-35, adults; fig. 19, male genitalia).

Distribution: *Cossus cossus* (Linnaeus, 1758) is a well-known Palaearctic (Irano-Turanian) species, with Palaearctic distribution from Europe toEast Asia (Yakovlev, 2011). The southern limit of range extends along the northern border of the Sahara to the Levante, Iraq and Iran. In Israel only from Mt. Hermon (Yakovlev, 2010).

North Africa	de Freina & Witt, 1990 (Morocco to Tunisia); Yakovlev, 2010; 2011 (Morocco, Algeria, Tunisia; Mauritania);
Levante	Wiltshire, 1957 (Lebanon); Yakovlev, 2010; 2011 (Lebanon; Syria; Jordan; Israel);
Asia Minor	Wiltshire, 1957; de Freina & Witt (1990);
Iraq	Wiltshire, 1957; Yakovlev, 2011;
Iran	Wiltshire, 1957; Yakovlev, 2010, 2011.

Bionomics: Larvae of *C. cossus* live internally in the trunks of a variety of deciduous trees including hardwoods such as *Fagus* and *Quercus*, although usually the species favours softwoods, particularly *Salix* and *Populus*. Lists of hostplants are given by de Freina & Witt (1990) and Yakovlev (2010). The species inhabits the tree zone and oases.

Parahypopta caestrum (Hübner, [1804])

Bombyx caestrum Hübner, [1804], Sammlung Europäischer Schmetterlinge: 151, pl. 49, fig. 199. L. t.: [Europe]

Note: Figured by de Freina & Witt (1990, pl. 2, figs 32-36, pl. 3, figs 1-7, adults;fig. 22, male genitalia), Yakovlev (2011, pl. 3, fig. 4, adult). Male genitalia Pl. 1, Fig. f.

Distribution: Irano-Turanian. Known from S Europe, Near and Middle East, eastward to Kazakhstan: distribution map cf. de Freina & Witt (1990, map 11).

Levante	Amsel, 1933; de Freina & Witt, 1990 (Lebanon; Palestine; Syria); Yakovlev, 2010 (Syria; Jordan; Israel); 1 ♂, "C Israel, Shefala, 5 km W of Tirosh, 20 km E Ashdod, 200m, 8.v.1999 (gen.prep. H. Hacker 12450♂) (leg. Li & Müller)" (ZSM);
Asia Minor	de Freina & Witt, 1990; Yakovlev, 2010; 2011;
Iraq	Yakovlev, 2010;
Iran	Amsel, 1933.

Bionomics: Larvae in rootstocks of Liliaceae, predominatly *Asparagus* spp. (de Freina & Witt, 1990).

Camellocossus sindbad Yakovlev & Saldaitis, 2015 (Pl. 143, Figs 1, 2)

Camellocossus sindbad Yakovlev & Saldaitis, 2015, Zootaxa **4013** (1): 147. figs 1, 5, 6a, 6b. L. t.: S. Oman, W. from Salalah, 20 km W. from Al Mughsayl

Note: Figured by Yakovlev & Saldaitis (2015, fig. 1, adult; fig. 6, male genitalia), Wiltshire (1990, fig. 3, adult) [as pale form of *Alcterogystia l-nigrum* (Bethune-Baker, 1894)]. The closely related East African *C. abyssinica* (Hampson, 1910) has been figured by Yakovlev (2011, pl. 1, fig. 11, adult; fig. 3, male genitalia) and Yakovlev & Saldaitis (2015, fig. 3, adult; fig. 8, male genitalia). Male genitalia Pl. 1, Figs a, b.

Distribution: Saharo-Eremic element, endemic to the southern Arabian Peninsula: Oman and Yemen. *C. abyssinica* is known from Ethiopia and Mauritania (Yakovlev, 2011).

Oman	[Wiltshire, 1990, fig. 3]; Yakovlev & Saldaitis, 2015; 1 ♂, 1 ♀, "Prov. Dhofar, 20km W of Al Mugsahyl, Wadi Afawl, 90m, 11.x.2011, N 16°51'99'', E 53°49'09'' (gen.prep. H. Hacker 22862♂) (leg. Stadie & Löbel)" (coll. D. Stadie); 1 ♂, "Prov. Dhofar, 20km w of Al Mugsahyl, 730m, 23.-26.xii.2009, N 16°50'27'', E 53°40'78'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
Yemen	Hacker *et al*., 2001; *19 (1) (gen.prep. H. Hacker 12453♂); reported as "*Paropta* sp."); Yakovlev, 2011;

Bionomics: Unknown.

Paropta paradoxus (Herrich-Schäffer, [1851] (Pl. 143, Fig. 3)

Cossus paradoxus Herrich-Schäffer, [1851], Systematische Bearbeitung der Schmetterlinge von Europa, zugleich als Text, Revision und Supplement zu Jakob Hübner´s Sammlung Europäischer Schmetterlinge **6**: 39, pl. Hepialides et Cossides 2, fig. 9. L. t.: Smyrna [Turkey, Izmir]

Note: Figured by de Freina & Witt (1990 pl. 3, figs 30-32, adults; text fig. 14, antennae); Lewandowski & Fischer (2002, figs 13, 15, adults); Yakovlev (2011, pl. 1, fig. 6, adult).

Distribution: Irano-Turanian. *P. paradoxus* is distributed from Greece (Rhodos, Karpathos), Turkey, Cyprus (Lewandowski & Fischer, 2002) and the Levante to the Arabian Peninsula and Iran (Yakovlev, 2011).

Saudi Arabia	Wiltshire, 1980a; 1990; Kiriakoff, 1960; Yakovlev, 2010; 2011;
North Africa	Yakovlev, 2010; 2011 (Egypt);
Levante	Amsel, 1933; Yakovlev, 2010; 2011 (Lebanon; Syria; Jordan; Israel);
Asia Minor	Herrich-Schäffer, [1851]; Amsel, 1933; Yakovlev, 2011;
Iran	Yakovlev, 2010; 2011.

Bionomics: Larvae on *Ficus*, *Albizia, Vitis*, *Olea*, *Ceratonia, Acacia arabica, Crataegus* (Andres & Seitz, 1923; Lewandowski & Fischer, 2002; Yakovlev, 2010; 2011).

Semitocossus johannes (Staudinger, 1900) (Pl. 143, Fig. 4)

Paropta johannes Staudinger, 1900, Deutsche Entomologische Zeitschrift Iris, Dresden **12**: 354, pl. 5, fig. 14. L. t.: [Israel] Westufer des Jordan

= *Cossus striolatus* Rothschild, 1912, Verbesserungen und Zusätze zu den Cossiden. In: Seitz, A., Die Gross-Schmetterlinge der Erde. Die Paläarktischen Spinner und Schwärmer: 451. L. t: Magnesia [Turkey]

Note: Figured by Yakovlev (2011, pl. 1, fig. 8, adult).

Distribution: Irano-Turanian. *S. johannes* is known from SW Turkey and the Levante (Yakovlev, 2011).

Levante	Staudinger, 1900 ([Israel]; Amsel, 1933; Yakovlev, 2010; 2011 (Jordan, Israel);1 ♂, "[Israel] Jerusalem, [18]90 (gen.prep. H. Hacker 22814♂) (leg. Paulus)" (ex coll. Staudinger, NHMU);
Asia Minor	Yakovlev, 2011.

Bionomics: Host plants unknown; moth collected in Israel in April, August and October (Yakovlev, 2010).

Wiltshirocossus aries (Püngeler, 1902) (Pl. 143, Figs 5, 12)

Cossus aries Püngeler, 1902b, Deutsche Entomologische Zeitschrift Iris, Dresden **15**: 145. L. t.: Jerusalem [Israel]

= *Cossus cheesmani* Tams, 1925, Annals and Magazine of Natural History, Series 9, **15**: 147. L. t.: Saudi Arabia, Jabrin, 200 miles SSW of Hofuf

Note: Figured by Wiltshire (1990, figs 1, 2, adults), de Freina & Witt (1990, pl. 2, figs 6-20, adults), Yakovlev (2011, pl. 1, fig. 19, adult). Four synonyms (cf. Yakovlev, 2011) and also the taxa *cheesmani* Tams, 1925 (described from Jabrin, SSW of Hufuf, Saudi Arabia) and *aegiptiaca* Hampson, 1910 (described from Suez, Egypt) belong to the nominotypical subspecies. Male genitalia Pl. 1, Fig. g.

Distribution: Saharo-Eremic. *W. aries* ranges from southernmost Spain (Almeria), the Canary Isles and Mauritania throughout Africa north of the Sahara to the Levante and the Arabian Peninsula (Yakovlev, 2010; 2011).

Saudi Arabia	Tams, 1925; Wiltshire, 1964 (Bahrain); Wiltshire, 1980a; 1990; Yakovlev, 2011; Hejaz, 1997 (Legrain, unpubl.);
Oman	Yakovlev, 2010;
UAE	Legrain & Wiltshire, 1998; Yakovlev, 2011; ♀, "Abu Dhabi, Sameih, 24°43'40"N/54°49'33"E, 10m, 14.xii.2012 (leg. Breithaupt)" (coll. Breithaupt);
North Africa	Hampson, 1910 (Egypt, Suez); de Freina & Witt, 1990 (Morocco to Egypt); Yakovlev, 2011 (Mauritania and Morocco to Egypt); Speidel & Hassler, 1989 (Algerian Sahara);
Levante	Püngeler, 1902b (Israel); Amsel, 1933; Wiltshire, 1949 (Sinai); Yakovlev, 2010; 2011 (Syria; Israel).

Bionomics: *W. aries* inhabits semideserts; according to de Freina & Witt (1990), the larvae feed in [stems of] *Pistaceus terebinthus*, probably also on *Rhus* and *Schinus* spp.

Holocerus gloriosus laudabilis Staudinger, 1899 (Pl. 143, Fig. 6)

Holocerus Laudabilis Staudinger, 1899, Deutsche Entomologische Zeitschrift Iris, Dresden **12**: 159. L. t.: [Israel/Jordan] Umgebung Todtes Meer, namentlich im unteren Jordantal

Note: Figured by Wiltshire (1957, pl. 2, figs 9, 10, adults), Wiltshire (1990, figs 6-8, adults).

Distribution: Irano-Turanian. The nominotypical subspecies *gloriosus* (Ershov, 1874) occurs in Central Asia (Turkmenistan, Uzbekistan, Kazakhstan, N Afghanistan, N Iran), further south replaced by ssp. *mesopotamicus* Watkins & Buxton, 1921 (Iraq, S Iran, S Afghanistan) and ssp. *laudabilis* (Levante and Arabian Peninsula). The reports given by de Freina & Witt (1990, distribution map 9) from Algeria, Tunisia, Libya and Egypt refer to the next species.

Saudi Arabia	Wiltshire, 1964 (Bahrain); Wiltshire, 1980a; 1990; Yakovlev, 2011;
Oman	Wiltshire, 1977b; Yakovlev, 2011; de Freina, 2013;
UAE	Legrain & Wiltshire, 1998;
Levante	Staudinger, 1899 (Israel; Jordan); Amsel, 1933; Wiltshire, 1990 (Palestine); Yakovlev, 2010; 2011 (Jordan; Israel; Sinai);
Iraq	Watkins & Buxton, 1921; Wiltshire, 1957; Yakovlev, 2011;
Iran	Wiltshire, 1990; Yakovlev, 2011.

Bionomics: Larvae in roots of desert plants (Wiltshire, 1957).

Holocerus holosericeus faroulti Oberthür, 1911

*Holocerus faroulti*Oberthür, 1911, Etudes de Lépidoptérologie Comparée **5** (1): 326, pl. LXXI: 658. L. t.: [Algeria] Magraroua, près El-Outaya, prov. Constantine
= *Holocerus desioi* Turati, 1936, Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano **75**: 391, figs 1, 2. L. t.: [Libya] Agedabia, Cirenaica

Note: Figured by Daniel (1959, pl. 4, figs 21 a-d, e, f, adult), de Freina & Witt (1990, pl. 2, figs 21-27, adults),

Distribution: Saharo-Sindian element with similar distribution to that of the preceding species in Asia, but also including North Africa. The nominotypical subspecies was described from Turkmenistan: Askhabad and reported from there north- and eastward to Kazakhstan, Mongolia, NW China, Afghanistan and Iran. Ssp. *darwesthana* Daniel, 1959 inhabits SW Afghanistan and S Iran. Ssp. *faroulti* Oberthür, 1911 is known from N Africa (Morocco, Algeria, Tunisia, Libya, Egypt), the Levante and parts of the Arabian Peninsula (Yakovlev, 2011).

UAE	Yakovlev, 2011;
North Africa	Turati, 1936 (Libya); Krüger, 1939 (Libya); Yakovlev, 2011 (Morocco, Algeria, Tunisia, Libya, Egypt);
Levante	Daniel, 1959; Yakovlev, 2010; 2011 (Jordan; Israel);
Iran	Yakovlev, 2011.

Bionomics: *H. holosericeus* ssp. *faroulti* inhabits semi-arid areas. Early stages unknown.

Holocerus zarudnyi Grum-Grshimailo, 1902 (Pl. 143, Figs 7, 8)

Holocerus zarudnyi Grum-Grshimailo, 1902, Annuaire de Musée Zoologique de l'Académie Impériale des Sciences de St. Petersbourg **7**: 200. L. t.: [Iran] Persia, Bampur

Note: *H. zarudnyi*is a rare species, known from only a few specimens. One Yemeni specimen was figured by Hacker (1999) erroneously as "*Holocerus gloriosus laudabilis* Staudinger, 1899".

Distribution: Omano-Makranian. Known from S Iran and Yemen (Yakovlev, 2006; 2011).

Yemen	Yakovlev, 2006; 2011; *20 (1); *21 (1);
Iran	Grum-Grshimailo, 1902; Yakovlev, 2006; 2011.

Bionomics: Unknown.

Alcterogystia l-nigrum (Bethune-Baker, 1894) (Pl. 143, Fig. 9)

Cossus l-nigrum Bethune-Baker, 1894, Transactions of the Entomological Society of London 1894: 36, pl. 1, fig. 3. L. t.: [Egypt] Alexandria

Note: Figured by Wiltshire (1990, fig. 4, adult), de Freina & Witt (1990 pl. 3, figs 33-40, adults), Yakovlev (2011, pl. 2, fig. 26, adult). Fig. 4 in Wiltshire (1990) is *Camellocossus abyssinica* (Hampson, 1910). The facies of the specimens figured by de Freina & Witt (1990) match those from Yemen. Male genitalia Pl. 1, Fig. d.

Distribution: Saharo-Eremic. *A. l-nigrum* occurs in Eygpt and the Arabian Peninsula (Yakovlev, 2011). According to de Freina & Witt (1990), also from Mauritania and Morocco along the northern border of the Sahara eastward to Egypt (distribution map 16).

Saudi Arabia	Wiltshire, 1980a; 1990; Yakovlev, 2011; Asir,1992-98 (Legrain, unpubl.);
Oman	Wiltshire, 1980b; 1985; 1990; Yakovlev, 2011;
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001; *11 (occ.); *14 (occ.) (gen.prep. H. Hacker 12443♂); *39 (sc.); *40 (2) (gen.prep. H. Hacker 12440♂); *43 (1); *49 (1); *53 (ab.) *54 (f.c.); *64 (ab.); *65 (f.c.); *66 (1); *67 (ab.); 68 (sc.); Yakovlev, 2011;
North Africa	Bethune-Baker, 1894 (Egypt, Alexandria); de Freina & Witt, 1990 Mauritania, Morocco to Egypt); Yakovlev, 2011 (Egypt).

Bionomics: Larvae in stems of *Acacia nilotica*, *Albizia lebbeck* and *Tamarix articulata* (de Freina & Witt, 1990). *A. l-nigrum* inhabits arid and semi-arid areas along the border of the deserts.

Alcterogystia frater (Warnecke, [1930]) (Pl. 143, Fig. 10)

Cossus frater Warnecke, 1929 [1930], Internationale Entomologische Zeitschrift **23**: 389, fig. L. t.: Yemen, Sana´a, 2365m

Note: Figured by Warnecke (1929 [1930], fig., adults), Wiltshire (1990, fig. 5, adult). Male genitalia Pl. 1, Fig. c.

Distribution: East Saharo-Eremic. Endemic to the Arabian Peninsula.

Saudi Arabia	Wiltshire, 1986; 1990; Yakovlev, 2011;
Yemen	Warnecke, 1929; 1930a; 1930b; 1934; Wiltshire, 1983; 1990 Hacker et *et al*., 1999; Hacker *et al*., 2001; *14 (2); *40 (ab.) (gen.prep. H. Hacker 12440♂, 12457♂, 23068♂); *41 (1); *54 (occ.); *63 (sc.); *64 (f.c.); *65 (f.c.); *66 (sc.); *67 (f.c.); *68 (occ.); Yakovlev, 2011.

Bionomics: Unknown. *A. frater* occurs in areas with subtropical shrub and tree vegetation.

Afroarabiella tahamae (Wiltshire, 1949) (Pl. 143, Fig. 11)

Cossus tahamae Wiltshire, 1949, Bulletin de la Société Fouad I. d'Entomologie **33**: 371, pl., fig. 19. L. t.: Saudi Arabia, near Jedda, Buraiman, coastal plain

Note: Figured by Wiltshire (1990, fig. 9, adult). Male genitalia Pl. 1, Fig. e.

Distribution: East Saharo-Eremic. Endemic to the Arabian Peninsula.

Saudi Arabia	Wiltshire, 1949; 1980a; 1990; Yakovlev, 2011;
Yemen	Hacker *et al*., 2001; *11 (1); *37 (1) (gen.prep. H. Hacker 12465♂);*40 (1); *43 (1) (gen.prep. H. Hacker 12460♂); reported as "*Paropta* sp.");Yakovlev, 2011.

Bionomics: Unknown. *A. tahamae* inhabits arid and semi-arid areas; larvae probably in *Acacia* spp.

Africanetz makumanzan Yakovlev, 2009 (Pl. 143, Fig. 13)

Africanetz makumanzan Yakovlev, 2009b, Euroasian Entomological Journal, Novosibirsk **8** (3): 359, pl. 4, fig. 26. L. t.: Arabia, Jedda

Note: Figured by Yakovlev (2009b, pl. 4, fig. 26, adult); only known from the holotype specimen (BMNH).

Distribution: East Saharo-Eremic. Endemic to the Arabian Peninsula.

Saudi Arabia	Yakovlev, 2009b, 2011.

Bionomics: Unknown.

Eremocossus vaulogeri jordana (Staudinger, 1898) (Pl. 143, Fig. 14)

Hypopta ? Jordana Staudinger, 1898, Deutsche Entomologische Zeitschrift Iris, Dresden **10**: 271, pl. 9, fig. 12. L. t.: [Israel/ Jordan] Jordanthal, unweit des Todten Meeres

Note: Figured by Wiltshire (1990, fig. 11, adult), de Freina & Witt (1990 pl. 3, figs 41-49, adults; text fig. 16, antennae), Yakovlev (2011, pl. 3, fig. 10, adult). Gillett (1998) annotates the subspecies *loutchistanensis* (Daniel, 1949), described from S Iran, for N Oman.

Distribution:*Eremocossus vaulogeri* (Staudinger, 1897) was described fro Algeria (Chellata, Prov. Algier). It is a Saharo-Sindian species, ranging in several subspecies along the southern border of the Palaearctic Region from Morocco, Mauritania and Senegal in the west throughout the eremic zone to Iran in the east (Yakovlev, 2011).

Saudi Arabia	Wiltshire, 1980a; 1990; 1964 (Bahrain); Kiriakoff, 1960; Yakovlev, 2011; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Hejaz, 1997 (Legrain, unpubl.); Asir,1992-98 (Legrain, unpubl.);
Oman	Wiltshire, 1980b; Gillett, 1998; Yakovlev, 2011; de Freina, 2013;
UAE	Legrain & Wiltshire, 1998; Yakovlev, 2011;
Yemen	Yakovlev, 2010; 2011;
North Africa	Staudinger, 1898 (Algeria); de Freina & Witt, 1990; Yakovlev, 2011 (Morocco, Mauritania, Senegal, Algeria, Tunisia, Libya, Egypt);
Levante	Staudinger, 1898 (Israel; Jordan); Amsel, 1933; Yakovlev, 2010; 2011 (Jordan; Syria; Israel);
Iraq	Yakovlev, 2010; 2011;
Iran	Daniel, 1949; Yakovlev, 2011.

Bionomics: *E. vaulogeri* and its various subspecies inhabit semi-arid and arid areas. Early stages unknown.

Mormogystia reibellii (Oberthür, 1876) (Pl. 143, Fig. 15)

Hypopta ? reibellii Oberthür, 1876, Études d´ Entomologie. Déscriptions d´Insectes Lépidoptères nouveaux ou peu connus **1**: 40, pl. 4, fig. 1. L. t.: [Algeria] Biskra

= *Eremocossus proleuca* Hampson, 1896, In: Walsingham & Hampson, 1896, Proceedings of the Zoological Society of London

1896: 276, pl. 10, fig. 24. L. t.: [Yemen] Aden
= *Hypopta reibelli* Wiltshire, 1980, Journal of Oman Studies, Special Report **2**: 189
= *Hypopta mussolinii* Turati, 1927, Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano **65**:: 322, fig. 5. LT: [NE Libya] Giarabub
= *Hypopta cognata* Krüger, 1939, Annali del Museo Libico Storia Naturale **1**: 331–332, pl. 13: figs 13–14. LT: [Libya] Beni Ulid

Note: Figured by Wiltshire (1990, fig. 12, adult), de Freina & Witt (1990 pl. 3, figs 54-58, adults); Borth *et al*. (2011, figs 4, 5, adults; figs 22, 23, 24, male genitalia), Yakovlev (2011, pl. 3, fig. 12, adult).

Distribution: Saharo-Eremic, known from N Africa, including the Central Sahara, and the Arabian Peninsula (Yakovlev, 2011).

Saudi Arabia	Wiltshire, 1980a; 1990; Yakovlev, 2011; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Hejaz, 1997 (Legrain, unpubl.); Asir,1992-98 (Legrain, unpubl.);
Oman	Wiltshire, 1977b; 1980b; Yakovlev, 2011; Borth *et al*., 2011; 1 ♀, "Prov. Dhofar, Canyon 6km N of Dalkut, 09.viii.2010 LF, 605m, N 17°03'21", E 53°13'19" (gen.prep. H. Hacker 22902♀) (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie); *4/2013; *6/2013;
UAE	Legrain & Wiltshire, 1998; Yakovlev, 2011;
Yemen	Hampson, 1896; Warnecke, 1940; Hacker *et al*., 1999; Hacker *et al*., 2001; *11 (occ.); *12 (sc.); *17 (f.c.); *19 (occ.); *36 (1); *37 (f.c.); *42 (2); *43 (f.c.); *57 (occ.); *55 (sc.); Yakovlev, 2011;
North Africa	Oberthür, 1876 (Algeria); Turati, 1927 (Libya); Krüger, 1939 (Libya); Speidel & Hassler, 1989 (Algerian Sahara); Herbulot & Viette, 1952 (Chad); Yakovlev, 2011 (Mauritania, Algeria, Tunisia, Libya, Niger, Chad, Egypt);
Levante	Wiltshire, 1949b (Sinai); Yakovlev, 2010 (Israel; Syria; Jordan).

Bionomics: *M. reibellii* inhabits semideserts. Larva on *Acacia* (Hampson, 1896).

Mormogystia brandstetteri Saldaitis, Ivinskis & Yakovlev, 2011 (Pl. 143, Fig. 16)

Mormogystia brandstetteri Saldaitis, Ivinskis & Yakovlev, 2011, ZooKeys **122**: 44, figs 1, 2, 21, 27. L. t.: Yemen, Socotra, central part of Socotra Island, Diksam loc., 14

Note: Figured by Borth *et al*. (2011, figs 1, 2, adults, figs 21, 27; male and female genitalia).

Distribution: Endemic to Socotra.

Socotra	Hampson, 1896; Rebel, 1907; Borth *et al*., 2011; Yakovlev, 2011.

Bionomics: The larva of *M. brandstetteri* is very likely to live in *Acacia* as does that of the closely related *M. reibellii* (Borth *et al*., 2011).

Isoceras bipunctatum (Staudinger, 1887) (Pl. 143, Fig. 17)

Endagria Bipunctatum Staudinger, 1887, Entomologische Zeitung. Herausgegeben von dem Entomologischen Vereine zu Stettin **48**: 94. L. t.: [Turkey] Maras

Note: Figured by Yakovlev (2011, pl. 3, fig. 13, adult).

Distribution: Irano-Turanian. *I. bipunctatum* is distributed from Turkey to Iran and the Levante.

Levante	Amsel, 1933; Yakovlev, 2010; 2011 (Lebanon; Syria; Israel; Jordan);
Asia Minor	Staudinger, 1887; Amsel, 1933; Yakovlev, 2010; 2011;
Iraq	Wiltshire, 1939a; 1957; Yakovlev, 2010; 2011;
Iran	Wiltshire, 1946b; Yakovlev, 2011.

Bionomics: Unknown.

Stygioides colchicus (Herrich-Schäffer, [1851]) (Pl. 143, Fig. 18)

Stygia colchicus Herrich-Schäffer, [1851], Systematische Bearbeitung der Schmetterlinge von Europa, zugleich als Text, Revision und Supplement zu Jakob Hübner´s Sammlung Europäischer Schmetterlinge pl. 2, fig. 10. L. t.: Amasya [Turkey]
=*Stygia colchica dercetis* Grum-Grshimailo, 1899, Annuaire de Musée Zoologique de l'Académie Impériale des Sciences de St. Petersbourg **4**: 469. L. t.: [Jordan, Wadi al Madjib] Valle fl. Arnon

Note: Figured by de Freina & Witt (1990, pl. 1, figs 2-5, adults; text fig. 21, male genitalia), Yakovlev (2011, pl. 3, figs 15, 16, adults).

Distribution: Irano-Turanian. *S. colchicus* is distributed from Central Italy, Greece (Peloponnes) and Crimea

to Turkey and the Levante(Yakovlev, 2011).

Levante — Grum-Grshimailo, 1899 (Jordan); Saldaitis *et al*., 2007 (Lebanon); Yakovlev, 2010; 2011 (Lebanon; Syria; Israel; Jordan);

Asia Minor — Herrich-Schäffer, [1851]; Yakovlev, 2010; 2011.

Bionomics: Larva on *Echium* and *Cynoglossum* (Korb, 1910).

Dieida judith Yakovlev, 2009 (Pl. 144, Fig. 1)

Dieida judith Yakovlev, 2009, Amurian Zoological Journal **1**: 56, pl. 9, figs 5, 6. L. t.: Israel, Northern Negev

Note: Figured by Yakovlev (2009, pl. 9, figs 5, 6, adults).

Distribution: Mediterranean. Endemic to the Levante (Yakovlev, 2011).

Levante Yakovlev, 2009 (Israel); Yakovlev, 2011 (Jordan; Israel).

Bionomics: *D. judith* occurs in desert and semidesert regions. Early stages unknown.

Dyspessa kabylaria A. Bang-Haas, 1906 (Pl. 144, Fig. 2)

*Dyspessa kabylaria*A. Bang-Haas, 1906, Deutsche Entomologische Zeitschrift Iris, Dresden **19**: 143. L. t.: Tunisia, Gafsa

Note: Figured by Wiltshire (1990, fig. 10, adult), de Freina & Witt (1990, pl. 4, figs 78-79, adults). Male genitalia Pl. 2, Fig. c.

Distribution: Saharo-Eremic. *D. kabylaria*is distributed from Algeria, Tunisia, Libya to Egypt, the Levante and the Arabian Peninsula (Yakovlev, 2010; 2011).

Saudi Arabia — Wiltshire, 1980a; 1990; Yakovlev, 2010; 2011; Asir, 1992-98 (Legrain, unpubl.);

North Africa — A. Bang-Haas, 1906 (Tunisia); de Freina & Witt, 1990; Yakovlev, 2011 (Algeria; Tunisia; Libya; Egypt);

Levante — Wiltshire, 1949 (Sinai); Yakovlev, 2010; 2011 (Jordan; Israel); 1 ♂, "S-Jordanien, Schauback, 24.v.1968 (gen.prep. H. Hacker 22771♂) (leg. J. Klapperich)" (coll. H. Hacker, ZSM); 4 ♂♂, "Jordanien, Romana, 28.ii.1968 (leg. J. Klapperich)" (coll. H. Hacker, ZSM);

Asia Minor — Yakovlev, 2011 (with ?).

Bionomics: *D. kabylaria*is found in the eremic areas close to the Sahara and the deserts eastward.

Subfamily Stygiinae Yakovlev, 2011

Neostygia postaurantia Wiltshire, 1980 (Pl. 144, Fig. 3)

Neostygia postaurantia Wiltshire, 1980b, Journal of Oman Studies, Special Report **2**: 190, pl., fig. 1. L. t.: Oman, Dhofar Prov., Burg Road, 44 km from Salalah

Note: Figured by Wiltshire (1980b, pl., fig. 1, adult), Yakovlev (2011, pl. 1, fig. 4, adult).

Distribution: Endemic to Oman, only known from the holotype specimen.

Oman — Wiltshire, 1980b; Yakovlev, 2011.

Bionomics: Unknown. The holotype was collected end of September.

Subfamily Zeuzerinae Boisduval, [1828]

Phragmacossia territa (Staudinger, 1879)

Phragmatoecia Territa Staudinger, 1879, Horae Societas Entomologicae Rossicae **14**: 341. L. t.: [Turkey] Kerasdere

= *Phragmacossia albida* sensu de Freina & Witt, 1990, nec Ershov, 1874

Note: Figured by de Freina & Witt (1990, pl. 4, figs 80-87, adults).

Distribution: Irano-Turanian. The range of *P. territa* extends from Central Asia (Turkmenistan, Uzbekistan, Tadjikistan; Iran) to Asia Minor and the Levante, (Yakovlev, 2010; 2011).

North Africa — Yakovlev, 2010; 2011 (Egypt);

Levante	Saldaitis *et al*., 2007 (Lebanon); Yakovlev, 2010; 2011 (Lebanon; Syria; Israel; Jordan);
Asia Minor	Staudinger, 1879; Yakovlev, 2011;
Iraq	Wiltshire, 1957;
Iran	Yakovlev, 2011.

Bionomics: According to Wiltshire (1957) larvae probably in grass-roots. However, de Freina & Witt (1990) give Compositae (Asteraceae), among them *Cynara cardunculus*. Not in *Phragmites* like the widespread and similar *Phragmataecia castaneae* (Hübner, 1790).

Aethalopteryx wiltshirei Yakovlev, 2009 (Pl. 144, Fig. 4)

Aethalopteryx wiltshirei Yakovlev, 2009b, Euroasian Entomological Journal, Novosibirsk **8** (3): 360, fig. 22, pl. 4, figs 32, 33. L. t.: Saudi Arabia, Asir, Al Foqa, *Olea-Dodonea*-Zone

= *Xyleutes pindarus* sensu Wiltshire, 1986; 1990; Hacker, 1999 nec Fawcett, 1916

Note: Figured by Wiltshire (1990, fig. 14, adult), Yakovlev (2009b, pl. 4, figs 32, 33, adults; male genitalia cf. fig. 22, those of *Aethalopteryx pindarus* Fawcett, 1916, cf. fig. 23; adult of *A. pindarus* figured on pl. 4, fig. 34).

Distribution: Endemic to the SW Arabian Asir Mountains (Yakovlev, 2009b; 2011). *A. pindarus* has an Ethiopian distribution, known from Kenya, Uganda and S Africa (Vari *et al.,* 2002; Yakovlev, 2011).

Saudi Arabia Wiltshire, 1986; 1990; Yakovlev, 2009; 2011; Asir,1992-98 (Legrain, unpubl.).

Bionomics: Unknown.

Aethalopteryx diksami Yakovlev & Saldaitis, 2010 (Pl. 144, Fig. 5)

Aethalopteryx diksami Yakovlev & Saldaitis, 2010, Esperiana Memoir **5**: 334, pl. 20, figs 5-7, gen. fig. L. t.: Yemen, Socotra Island Haghier Mts Dicksam

Note: Figured by Yakovlev & Saldaitis (2010, pl. 20, figs 5-7;gen. fig.).

Distribution: Endemic to Socotra (Yakovlev & Saldaitis, 2010).

Socotra Yakovlev & Saldaitis, 2010; Yakovlev, 2011; Borth *et al*., 2011.

Bionomics: The habitat of *A. diksami* was described by Borth *et al*. (2011).

[***Azygophleps inclusa*** (Walker, 1856)]

Zeuzera inclusa Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collections of the British Museum **7**: 1534. L. t.: [RSA] Port Natal

= *Zeuzera petax* Wallengren, 1860, Wiener Entomologische Monatschrift **4**: 43. L. t.: [RSA] Caffraria orientali

Distribution: Afrotropical-subtropical (Subsaharan) (Subsaharan) element. *A. inclusa* is widespread in subsaharan Africa (Yakovlev, 2011), but unknown on the Arabian Peninsula.

Azygophleps larseni Yakovlev & Saldaitis, 2011 (Pl. 144, Figs 6, 7)

Azygophleps larseni Yakovlev & Saldaitis, 2011, Neue Entomologische Nachrichten **66**: 84, pl. 8, figs 28, 29, text fig. 112, map 100. L. t.: Oman, Dhofar, Rakyut, 120 km W of Salalah

Note: Figured by Yakovlev & Saldaitis (2011, pl. 8, figs 28, 29, adults; text fig. 112), Borth *et al*. (2011, figs 25, 29, male and female genitalia). According to Yakovlev & Saldaitis (2011) the populations from Socotra differ from typical *A. larseni* from Oman in external appearance, but the authors refrained from assigning them to a separate taxon. In fact the rather old specimen figured on plate 2, fig. 7 (UMO) strongly resembles the continental African *A. inclusa* (Walker, 1856).

Distribution: East Afro-Eremic element. *A. larseni* is known from the Arabian Peninsula, Iraq and S Iran (Yakovlev, 2011); it replaces *A. inclusa* outside of Africa.

Saudi Arabia	Wiltshire, 1986; 1990; Asir,1992-98 (Legrain, unpubl.);
Oman	Wiltshire, 1985; 1986; 1990; Yakovlev & Saldaitis, 2011; *15/2011; "Oman Süd, Dhofar Region, Mirbat östlich, Küstenrgion, 21m, 29.x.-8.xi.2013 (leg. S. Lewandowski)" (coll. S. Lewandowski);
UAE	Legrain & Wiltshire, 1998;
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001; *7 (1); *24 (ab.) (gen.prep. H. Hacker 23084♂, 23089♂); *27

(f.c.); *34 (sc.); *36 (occ.); *39 (1) (gen.prep. H. Hacker 23080♂); *40 (occ.); *48 (1) (gen.prep. H. Hacker 23085♂); *55 (1) (gen.prep. H. Hacker 23074♂); *56 (1); *58 (f.c.); *59 (occ.); *62 (1); Yakovlev & Saldaitis, 2011;

Socotra — Hampson, 1903; Rebel, 1907; Yakovlev & Saldaitis, 2011;
Iraq — Yakovlev & Saldaitis, 2011;
Iran — Yakovlev & Saldaitis, 2011.

Bionomics: Unknown.

Azygophleps sheikh Yakovlev & Saldaitis, 2011 (Pl. 144, Fig. 8)

Azygophleps sheikh Yakovlev & Saldaitis, 2011, Neue Entomologische Nachrichten **66**: 85, pl. 8, fig. 30, text fig. 114, map 102. L. t.: Saudi Arabia, N-Asir, 40 km W Taif, 1000m

Note: Figured by Wiltshire (1985, fig. 75, adult; 1990, fig. 13, adult), Yakovlev & Saldaitis (2011, pl. 8, fig. 30; text fig. 114). The paratype specimen listed by Yakovlev & Saldaitis (2011) from Yemen (Lehej) is in coll. H. Hacker (not MWM = Museum Witt, Munich, as stated).

Distribution: East Afro-Eremic. Endemic to the SW Arabian Peninsula (Yakovlev, 2011).

Saudi Arabia — Yakovlev & Saldaitis, 2011; Asir, Taif region, 1997 (Legrain, unpubl., as *A. asylas* Cramer, 1777);
Yemen — Yakovlev & Saldaitis, 2011; *M21 (1).

Bionomics: Unknown.

Subfamily Mehariinae Yakovlev, 2011

Meharia philbyi Bradley, 1952 (Pl. 144, Figs 9, 10)

Meharia philbyi Bradley, 1952, The Entomologist **85**: 241. L. t.: Saudi Arabia, Kashabiya

Note: Figured by Bradley (1952, fig. 1, male genitalia), Wiltshire (1982, fig. 2, adult), Yakovlev & Saldaitis (2008, pl., figs 19-21, adults).

Distribution: East Afro-Eremic. Endemic to the Arabian Peninsula (Yakovlev, 2011).

Saudi Arabia — Bradley, 1952; Wiltshire, 1982; 1990; Yakovlev, 2011;
Oman — Yakovlev, 2011;
Yemen — Hacker et al., 1999; Hacker et al., 2001; *12 (f.c.); *20 (1); *21 (occ.); Yakovlev & Saldaitis, 2008; Yakovlev, 2011.

Bionomics: Unknown.

Meharia acuta Wiltshire, 1982 (Pl. 144, Figs 11, 12)

Meharia acuta Wiltshire, 1982, Fauna of Saudi Arabia **4**: 276, pl. 1, figs 3, 3a. L. t.: Saudi Arabia, Wadi Hanaka

Note: Figured by Wiltshire (1982, fig. 3, adult; fig. 3a, male genitalia), Yakovlev & Saldaitis (2008, pl., figs 10-12, adults), Borth *et al*., (2011, fig. 12, male genitalia).

Distribution: Endemic to the Arabian Peninsula (Yakovlev, 2011).

Saudi Arabia — Wiltshire, 1982; 1990; Yakovlev, 2011;
Oman — Yakovlev & Saldaitis, 2008; Yakovlev, 2011;
UAE — Yakovlev & Breithaupt, 2013;
Yemen — Hacker *et al*., 1999; Yakovlev & Saldaitis, 2008; Yakovlev, 2011; *56 (1); *41 (1).

Bionomics: Unknown.

Meharia hackeri Saldaitis, Ivinskis & Yakovlev, 2011 (Pl. 144, Fig. 13)

Meharia hackeri Saldaitis, Ivinskis & Yakovlev, 2011, ZooKeys **122**: 53, pl., figs 9, 10. L. t.: Yemen, NE Socotra Island, Wadi Difarroha, North side

Note: Figured by Borth *et al*., (2011, pl., figs 9, 10, adults; fig. 14, female genitalia).

Distribution: Endemic to Socotra (Yakovlev, 2011).

Socotra Borth *et al*., 2011.

Bionomics: Unknown.

Meharia yakovlevi Saldaitis &Ivinskis, 2010 (Pl. 144, Fig. 14)
Meharia yakovlevi Saldaitis &Ivinskis, 2010, Esperiana **15**: 379, pl. 56, figs 1, 2. L. t.: Yemen, Socotra Island, hills near Hadibu

Note: Figured by Saldaitis &Ivinskis (2010, pl. 56, figs 1, 2, adult; fig. 3, male genitalia).

Distribution: Endemic to Socotra (Saldaitis &Ivinskis, 2010; Yakovlev, 2011).

Socotra Saldaitis &Ivinskis, 2010; Borth *et al*., 2011.

Bionomics: Unknown.

Meharia semilactea (Warren & Rothschild, 1905) (Pl. 144, Figs 15, 16)
Alavona semilactea Warren & Rothschild, 1905, Novitates Zoologicae **12**: 32, pl. 4, fig. 12. L. t.: NW Sudan, Nakheila, R. Atbara

Note: Figured by Wiltshire (1982, fig. 1, adult), de Freina & Witt (1990 pl. 6, figs 7-12, adults; text fig. 4, venation; text fig. 28 male genitalia), de Freina (2013, fig. 43, adult), Yakovlev & Saldaitis (2008, pl., figs 16, 17, adults), Saldaitis & Ivinskis (2010, fig. 4, male genitalia). *M. semilactea* and *M. incurvariella* Chrétien, 1915 are distinct species as stated by Rungs (1979) and Yakovlev (2011). They occur sympatrically in parts of North Africa, but *M. incurvariella* is absent from the Arabian Peninsula (cf. Wiltshire, 1982; 1990).

Distribution: Saharo-Eremic. *M. semilactea* occurs throughout North Africa, from Mauritania/Morocco in the west to Egypt/N Sudan in the east, the Levante and the Arabian Peninsula.

Saudi Arabia	Wiltshire, 1980a; 1982; 1990; Yakovlev, 2011;
Oman	Wiltshire, 1985; Yakovlev, 2011; de Freina, 2013;
UAE	Legrain & Wiltshire, 1998; Yakovlev, 2011; Yakovlev & Breithaupt, 2013;
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001 (*7 (1); *16 (1); *17 (occ.); *24 (1); Yakovlev, 2011;
North Africa	Warren & Rothschild, 1905 (Sudan); de Freina & Witt, 1990 (from Morocco through the Maghreb countries to Egypt); Yakovlev, 2011 (Morocco; Mauritania; N Sudan); Rungs, 1979;
Levante	Yakovlev & Saldaitis, 2008 (Sinai); Yakovlev, 2010; 2011 (Israel, Jordan).

Bionomics: Unknown. The species inhabits deserts and semideserts.

Meharia breithaupti Yakovlev, 2014 (Pl. 144, Fig. 17)
Meharia breithaupti Yakovlev, 2014, Zootaxa **3895**: 401, figs 3, 18-19, 43-48. L. t.: UAE, Ras Al Khaimah, Esfai garbage dump

Note: Figured by Yakovlev (2014, fig. 3, distribution; figs 18-19, 43-46, adults; figs 47, 48, male and female genitalia).

Distribution: Endemic to UAE, probably Omano-Makranian.

UAE Yakovlev, 2014.

Bionomics: Unknown.

Family Metarbelidae Strand, 1909

Metarbela taifensis Wiltshire, 1988 (Pl. 144, Fig. 18)
Metarbela taifensis Wiltshire, 1988, Fauna of Saudi Arabia **9**: 71, figs 1, 28. L. t.: Saudi Arabia, Taif

Note: Figured by Wiltshire (1988, fig. 28, adult, fig. 1, male genitalia).

Distribution: Endemic to the Arabian Peninsula, only found there in Makkah Province in the high mountains.

Saudi Arabia Wiltshire, 1988b; 1990.

Bionomics: Unknown.

Salagena guichardi WILTSHIRE, 1980 (Pl. 145, Figs 1, 2, 5, 6)
Salagena guichardi WILTSHIRE, 1980b, Journal of Oman Studies, Special Report **2**: 190, pl. figs 2, 3. L. t.: Oman, Dhofar Prov., Ayun pools

Note: Figured by WILTSHIRE (1980b, pl. figs 2, 3, adults). Male genitalia Pl. 2, Fig. b.

Distribution: Endemic to the Arabian Peninsula.

Saudi Arabia	WILTSHIRE, 1980b; 1986; 1990;
Oman	WILTSHIRE, 1980b; de FREINA, 2013; "Wadi Dawkah, 664m, 3.xi.2013 (leg. S. LEWANDOWSKI)" (coll. S. LEWANDOWSKI);
UAE	LEGRAIN & WILTSHIRE, 1998;
Yemen	HACKER *et al*., 2001; *40 (1); *63 (12); *65 (2) (gen.prep. H. HACKER 22774♂); *66 (16).

Bionomics: Unknown.

Salagena arcyrosoma HACKER **spec. nov.** (Pl. 145, Figs 3, 4)

Material

Holotype: ♂, Yemen, Prov. Hadramaut, 14°47'26''N, 49°15'10''E, 25 km nne Al Mukalla, Al Ain, 20 km nnw Ar Rayyan, 100m, 1.v.1998 (gen.prep. H. HACKER 12462♂) (leg. A. BISCHOF, J. BITTERMANN, M. FIBIGER, H. HACKER, H. PEKS & H-P. SCHREIER)" (ex coll. H. HACKER, ZSM).

Paratypes: 1 ♂, Yemen, Prov. Hadramaut, 14°47'26''N, 49°15'10''E, 25 km nne Al Mukalla, Al Ain, 20 km nnw Ar Rayyan, 100m, 1.v.1998 (leg. A. BISCHOF, J. BITTERMANN, M. FIBIGER, H. HACKER, H. PEKS & H-P. SCHREIER)" (ex coll. H. HACKER, ZSM).

Locus typicus: Yemen, Prov. Hadramaut, 25 km nne Al Mukalla, Al Ain, 20 km nnw Ar Rayyan, 100m.

Derivatio nominis: The name of the species is derived from the Greek *arcy = net, network* and *soma(t) = body*, indicative for the typical pattern on the upperside of all wings.

Description: Similar in general facies to the preceding species *S. guichardi* with which it was first misidentified, but clearly different in the features of the male genitalia. The discription of *S. guichardi* made by E. P. WILTSHIRE applies very well also for this species, but the hindwings are darker grey-brown throughout with a net-like pattern covering the whole upperside. The diffuse ivory-whitish spots of the forewing upperside are larger, and the basal field is brighter. The net-like pattern of the upperside is also evident on the underside of all wings.

Wingspan of the holotype 23 mm, of the paratype 25.5 mm. Antennae of male doubly bipectinate to the tip, branches slightly longer than those of the preceding *S. guichardi*. Labial palps minute.

WILTSHIRE compares *S. guichardi* with the East African *Selagena eustrigata* HAMPSON, 1916 (Pl. 145, Figs 7, 8), described from Mandera (Somalia), but this species has pure white hindwings. Another similar species, *Metarbela perstriata*, described by HAMPSON in the same paper from the same locality, has a darker and somewhat analogous coloration, but only a trace of net-like pattern on the hindwings and much darker, monochrome forewings which lack the typical pale spots of the species described here.

Male genitalia (Pl. 2, Fig. a): Similar to those of *S. guichardi,* previously unpublished; the following differences are specific:
- valve broader throughout, posterior part with triangular, not rectangular tip
- sacculus broader, longer and more strongly sclerotised than in *S. guichardi*, posterior end not pointed as in that species, but much larger and in shape rather like a bird-head with beak.

Female genitalia: Unknown.

Distribution At present, *S.arcyrosoma* is known only from the localities in the Yemeni Province Hadramaut, close to the Indian Ocean. The habitat is a stony semidesert with *Acacia*, a few shrubs and very scant low vegetation.

Superfamily Zygaenoidea LATREILLE, 1809
Family Limacodidae DUPONCHEL, 1845

Coenobasis farouki WILTSHIRE, 1947 (Pl. 145, Figs. 10, 11)
Coenobasis farouki WILTSHIRE, 1947a, Bulletin de la Société Fouad I. d'Entomologie **31**: 2, fig. 1. L. t.: [Egypt] Sinai, Jebel Katherina

Note: Figured by Wiltshire (1990, fig. 19, adult). Male genitalia Pl. 2, Fig.d; male genitalia of the East African *Coenobasis chloronoton* (Hampson, 1916) cf. Pl. 2, Fig. F - holotype illustrated on Pl. 145, Fig. 12.

Distribution: East Afro-Eremic. Endemic to the Arabian Peninsula.

Saudi Arabia	Wiltshire, 1980a; 1990; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Asir, 1992-98 (Legrain, unpubl.);
Oman	Wiltshire, 1990;
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001; *7 (2); *13 (occ.); *14 (occ.); *25 (occ.); M12; *34 (f.c.) (gen.prep. H. Hacker 22648♂); *36 (ab.); *40 (f.c.); *42 (1); *48 (f.c.); *54 (occ.);
Levante	Wiltshire, 1947a, 1949b (Sinai).

Bionomics: Unknown.

Deltoptera omana Wiltshire, 1976 (Pl. 145, Fig. 9)

Deltoptera omana Wiltshire, 1976, Zeitschrift der Arbeitsgemeinschaft Oesterreichischer Entomologen **27**: 81, fig. 6. L. t.: N Oman, Wadi Sahtan

Note: Figured by Wiltshire (1980b, fig. 6, genitalia; 1990, fig. 458), de Freina (2013, fig. 65, adult). Male genitalia Pl. 2, Fig. g.

Distribution: East Afro-Eremic. Endemic to the Arabian Peninsula.

Oman	Wiltshire, 1976; 1977b; 1990; de Freina, 2013; 1 ♂, "Prov. Al Dakhillijah, Birkat Al Sharaf, 30.vii.2010, 1810m, N 23°10'10", E 57°25'82" (gen.prep. H. Hacker 22890♂) (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie).

Parasa fulvicorpus Hampson, 1896 (Pl. 145, Fig. 13)

Parasa Fulvi-corpus Hampson, 1896, in: Walshingham, M. A. & G. F. Hampson, Proceedings of the Zoological Society of London 1896: 276, pl. 10, fig. 12. L. t.: [Yemen] Aden

Note: Figured by Hampson (1896, pl. 10, fig. 12, adult).

Distribution: East Afro-Eremic. Endemic to the Arabian Peninsula.

Yemen	Hampson, 1896.

Bionomics: Unknown.

Parasa dusii Solovyev & Saldaitis, 2010 (Pl. 145, Figs 14, 15)

Parasa dusii Solovyev & Saldaitis, 2010, Journal of Insect Science 10 (art. 190): 2, figs 1-5. L. t.: N Yemen, Al Hudaydah prov., Wadi Bura

Note: Figured by Solovyev & Saldaitis (2010, figs 1-3, adults; figs 4, 5, male genitalia). Male genitalia Pl. 2, Fig. e.

Distribution: East Afro-Eremic. Endemic to Yemen.

Yemen	Hacker *et al*., 2001; *14 (1); *36 (3); *48 (occ.); *58 (gen.prep. H. Hacker 22650♂); *65 (occ.); *66 (sc.); *67 (occ.); *68 (sc.); *70 (occ.) [as *Latoia* sp. close to *thamia* (Rungs, 1951)]; Solovyev & Saldaitis, 2010.

Bionomics: *P. dusii* inhabits subtropical rainforests and shrubland with trees. Early stages and foodplants are unknown.

Family Zygaenidae Latreille, 1809

Reissita simonyi (Rebel, 1899) (Pl. 145, Fig. 16)

Zygaena Simonyi Rebel, 1899, Anzeiger der kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe **37**: 360. L. t.: [Yemen] Râs Fártak (Arab. m.)

Reissita simonyi yemenicola Tremewan, 1959

Reissita simonyi yemenicola Tremewan, 1959, The Entomologist **93:** 213. L. T.: Yemen

Note: Figured by Naumann & Edelmann (1984, figs. 11-21, adults, 29-33, genitalia; figs 34-61, early stages).

Distribution: East Afro-Eremic. Endemic to the Arabian Peninsula. The nominotypical subspecies with bluish sheen and red spots occurs in Oman and eastern Yemen, subspecies *yemenicola* Tr. (blackish with

a greenish-blue sheen and red spots, or all red) is known from western Yemen and the adjacent part of the Asir Mountains of Saudi Arabia.

Saudi Arabia Wiltshire, 1982; 1990; Naumann & Edelmann, 1984;
Oman Wiltshire, 1980b; 1990; Naumann & Edelmann, 1984; de Freina, 2013; several ♀, "Prov. Dhofar, östl. Sarfayt631m, N 16°41'33.3" E 53°09'45.4", 6.-14.iii.2013 (leg. Schellhorn)" (coll. Schellhorn); "Jebel al Qamar, 2000m, 5.xi.2013 (leg. S. Lewandowski)" (coll. S. Lewandowski);
Yemen Rebel, 1899; Tremewan, 1959; Wiltshire, 1990; Naumann & Edelmann, 1984; Hacker *et al*., 2001; *54 (1).

Bionomics: Larva on *Maytenus senegalensis* and *M. somalensis* (Naumann & Edelmann, 1984), according to de Freina (2013) *Maytenus dhofariensis*.

Superfamily Thyridoidea Herrich-Schäffer, 1846
Family Thyrididae Herrich-Schäffer, 1846

Dysodia magnifica Whalley, 1968 (Pl. 145, Fig. 17)

Dysodia magnifica Whalley, 1968, Annals of the Transvaal Museum **26**: 13. L. t.: Uganda

Note: Figured by Whalley (1971, pl. 5, fig. 15, adult, pl. 50, figs 285, 286, female genitalia).

Distribution: Afrotropical-subtropical (Subsaharan) (Subsaharan). *D. magnifica* is widespread in East Africa.

Yemen Hacker, Fibiger & Legrain, 2002; *40 (1).

Superfamily Hyblaeoidea Hampson, 1903
Family Hyblaeidae Hampson, 1903

Hyblaea fontainei Berio,1967 (Pl. 145, Fig. 18)

Hyblaea fontainei Berio,1967, Doriana, Supplemento agli Annali del Museo Civico di Storia Naturale Giacomo Doria **4** (182): 5, figs 2, 10. L. t: Congo, Sankuru, Katako Kombe

Note: Figured by Berio (1967, fig. 10, adult; fig. 2, male genitalia), Hacker *et al*., (2001, fig. 1, adult). The male genitalia of the SE Asian species popularly known and identified as 'Teak defoliator', *Hyblaea puera* (Cramer,1777), were figured by Koning & Roepke (1949, fig. 6) and by Berio (1967, fig. 1). They correspond with those of the specimen from Thailand given here under pl. 2 g. Male genitalia Pl. 2, Figs h, i.

According to Hacker & Fibiger (2006), the present Yemeni specimens are signifiantly smaller than *'H. puera'* specimens from India or Thailand. The features of the male genitalia are close, but do not really match and correlate in the specific details as shown by Berio (1967, figs. 1, 2). According to Shaffer & Nielsen (1996), *H. puera* is a species-complex, which needs a full revision (cf. also de Freina & Buchsbaum, 2012).

Material of *H. fontainei* checked for comparison:

Ethiopia 5 ♂♂, "Prov. Gemogofa, 10.5 km W Weyto, 850m, 10.v.2008, 05°26'06"N, 36°55'33"E (leg. H. Hacker & H.-P. Schreier)" (coll. H. Hacker, ZSM);
Congo 1 ♂, "Lulua, Kapanga, xii 1933 (gen.prep. E. Berio 3855♀) (leg. G. F. Overlaet)" (MCSN).

Distribution: *H. puera* is currently regarded as having a worldwide Tropical-Subtropical distribution. It was first reported by Hampson (1896) for the fauna of Yemen, but that report might refer to the species treated here as *H. fontainei*. Afrotropical-subtropical (Subsaharan).

Yemen Hampson, 1896; Hacker et al., 2001; Hacker & Fibiger, 2006; *59 (6); *60 (2) (gen.prep. H. Hacker 11942♀); *36 (f.c.).

Bionomics: Unknown.

[***Hyblaea puera*** (Cramer,1777)]

Phalaena puera, Cramer,1777, De Uitlandsche Kapellen voorkomende in de waereld - deelen Asia, Africa en America **2**: 10, pl. 103, pl. 103, figs D, E. L. t.: Surinam
= *Noctua saga* Fabricius, 1787, Mantissa Insectorum sistens Species Nupes Detectas Synonymis, Observationibus, Descriptionibus, Emendationibus 2: 137. L. t.: [India] Coromandel

Note: See under the preceding species; *H. puera* is certainly not present on the Arabian Peninsula.

Superfamily Lasiocampoidea Harris, 1841
Family Lasiocampidae Harris, 1841
Subfamily Chondrosteginae

Chondrostega fasciana Staudinger, 1892 (Pl. 146, Fig. 1)
Chondrostega fasciana Staudinger, 1892, Deutsche Entomologische Zeitschrift Iris, Dresden **4**: 258. L. t.: [Israel] bei Jerusalem

Chondrostega fasciana feisali Wiltshire, 1941
Chondrostega fasciana feisali Wiltshire, 1941, Journal of the Bombay Natural History Society **42**: 833. L. t.: [Iraq] Mesopotamian desert: Baiji; Haditha; Qaraghan; Ahwaz

Chondrostega fasciana nigrifusa Wiltshire, 1990
Chondrostega aurivillii nigrifusa Wiltshire, 1990, Fauna of Saudi Arabia **11**: 103, fig. 454. L. t.: Saudi Arabia, Al Shir

Note: Figured by Wiltshire (1952, fig. 1 a, valva of the male genitalia; 1957, pl. 4, figs 16, 17, adults; 1990, figs 22, 454, 456b, adults). For taxonomy cf. also under *C. subfasciata* below.

Distribution: Omano-Makranian. *C. fasciana* is known from the Arabian Peninsula, Iran and Iraq.

Saudi Arabia	Wiltshire, 1941; 1957; 1980a; 1990;
Levante	Staudinger, 1892 (Israel/Jordan; Palestine);
Iraq	Wiltshire, 1957;
Iran	Zolotuhin & Zahiri 2008.

Bionomics: Univoltine, autumnal, emerging after a long pupal diapause deep underground. The larvae are bright hairy and feed after spring rains polyphagously on low vegetation. Details of the early stages were described by Wiltshire (1946; 1957). Most females of the subfamily Chondrosteginae are wingless (Wiltshire, 1990).

Chondrostega brunneicornis Wiltshire,1944 (Pl. 146, Fig. 2)
Chondrostega subfasciata brunneicornis Wiltshire,1944, Entomologist´s Record and Journal of Variation **56**: 97. L. t.: Kuwait, Hamatiyat

Note: Figured by Wiltshire (1949, figs 7, male genitalia; 1990, figs 455, 456a, adults). Rare species, collected only by some few specimens.

Distribution: Irano-Turanian. *C. brunneicornis* is known only from Kuwait and NE Saudi Arabia, not far from Kuwait.

Saudi Arabia	Wiltshire, 1944; 1949a; 1980a; 1990.

Bionomics: Bionomics largely unknown. Cocoon figured by Walker & Pittaway (1987: 67).

Chondrostega subfasciata (Klug, 1830) (Pl. 146, Figs 3-12)
Gastropacha subfasciata Klug, 1830, Symbolae Physicae, seu Icones Descriptiones Insectorumquae ex itinere per Africam borealem et Asiam occidentalem F.G. Hemprich et C.H. Ehrenberg studio novae aut illustratae redierunt. Insecta: pl. 20, fig. 3. L. t.: Egypt

Note: The possible conspecificity of *Chondrostega subfasciata* and *C. longespinata* Aurivillius, 1902 (described from Egypt) was discussed by Andres & Seitz (1923-1924) and Wiltshire (1948a). Amsel (1933) listed seven *Chondrostega* Lederer, 1858 taxa in species rank for the fauna of Palestine:
- *palaestrana* Staudinger, 1891 described from Syria/Palestine, also on Cyprus (Fischer & Lewandowski, 2003);
- *pauli* Gaede, 1932, described from [Israel] Jerusalem; according to Wiltshire (1957) also ranging in Iraq;
- *gotschmanni* Stertz, 1915, described from [Palestine] Jericho;
- *pastrana* Lederer, 1858 described from Syria and with a wide range in Near East from Turkey to the Levante (de Freina, 1999);
- *fasciana* Staudinger, 1891, described from [Israel/Jordan] Palästina);
- *aurivillii* Püngeler, 1902, described from [Israel] Jerusalem;
- *intracta* Gaede, 1932, described from [Israel/Jordan] Jordantal.

De Freina & Witt (1987) emphasize that all these taxa, together with *C. longespinata*, might be synonymised *C. subfasciata*.

Distribution: Saharo-Eremic. The range of *C. subfasciata* extends across the eremic North African region from Morocco to Egypt and the Sudan (de Freina & Witt, 1987). Subsequently reported from Iraq, Asia Minor and the Levante under various taxa; hence their true identity must be uncertain.

North Africa	Wiltshire, 1948a;
Levante	Lederer, 1858 (Syria) ; Amsel, 1933; de Freina & Witt, 1987; de Freina, 1999; Fischer & Lewandowski, 2003 (Cyprus);
Iraq	Wiltshire, 1957;
Asia Minor	de Freina, 1999.

Bionomics: Larvae on Compositae (Asteraceae) such as *Chrysanthemum* or *Anthemis* (de Freina, 1999). Univoltine, autumnal, emerging after a long pupal diapause deep underground.

Subfamily Lasiocampinae Harris, 1841

Autosphyla henkei arabica Wiltshire, 1976 (Pl. 146, Figs 13-15)

Autosphyla henkei arabica Wiltshire, 1976, Zeitschrift der Arbeitsgemeinschaft Oesterreichischer Entomologen **27**: 74. L. t.: Trucial Oman; Saudi Arabia

Note: Figured by Wiltshire (1990, figs 16, 17, adults).

Distribution: Irano-Turanian. *A. henkei* ranges from the Arabian Peninsula in the south to Central Asia in the north.

Saudi Arabia	Wiltshire, 1976b; 1980a; 1990;
Oman	Wiltshire, 1976b; 1990;
UAE	Wiltshire, 1977b.

Bionomics: Larvae gregarious in webs on *Calligonum*; illustrated in Walker & Pittaway (1987) (Wiltshire, 1990).

Beralade obliquata (Klug, 1834) (Pl. 146, Fig. 16)

Gastropacha obliquata Klug, 1834, Symbolae Physicae, seu Icones Descriptiones Insectorumquae ex itinere per Africam borealem et Asiam occidentalem F.G. Hemprich et C.H. Ehrenberg studio novae aut illustratae redierunt. Insecta, pl. 20, fig. 2. L. t.:[Sudan] Haute-Ègypte

Note: Figured by Wiltshire (1948a, fig 61, 62, adults, Egypt); Lajonquière, (1977, pl. 2, fig. D1, pl. 2, fig. D2, holotype; figs 25, 26, male and female genitalia), de Freina & Witt (1987, pl. 28, figs 1-5, adults; fig. 350, male genitalia). Wiltshire (1948a) designated a “Ne-allo-Type“ of the species from [Egypt] Katia, NW Sinai and described the early stages.
Male genitalia, including those of some related species, cf. Pl. 3 (according to Lajonquière, 1977).

Distribution: Saharo-Eremic. The range of *B. obliquata* extends from Morocco to Egypt and Sudan.

North Africa	Klug,1834 (Sudan); Andres & Seitz, 1925 (Egypt); Wiltshire, 1948a (Egypt); LajonquiÈre,, 1977 (Morocco; Algeria; Tunisia; Sudan); de Freina & Witt, 1987 (NE Africa, Morocco to Egypt and Sudan);
Levante	Lehmann & Saldaitis, 2006 (Sinai).

Bionomics: Habitats are *Acacia* bush vegetation along wadis. Larvae on *Acacia raddiana*, *Lygros* spp., *Helianthemum* (de Freina & Witt 1987). According to Wiltshire (1948a) foodplant is *Raetama raetam*.

Beralade gibbonsi (Wiltshire, 1947) (Pl. 146, Figs. 17, 18; Pl. 147, Fig. 1)

Lambessa gibbonsi Wiltshire, 1947, Bulletin de la Société Fouad I. d‘Entomologie **31**: Saudi Arabia, Taif, Bijaz
= *Beralade gibbonsi* ab. *grisescens* Wiltshire, 1961, Journal of the Bombay Natural History Society **58**: 609, pl. 1, fig. 4. L. t.: Saudi Arabia, Hayir [infrasubspecific]

Note: Figured by Lajonquière, (1977, pl. 2, fig. D3, adult; figs 17, 17a, male genitalia), Wiltshire (1980, figs 1, 2, adult; 1990, fig. 457, adult). Male genitalia Pl. 4, Figs A, d.

Distribution: East Afro-Eremic. Endemic to the Arabian Peninsula.

Saudi Arabia	Wiltshire, 1947b; 1961a; 1980a; 1990; Lajonquière, 1977; Kiriakoff, 1960; Hejaz, 1997 (Legrain, unpubl.); Asir,1992-98 (Legrain, unpubl.);
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001 (*13 (sc.) (gen.prep. H. Hacker 22760♂); *14 (1); *31 (ab.); *34 (sc.); *40 (f.c.) (gen.prep. H. Hacker 22641♂); *48 (f.c.); *51 (f.c.) (gen.prep. H. Hacker 22742♂); *53 (1); *64 (1); *65 (sc.) (gen.prep. H. Hacker 22625♂); *66 (sc.); *66 (1); *68 (3); *69 (1); *70 (1); M4; M12; M13).

Bionomics: Bivoltine, from February to April and September to November.

Chilena laristana Daniel, 1949 (Pl. 147, Figs 2-4)

Chilena laristana Daniel, 1949, Mitteilungen der Münchner Entomologischen Gesellschaft **35-39**: 236, pl. 8, fig. 2. L. t.: Iran, Laristan, Straße Bender-Abbas-Sardabad, Sardze Umgebung, ca 2000m

Note: Figured by Daniel (1949, pl. 8, fig. 2, adult), Lajonquière, (1977, fig. 51, male genitalia), Wiltshire (1990, fig. 24, adult). Male genitalia Pl. 4, Fig. e.

Distribution: Omano-Makranian. *C. laristana* occurs on Arabian Peninsula and in S Iran.

Saudi Arabia	Wiltshire, 1980a; 1990; Al-Houty, 2000 (Kuwait);
Oman	Wiltshire, 1977b; 1990; 1 ♂, "Prov. Batinah, Al Awabi vic., Wadi Bani Awf, 19.-20.xii.2009, 430m, N 23°20'01", E 57°29'23.5" (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie); 1 ♂, 1 ♀, "N-Oman, 20 km S Hatta, Shuwayhah, 600m, 17.iv.1996 (leg. Legrain & Fastré)" (ZSM);
UAE	Wiltshire, 1990; Legrain & Wiltshire, 1998;
Iran	Daniel,1949; 1 ♂, "Prov. Hormuzgan, 45 km östlich Bander Jask, Jegin River, 7m, 11.xii.2007, N 25°46'49.3", E 58°13'11.2" (gen.prep. H. Hacker 22853♂) (leg. Lehmann, Stadie & Zahiri)" (coll. D. Stadie); 1 ♂, "Baloutchistan, Bender Tchabahar, 3.i.1938 (leg. Brandt)" (ZSM); 1 ♂, "Belutschistan, Jranshar, 800m, 1.-10.iv.1954 (leg. Richter & Schäuffele)" (ZSM).

Bionomics: Flying season February to March. Larva in April on *Calligonum*, illustrated by Walker & Pittaway (1987) (Wiltshire, 1990).

Sena proxima (Staudinger, 1895) (Pl. 147, Figs 5-6)

Chilena Proxima Staudinger, 1895, Deutsche Entomologische Zeitschrift Iris, Dresden **7**: 268, pl. 9, figs 7, 8. L. t.: [Turkey] Mardin

Note: Figured by Staudinger (1895, pl. 9, figs 7, 8, adults), Lajonquière (1977, pl. 4, fig. R2, R3, adults; figs. 30, 48, male and female genitalia).

Distribution: Irano-Turanian. *S. proxima* is known from SE Turkey, S Iraq and the adjacent parts of Iran.

Asia Minor	Staudinger, 1895;
Iraq	Wiltshire, 1940b; 1957; Lajonquière,, 1977; 1 ♂, 1 ♀, "Bagdad-Lw., Abu-Ghraib, 26.iv.1958, 11.vi.1958 (leg. Remane)" (ex coll. Schulte; ZSM);
Iran	Wiltshire, 1940b; 1957; Lajonquière, 1977; Zolotuhin & Zahiri 2008.

Bionomics: Larva on *Prosopis stephaniana*. Early stages described by Wiltshire (1940b).

Sena augustasi Zolotuhin, Saldaitis & Ivinskis, 2009 (Pl. 147, Figs 7-8)

Sena augustasi Zolotuhin, Saldaitis & Ivinskis, 2009, Acta Zoologica Lituanica **19** (3): 216, figs 1-3. L. t.: S. Oman, W of Salalah, Al Mughsayl env.

Note: Figured by Zolotuhin *et al*., (2009, figs 1a-c, adults; 2 a-c, male and female genitalia; fig. 3, biotope).

Distribution: East Afro-Eremic. Endemic to Oman, Dhofar region.

Oman	Zolotuhin *et al*., 2009; 2 ♂♂, 1 ♀, "Prov. Dhofar, 20km W of Al Mugsahyl, Wadi Afawl, 90m, 02./07.viii.2010, N 16°51'99", E 53°49'09" (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie).

Bionomics: *S. augustasi* was collected in a dry river valley in lowlands rich in grass. The specimens were collected at light in an altitude of 50–640 m. Nothing is known about the host plants and pre-imaginal instars (Zolotuhin *et al*., 2009).

Sena zolotuhini Hacker **spec. nov.** (Pl. 147, Figs 9-11)

Material

Holotype: ♂, "Yemen, Prov. Ibb, 13°53'N, 43°58'E, Lower Wadi Duur, village Azuhriya, 1350m, 12.III.2000 (gen.prep. H. Hacker 22757♂) (leg. F. Aulombard, M. Fibiger, H. Hacker & H-P. Schreier)" (coll. H. Hacker, ZSM.

Paratypes: Yemen 1 ♂, M*2 (gen.prep. H. Hacker 22630♂); 1 ♀, *31; 1 ♀, *34; 5 ♂♂, *35; 3 ♂♂, *36;1 ♂, 2 ♀♀, *40; 7 ♂♂, 2 ♀♀, *48; 1♂, *51; 3 ♂♂, 1 ♀, *53;2 ♂♂, *54;4 ♂♂, *63; 4 ♂♂, *64; 1 ♂, 1 ♀, *65;9 ♂♂, *66;1 ♀, *67;2 ♂♂, *68;2 ♂♂, *69 (gen.prep. H. Hacker 22757♂);4 ♂♂, *70;M25;M2 (coll. H. Hacker, ZSM; H.-P. Schreier,

A. Bischof, M. Fibiger/UZM);

Locus typicus: Yemen, Prov. Ibb, Lower Wadi Duur, village Azuhriya, 1350m.

Derivatio nominis: The species is dedicated to Dr. Vadim V. Zolotuhin, well-known specialist on Lasiocampidae and Bombycidae.

Note: The male genitalia of comparable *Sena* Walker, 1855 and *Ergolea* Dumont, 1922 species have been figured as follows:

- *S. augustasi* Zolotuhin, Saldaitis & Ivinskis, 2009, described from Oman (W of Salalah) (cf. above);
- *S. breyeri* (Aurivillius,1922), described from [RSA] Transvaal: Lajonquiére, (1977, figs 39, 39a, male genitalia);
- *S. cuneata* (Brandt, 1938), described from SE Iran (Fars, Fort Mian-Kotal, Dalaki Brücke): Lajonquiére, (1977, figs 35, 35a, male genitalia);
- *S. mendax* (Berio, 1939), described from Eritrea, Elaberet: Lajonquiére, (1977, pl. 5, fig. X3, adult; fig. 43, male genitalia); figured by Wiltshire (1990, fig. 23, male genitalia);
- *S. proxima* (Staudinger, 1895), described from [Turkey] Mardin: LajonquiÈre (1977, pl. 4, figs R2, R3; figs. 30, 48, male and female genitalia);
- *S. punctulata* (Aurivillius, 1914), described from N Nigeria: Miuna: Lajonquiére, (1977, pl. 3, M2, adult; fig. 37, male genitalia);
- *S. strigifascia* (Hampson, 1909), described from Uganda: Ruwenzori: Lajonquiére, (1977, pl. 3, K3, adult, figs 38, 38a, male genitalia)
- *S. cardinalli* (Tams, 1931), described from Ghana: Lajonquiére, (1977, pl. 3, fig. J1; fig. 40, male genitalia)
- *S. donaldsoni* (Holland & Smith, 1901), described from Tanzania, Mkalama: Lajonquiére, (1977, pl. 4, figs Q1, Q2, Q3 adults; figs. 40,41, male genitalia)
- *S. levenna* (Wallengren, 1876), described from South Africa, Transvaal, Natal: Lajonquiére, (1977, pl. 3, M3, adult; fig. 42, male genitalia)
- *E. reneae* Dumont, 1922 and *E. geyri* (Rothschild, 1916): Lajonquiére, (1977, figs 56, 56a and 57), de Freina & Witt (1987, pl. 28, figs 8-10, adults; figs 3554, 358, male genitalia; fig, 356, female genitalia).

All report of *Sena breyeri* (Aurivillius,1922) (Annals of the Transvaal Museum **9**: 139. L. t.: [RSA] Transvaal) by Wiltshire (1986, 1990) and Hacker *et al*., (1999; 2001) refer to the species described here.

Description: Wingspan of the holotype 30.5 mm, of the paratypes (males) 27 to 31 mm, (females) 33 to 39.5 mm. Antennae of both sexes bipectinate, those of the males much more strongly than those of the females. In general, facies similar to the preceding species *S. augustasi*, but different in the following specific respects:

- antenna of female with distinctly shorter pectination
- ground colour of the upperside of all wings paler, slightly brownish tinged; markings prominently contrasting. *S. augustasi* is more monochrome ash grey with faintly contrasting crosslines
- hindwings of both sexes paler, especially those of the males, postmedian fascia distinct brown-grey, intensified and widened towards the anal angle
- distal half of the median field of the forewing towards the postmedian fascia and subterminal field strongly brightened, pale grey to nearly white
- postmedian fascia distinct, dark brown-grey, intensified along the veins, hence giving a slightly serrate impression.

Male genitalia (Pl. 4, Figs b, c): Typical for the species group, different from those of *S. augustasi* in the following ways:
- lower lobes of valvae less swollen but flatter and more elongated; distal thorn longer and wider
- posterior lobes of the valvae longer, stronger, not S-curved but slightly curved throughout.

Distribution: East Afro-Eremic. Endemic to SW Arabia.
The specimen figured by Wiltshire (1990, fig. 23) from Asir Mountains of Saudi Arabia (Al Foqa, *Olea dodonea* zone.) (pl. 5, fig. 12) is more likely to be *S. zolotuhini* than *S. augustasi*.

Sena oberthuri nazmii Lajonquiére, 1977

Sena oberthuri nazmii Lajonquiére, 1977, Annales de la Société Entomologique de France (n. s.) **13**: 273, pl. III, fig. M4. L. t.: Égypte, Sinai, Romani, 50 km NE Port Said

Note: Figured by Lajonquière (1977, pl. 3, figs O2, O3, P2, adults; figs 28, 45, male and female genitalia),

de Freina & Witt (1987, pl. 28, figs 6, 7, adults; figs 352, 363, male and female genitalia), Speidel & Hassler (1989, pl. 4, figs 18, 22, adults).

Distribution: Saharo-Eremic. *S.oberthuri* is known from the northern Sahara region from Mauritania to Egypt and Sinai.

North Africa: Lajonquiére, 1977; de Freina & Witt, 1987 (Sahara region from Mauritania to Egypt);
Levante: Lajonquiére, 1977 (Sinai); de Freina & Witt, 1987 (Sinai);

Bionomics: Larva on *Calligonum comosum* (de Freina & Witt, 1987).

Lasiocampa terreni (Herrich-Schäffer, 1847)

Bombyx terreni Herrich-Schäffer, 1847, Systematische Bearbeitung der Schmetterlinge von Europa, zugleich als Text, Revision und Supplement zu Jakob Hübner´s Sammlung Europäischer Schmetterlinge 1847: 14. L. t. (neotype): Turkey, Hatay, 20 km E Iskenderun

Note: For taxonomy cf. Lewandowski (2001), Lewandowski & Fischer (2005; 2012). Figured by Lewandowski (2001, figs 7, 8, adults; figs 2-6 early stages; fig. 1, male genitalia), Lewandowski & Fischer (2002, fig. 1, adult; 2005, figs 1-3 - designation of a neotype/ZSM), Lewandowski & Fischer (2005, fig. 23, male genitalia). Larva also figured by de Freina & Piatkowski (2006, fig. 26). The species belongs to the *Lasiocampa trifolii* ([Denis & Schiffermüller], 1775) species group.

Distribution: Mediterranean. *L. terreni* occurs in Turkey, Cyprus, Levante, Iraq, Saudi Arabia (Duba) and Egypt (Marsá'Alam at the Red Sea coast) (Lewandowski & Fischer, 2002).

Saudi Arabia Lewandowski & Fischer, 2005 (Duba);
North Africa Lewandowski & Fischer, 2005 (Egypt: Marsá'Alam at the Red Sea coast);
Levante Lewandowski & Fischer, 2005; 2012 (Syria; Lebanon; Israel; Jordan; Cyprus);
Asia Minor Lewandowski & Fischer, 2005; 2012 (Turkey);
Iraq Lewandowski & Fischer, 2005; 2012.

Bionomics: Larva figured by Lewandowski & Fischer (2012, fig. 10).

Lasiocampa grandis (Rogenhofer, 1891) (Pl. 147, Figs 13, 14)

Gastropacha trifolii var. *grandis* Rogenhofer, 1891, Verhandlungen der Zoologisch-Botanischen Gesellschaft Wien **41** (Sitzungsberichte): 86. L. t.: Syrien
= *Bombyx Salomonis* ab. *Sapiens* Staudinger, 1982, Deutsche Entomologische Zeitschrift Iris, Dresden **4**: 259. L. t.: [Israel] Jerusamem

Distribution: East Mediterranean. The range of *L. grandis* extends from Egypt (Nile delta) and the Levante, southernmost to the Taif region in the Asir Mountains, easternmost to N Iraq and SW Iran, northernmost to SE Turkey (Wiltshire (1948a; 1957), Witt (1982).

Saudi Arabia Hejaz, 1997 (Legrain, unpubl.); Asir, Taif region, 1997 (Legrain, unpubl.);
North Africa Andres & Seitz, 1925 (Egypt); Wiltshire, 1948a (Egypt);
Levante Rogenhofer, 1891; Staudinger, 1982 (Lebanon; Israel) ; Amsel, 1933; Wiltshire, 1948a (Lebanon); Witt, 1982;
Asia Minor de Freina, 1999; Witt, 1982;
Iraq Wiltshire, 1957; Witt, 1982;
Iran Wiltshire, 1948a;Witt, 1982; Zolotuhin & Zahiri 2008.

Bionomics: Larva polyphagous. Moth emerging after a pupal diapause, in ix, x. Larva figured by Lewandowski & Fischer (2012, fig. 13-15).

Lasiocampa puengeleri puengeleri (Stertz, 1915) (Pl. 147, Fig. 18)

Lasiocampa püngeleri Stertz, 1915, Deutsche Entomologische Zeitschrift Iris, Dresden **29**: 125. L. t.: [Israel] Jerusalem; Palestine

Note: Figured by Wilshire (1948a, pl. 1, fig. 3, adult), Lewandowski & Fischer (2008, figs 8, 9, 18-24; 2012, figs 19, 21), close *L. decolorata* (Klug, 1832) (Pl. 147, Figs 16, 17). For the name of the species and the "Umlaut sign" ü cf. ICZN (2000, § 32.5.2). Figured by Lewandowski & Fischer (2008, figs 8, 9, adults; fig. 26, male genitalia).

Distribution: East Mediterranean. *L. puengeleri* is known from Egypt and the Levante.

Saudi Arabia	Lewandowski & Fischer, 2008 (Egypt);
North Africa	Wiltshire, 1948a (Egypt); Lewandowski & Fischer, 2008 (Egypt, down to the border with Sudan);
Levante	Amsel, 1933; Wiltshire, 1948a (Palestine); Lewandowski & Fischer, 2008 (Palestine; Israel; Jordan; Sinai).

Bionomics: Larva described and figured by Lewandowski & Fischer (2008, figs 18-24). Foodplants *Helianthemum* spp.

Lasiocampa puengeleri rubrescens (Wiltshire, 1986) (Pl. 147, Fig. 15)

Lambessa decolorata rubrescens Wiltshire, 1986, Fauna of Saudi Arabia **8**: 268. L. t.: Saudi Arabia, Wadi Shija, Reyadh distr.

Note: *L. decolorata* Klug, 1832, described from the vicinity of Alexandria [Egypt], has been figured by Wiltshire (1948a, pl. 1, figs 4, 5, adults (Sinai); 1990, fig. 26, adult), de Freina & Witt (1987, pl. 29, figs 9-13, adults), Lewandowski & Fischer (2011, fig. 20; 2012, fig. 20, adults). Figures of *L. puengeleri rubrescens* by Lewandowski & Fischer (2012, figs 22, 23, adults).

Distribution: Saharo-Eremic. According to de Freina & Witt (1987) restricted to the Arabian Peninsula and adjacent parts of the Levante, Egypt, Sudan and the Maghreb countries Algeria and Tunisia (Morocco with ?). Lewandowski & Fischer (2011) indicate that *L. decolorata* does not occur in the Levante and even perhaps not in Egypt, but seems to be restricted to the Magreb countries, while populations eastward, previously determined as *L. decolorata*, are in fact *L. puengeleri*.

Saudi Arabia	Wiltshire, 1980a, 1986, 1990; Hejaz, 1997 (Legrain, unpubl.); Asir, Taif region, 1997 (Legrain, unpubl.);
Yemen	Wiltshire, 1986, 1990; Hacker *et al*., 1999;
North Africa	Klug, 1832 (Egypt);
Levante	Amsel, 1933; Wiltshire, 1948a (Sinai); 1990 (Palestine).

Bionomics: Flight period October, November and February (Wiltshire, 1990). Larval foodplants are *Helianthemum*, *Zygophyllum album* and *Z. simplex* (de Freina & Witt, 1987).

Lasiocampa serrula davidis (Staudinger, 1895) (Pl. 148, Figs 1-5)

Bombyx Davidis Staudinger, 1895, Deutsche Entomologische Zeitschrift Iris, Dresden **7**: 265. L. t.: [Israel/Palestine] Jordanthal
= *Bombyx Serrula* var. *Palaestinensis* Staudinger,1895, Deutsche Entomologische Zeitschrift Iris, Dresden **7**: 263. L. t.: [Israel/Palestine] Jordanthal
= *Lasiocampa serrula aegyptiaca* Oberthür,1916, Etudes de Lépidoptérologie Comparée 1916: 327. L. t.: [Algeria] M'chounech, 32 km ONO Biskra

Note: Figured by de Freina & Witt (1987, pl. 28, figs. 42-44, adults), Lewandowski & Fischer (2002, fig. 2, adult), Wiltshire (1948a, pl. 7, figs 1, 2; 1990, fig. 25, adults). The *Lasiocampa serrula* (Guenée, 1858) group was revised by Lewandowski & Fischer (2005; 2008). Figured by Lewandowski & Fischer (2005, figs 5, 6, 7, adults; fig. 22, male genitalia; 2008, figs 4, 5, adults).

Distribution: Saharo-Eremic. *Lasiocampa serrula* (Guenée, 1858) was described from Spain (nominotypical subspecies) and occurs through the North African Maghreb countries from Morocco to Egypt, to the Levante countries and parts of the Arabian Peninsula; also known from Cyprus (Lewandowski & Fischer, 2002; 2005; Fischer & Lewandowski, 2003). According to Lewandowski & Fischer (2005; 2008) the subspecies in the Maghreb is *L. serrula undulata* (Staudinger, 1895), described from Algeria: Biskra (= *L. bomilcar* Oberthür, 1916; = *L. bomilcar hamilcar* Oberthür, 1916); while the populations of Egypt, the Levante, the Arabian Peninsula and Cyprus belong to *L. serrula davidis*.

Saudi Arabia	Wiltshire, 1990; Hejaz, 1997 (Legrain, unpubl.); Asir,1992-98 (Legrain, unpubl.); Lewandowski & Fischer, 2008;
UAE	Wiltshire, 1990; [Legrain & Wiltshire, 1998];
North Africa	Wiltshire, 1948a (Egypt); de Freina & Witt, 1987 (Morocco to Egypt); Lewandowski & Fischer, 2008 (Egypt);
Levante	Staudinger, 1895 (Israel; Jordan); Amsel, 1933; Lewandowski & Fischer, 2008 (Israel; Jordan; Cyprus).

Bionomics: Larva on *Salsola*, *Suaeda*, *Arthrocnemum*, *Atriplex* (de Freina & Witt, 1987), in moist areas or halophile steppes. Larval description by de Freina & León (2008, figs 4-6, 9). Figured by Lewandowski & Fischer (2008, figs 15, 16; 2012, figs 16, 17).

Lasiocampa josua (Staudinger, 1896) (Pl. 148, Fig. 6)

Bombyx (*Lasiocampa*) *josua* Staudinger, 1896, Deutsche Entomologische Zeitschrift Iris, Dresden **8**: 296, pl. 5, fig. 8. L. t.: [Israel/Palestine] Jordanthal

Note: Wiltshire (1948a, pl. 7, figs 5, 6, adults), suggested that in the past, *L. josua* has apparently been misidentified as *L. serrula*. According to Lewandowski & Fischer (2005) the Egyptian populations mentioned from Mariout in fact belong to *L. tripolitania* Lewandowski & Fischer, 2005, described from Libya and ranging from Tunisia to Egypt (Mariout) (cf. Lewandowski & Fischer, 2005, figs 13, 14 - *L. josua*; figs 15, 16 - *L. tripolitania*).

Distribution: East Mediterranean. Apparently endemic to the Levante (Palestine).

Levante Staudinger, 1896; Amsel, 1933; Wiltshire, 1948a (Palestine); Lewandowski & Fischer, 2005 (Palestine).

Bionomics: Autumnal. Larva described by Lewandowski & Fischer (2005) and figured by Lewandowski & Fischer (2011, fig. 12).

Lasiocampa trifolii bathseba (Staudinger, 1892) (Pl. 148, Figs 7, 8)

Bombyx trifolii var. *Bathseba* Staudinger, 1892**,** Deutsche Entomologische Zeitschrift Iris, Dresden **4**: 259. L. t.: [Israel] Jerusalem

Note: According to Lewandowski & Fischer (2012), the taxon *bathseba* Staudinger, 1891 is conspecific with the widespread *L. trifolii* ([Denis & Schiffermüller], 1775).

Distribution: Irano-Turanian, expansive. *L. trifolii* is known from nearly all the West-Palaearctic Region with exception of the northernmost parts and the southernmost arid and semirarid areas; eastward to South Siberia, Kazakhstan, Iran.

Saudi Arabia Zolotuhin & Zahiri 2008; Lewandowski & Fischer, 2012;
Levante Staudinger, 1892 (Israel); Lewandowski & Fischer, 2012 (Syria; Jordan; Palestine);
Iran Zolotuhin & Zahiri 2008.

Bionomics: Described by various authors, including de Freina & Witt (1987).

Genus *Bombycopsis* C. & R. Felder, 1874

= *Bufoidia* Wiltshire & Legrain, 1997, Fauna of Saudi Arabia **16**: 330. generotype: *Dendrolimus ledereri* Koçak, 1981 (= *Bombyx bufo* Lederer, 1861, praeocc.)

Wiltshire & Legrain, 1997 established the genus *Bufoidia* for the rather small group of species around *B. ledereri*. In 2009, Joannou & Krüger revised the Afrotropical lasiocampid genus *Bombycopsis* and included *Bufoidia* as second subgenus within the nominotypical *Bombycopsis.* The three Arabian species *Bufoidea pittawayi* Wiltshire & Legrain, 1997, *B. larseni* Wiltshire & Legrain, 1997 and *B. gallagheri* Wiltshire & Legrain, 1997 were removed from *Bombycopsis* (*Bufoidea*), because there does not appear to be a currently available genus in which to place them (Joannou & Krüger, 2009).

Bombycopsis (*Bufoidia*) *ledereri* (Koçak, 1981) (Pl. 148, Fig. 9)

Dendrolimus ledereri Koçak, 1981, Priamus **1**: 12. L. t.: Lebanon
= *Dendrolimus bufo* Lederer, 1861, Wiener Entomologische Monatschrift **5**: 153, pl. 2, fig. 1. L. t.: Lebanon, praeocc. by Fabricius, 1787

Note: Figured by Wiltshire & Legrain (1997, figs 13-15, male and female genitalia), Joannou & Krüger (2009, figs 136-141, adults; figs 275, 351, male and female genitalia).

Distribution: East Mediterranean. According to Joannou & Krüger (2009: 77, distribution map), the range of *B. ledereri* is restricted to the Levante (Sinai, Israel, Lebanon, Syria, Palestine, Jordan and NW Saudi Arabia).

Saudi Arabia Wiltshire, 1982; 1986; 1990; Joannou & Krüger, 2009; El-Hawagry *et al*., 2013 (Al-Baha Prov.);
Oman Wiltshire, 1980b;
Levante Lederer, 1861 (Lebanon); Amsel, 1933; Legrain & Wiltshire, 1997 (Lebanon; Israel; Palestine; Jordan); Joannou & Krüger, 2009; 1 ♂, N Israel, Carmel, Yagur, N. Nakhash, 10 km SE Haifa, 400m, 17.iii.1999 (gen.prep. H. Hacker 12466♂) (leg. Li/Müller)"; 1 ♂, N Israel, En. Afeq, 10.iii.1992 (leg. Li/Müller)"; 1 ♂, "C. Jordan, 10 km S Dead Sea, Ghor Feifa, - 320m, 8.iv.1999 (leg. Li/Müller)" (ZSM); 3 ♂♂, "E. Jordan, Asraq ed Durus, 80 km E Amman, 400m, 22.iv.1999 (gen.prep. H. Hacker 22627♂) (leg. Li/Müller)" (ZSM).

Bionomics: Early stages and larvae were described by de Freina (2002). Foodplants are *Prunus* spp.

Bombycopsis (***Bufoidia***) ***alfierii*** (Andres & Seitz, 1925)

Dendrolimus alfierii Andres & Seitz, 1925, Senckenbergiana **7**: 56. L. t.: Ägypten, Wadi Dengla bei Heluan

Note: Figured by Wiltshire (1948a, pl. 1, figs 6, 7, adults), Wiltshire & Legrain (1997, figs 19, 20, male genitalia), Joannou & Krüger (2009, figs 142-143, adults; figs 276, 352, male and female genitalia).

Distribution: East Afro-Eremic.The range of *B.alfierii* is restricted to Egypt.

North Africa	Andres & Seitz, 1925 (Egypt); Joannou & Krüger, 2009 (Egypt);
Levante	Wiltshire, 1948a (Sinai); Legrain & Wiltshire, 1997 (Sinai); Joannou & Krüger, 2009 (Sinai).

Bionomics: Larva figured by Wiltshire (1948a, pl. 1, fig. 8), including the description of the early stages. Foodplant *Zygophyllum coccineum* (Wiltshire, 1948a; Legrain & Wiltshire, 1997).

'***Bufoidia***' ***pittawayi*** Wiltshire & Legrain, 1997 (Pl. 148, Figs 10-12)

Bufoidia pittawayi Wiltshire & Legrain, 1997, Fauna of Saudi Arabia **16**: 333, plts 1-2, figs. 3, 5-6, 22-25. L. t.: Saudi Arabia, Asir, Al Foqa

Note: Figured by Wiltshire & Legrain (1997, figs 1, 2, adults; figs 22-25, male and female genitalia), Joannou & Krüger (2009, figs 149-151, adults; figs 278, 356, male and female genitalia), de Freina (2013, figs 31-35, adults, larvae, foodplant).

Distribution: East Afro-Eremic. *B. pittawayi* is rather widespread on the Arabian Peninsula; distribution map cf. Joannou & Krüger (2009: 83).

Saudi Arabia	Legrain & Wiltshire, 1997 (Asir); Joannou & Krüger, 2009; Asir, 1992-98 (Legrain, unpubl.);
Oman	Legrain & Wiltshire, 1997; Joannou & Krüger, 2009; de Freina, 2013; 1 ♂, "Prov. Dhofar, Canyon 6km N of Dalkut, 09.viii.2010 LF, 605m, N 17°03'21", E 53°13'19" (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie); 1 ♂, 1 ♀, "Prov. Al Dakhillijah, Birkat Al Sharaf, 30.vii.2010, 1810m, N 23°10'10", E 57°25'82" (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie); *3/2013;
Yemen	Legrain & Wiltshire, 1997; Hacker *et al*., 1999; Hacker *et al*., 2001; *5 (sc.) (only males); *13 (1) (female); *14 (occ.); *31 (f.c.); *32 (occ.); *33 (sc.); *37 (sc.); *39 (1); *43 (sc.); *44 (1); *48 (sc.); *51 (f.c.); *53 (sc.); *54 (sc.) (gen.prep.Hacker 12463); *55 (sc.); *58 (f.c.); *59 (f.c.); *62 (occ.); *63 (f.c.); *64 (1); *65 (1); *67 (1); *66 (f.c.); *68 (sc.); *69 (1); *70 (sc.); M2 (males); Joannou & Krüger, 2009;

Bionomics: Foodplant *Acacia* (Legrain & Wiltshire, 1997); larva figured by Wiltshire (1986, fig. 76), Ruf *et al*., (2002, figs A-J, larvae on *Cytisus*, *Medicago*). According to de Freina (2013), larva on *Vernonia arabica* (Asteraceae).

'***Bufoidia***' ***larseni*** Wiltshire & Legrain, 1997 (Pl. 148, Figs 14-15)

Bufoidia larseni Wiltshire & Legrain, 1997, Fauna of Saudi Arabia **16**: 335, plts 3-5, figs. 4, 26-27. L. t.: N. Oman, Rostaq

Note: Figured by Wiltshire & Legrain (1997, figs 3-5, adults; figs 26, 27, male genitalia), Joannou & Krüger (2009, fig. 147, adult; figs 277, 354, male and female genitalia).

Distribution: East Afro-Eremic. The range of *B. larseni* is restricted to UAE and Oman (Wiltshire & Legrain, 1997; Joannou & Krüger, 2009).

Oman	Wiltshire, 1977b; Legrain & Wiltshire, 1997; *9/2011;
UAE	Legrain & Wiltshire, 1997; 1998.

Bionomics: Foodplant unknown (Legrain & Wiltshire, 1997).

'***Bufoidia***' ***gallagheri*** Wiltshire & Legrain, 1997 (Pl. 148, Fig. 16)

Bufoidia gallagheri Wiltshire & Legrain, 1997, Fauna of Saudi Arabia **16**: 337, plt. 6, fig. 28. L. t.: Central Oman, 6 km W of Ras Madraka, 60m

Note: Female genitalia figured by Wiltshire & Legrain (1997, fig. 6, adult; fig. 28, female genitalia), Joannou & Krüger (2009, fig. 148, adult; fig. 355, female genitalia); male still unrecorded.

Distribution: East Afro-Eremic. *B. gallagheri* is an uncommon species, reported only from the type locality in Oman.

Oman — Legrain & Wiltshire, 1997; *12/2011.

Bionomics: Foodplant unknown (Legrain & Wiltshire, 1997).

Stoermeriana omana de Freina & Witt, 1988 (Pl. 148, Figs 17, 18)

Stoermeriana omana de Freina & Witt,1988, Mitteilungen der Münchner Entomologischen Gesellschaft **78**: 187. L. t.: Oman, Dhofar, Khadafri
= *Streblote das* sensu Wiltshire,1980a, nec Hering,1929.

Note: The figures given by Wiltshire (1990, fig. 29, adult) and Hacker (1999, male genitalia) are of the following species, *S. heterochroma* Hacker, spec. nov. An overview of the taxa of the genus *Stoermeriana* de Freina & Witt, 1983 was given by Zolotuhin (2007).

S. das Hering, [1929] was reported by Wiltshire (1980, pl., fig. 6) from Oman, Dhofar as "*Streblote das* (Hering) ? subspec. nov." According to Wiltshire's text the type of *S. das* is not available, and therefore "it is safer not to introduce a new name for the Dhofar race". In 1983, de Freina & Witt described the genus *Stoermeriana* for the NW African taxon *Taragama regraguii* Rungs, 1948 (male genitalia cf. fig. 3). Finally, in 1988 they described the species already mentioned and figured by Wiltshire from Oman as *Stoermeriana omana*, without figures of the genitalia of the newly described species, but including figure of the male genitalia of *S. das* (Hering, [1929]) (fig. 4).

Joannou & Krüger (2009) summarized the "somewhat complicated taxonomic history of *S. das*/*S. omana*", including the fact that the aedeagal apodemes of the type specimen of *S. das* (de Freina & Witt, 1988, fig. 4) were severed during dissection and figured therefore less than perfectly. Joannou & Krüger (2009) excluded *S. omana* from the genus *Bombycopsis* C. & R. Felder, 1874, revised by them.

The reports of *Stoermeriana cuneata* (Distant, 1897) (Annals and Magazine of Natural History (6) **20**: 207; described from [RSA] Transvaal: Lydenburg District, Pretoria, Pretoria) by Warnecke (1930a; 1934) refer to *S. omana* or to *S heterochroma* spec. nov.

Distribution: East Afro-Eremic. Apparently endemic to Oman (Dhofar).

Oman — Wiltshire, 1980b; de Freina & Witt,1988; de Freina, 2013; 2 ♂♂, 1 ♀, "Prov. Dhofar, Salalah vic., Ghadu 13.x.2011, 769m, N 17°07'21'', E 53°59'29" (gen.prep. H. Hacker 22845♂, 22842♂) (leg. Stadie & Löbel)" (BC ZSM Lep 84423, 84424) (coll. D. Stadie); *5/2013.

Bionomics: Larva on *Acacia* spp. (de Freina, 2013).

Stoermeriana heterochroma Hacker **spec. nov.** (Pl. 149, Figs 1-4)

Material

Holotype: ♂, "Yemen, Prov. Ibb, 13°53'N, 44°06'E, 2 km n pass w Ibb, village Diatam, 2300m, 11.III.2000 (gen.prep. H. Hacker 22831♂) (leg. F. Aulombard, M. Fibiger, H. Hacker & H-P. Schreier)" (ex coll. H. Hacker, ZSM);

Paratypes:

Yemen — 1 ♂, *5 (gen.prep. H. Hacker 11262♂) (BC ZSM Lep 84399); 18 ♂♂, 1 ♀ *36 (gen.prep.Hacker 11258♂) (BC ZSM Lep 84398); 1 ♂, *39; 2 ♂♂, *40; 1 ♂, *48; 3 ♂♂, *51; 17 ♂♂, *58; 2 ♂♂, *60; 4 ♂♂, *62;2 ♂♂, *63; 2 ♂♂, *65; 1 ♂, *66; 6 ♂♂, *67; 2 ♂♂, *68 (gen.prep. H. Hacker 22826♂, 22765♂), *69; Saudi Arabia 1 ♀, "SW-Arabien, Asirgebirge, 2350m, 5 km s Nomas, 17.-21.iv.1979 (leg. Amsel)" (ex coll. H. Hacker, ZSM; H-P. Schreier; M. Fibiger/UZM).

Locus typicus: Yemen, Prov. Ibb, 2 km n pass w Ibb, village Diatam, 2300m.

Derivatio nominis: The name of the species is derived from the Greek *heter* = *different* and *chrom* = *coloured*, indicative of the coloration compared with its congener *S. omana*.

Diagnosis and description: This species (unnamed) has already been figured by Wiltshire (1990, fig. 29, adult) and Hacker (1999, pl. 7, figs 2, 3; text figs 1, 2, male genitalia). An overview of the taxa of the genus *Stoermeriana* de Freina & Witt, 1983 was given by Zolotuhin (2007).Wingspan of the holotype 55.5 mm, of the paratypes (males) 41 to 60 mm, (females) 50 to 71.5 mm. Antennae of the male strongly doubly bipectinate with long primary and very short secondary branches Those of the female also doubly bipectinate

but with short primary and tiny secondary branches.

The facies of *Stoermeriana* de Freina & Witt, 1983 species are generally very similar and of the type of *S. cuneata* (for instance figured by Pinhey (1975, pl. 24, fig. 518), but the differences in the second species of the Arabian Peninsula, *S. omana,* are more distinctive than in most of the numerous other African species (list of species cf. Zolotuhin (2007).

Distinctive characters of *S. omana* and *S. heterochroma* spec. nov.:

- apex of the forewing of *S. heterochroma* more tapered, costa towards the apex less curved; posterior third of the forewing of *S. omana* rounded
- ground colour of all parts of *S. omana* mocha-brown with slightly brightened hindwings; that of *S. heterochroma* beige-brownish with red tinge, hindwings slightly paler
- forewing pattern of *S. heterochroma* as consequence of the paler coloration more inconspicuous than in *S. omana*, especially the accurate median and antemedian fasciae and the strongly serrated postmedian fascia
- the typical dorsal falcula of the forewing more distinct in *S. heterochroma* than in *S. omana*
- underside of the wings of both species monochrome, forewing of *S. omana* usually with prominent median fascia, while this feature is usually absent in *S. heterochroma.*

Male genitalia: The terminology of the components follows Joannou & Krüger (2009: 16). The genitalia of most of the African species are still unpublished, but those of the closest congeners are already known: *S. das* (de Freina & Witt, 1988, fig. 4); *S. omana* (described here). The male genitalia of *S. heterochroma* have already been figured by Hacker (1999, figs 1, 2) (Pl. 5, Figs a-h).

Main differences between *S. heterochroma*, *S. omana* and *S. das*:

- socii/gnathos remnants (sg of Joannou & Krüger, 2009) of *S. das* basally broad, posteriorly with a knob-shaped tip. Sg of *S. omana* overall longer, not straight, but curved and as in *S. heterochroma* without distal knob. Sg of *S. heterochroma* straight, rather short and broadened only at the very base
- genital capsule (a) smallest in *S. omana*
- cubile (b) with tooth-like projections (tip) of *S. heterochroma* large, nearly circular, those of both other species smaller and elongated
- tooth-like projections (tip) of *S. heterochroma* extended, embracing 2/3 of the surface of the cubile; those of *S. das* restricted to the posterior part (1/4 of the surface of the cubile); those of *S. omana* comparable with *S. heterochroma*, but of minor count and distinctly larger size.

Distribution: East Afro-Eremic. *S. heterochroma* is endemic to the SE Arabian Peninsula, and evidently restricted to the SW part (Asir Mountain system of Saudi Arabia and Yemen).

Saudi Arabia	Wiltshire, 1980a; 1990; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Asir, 1992-98 (Legrain, unpubl.);
Yemen	Wiltshire, 1980b; Hacker, 1999; Hacker *et al*., 1999; Hacker *et al*., 2001.

Stoermeriana nabataea de Freina, 2002 (Pl. 149, Fig. 5)

Stoermeriana nabataea de Freina, 2002, Esperiana **9**: 147, pl. 7, figs 1-4. L. t.: Jordan, Südwestjordanien, Edom-Berge, 10-15 km E Petra, Jebel ed Deir, 1200m

Note: Figured by de Freina (2002, pl. 7, figs 1-4, adults), Lewandowski (2008, figs 10, 11, adults).

Distribution: East Mediterranean. Endemic to Jordan, restricted to a small area in the southwestern part of Jordan, but perhaps also in the adjacent parts of Saudi Arabia such as the Jabal al-Lawz.

Levante	de Freina, 2002 (Jordan); 1 ♂, "Jordan, 10-15 km E Petra, Jebel el Hamma, 1350m, 13.iii.1999 (leg. C. Li & G. Müller)"; 1 ♂, "Jordan, 10-15 km E Petra, Jebel el Hamma, 1400m, 13.iii.1999 (gen.prep. H. Hacker 13714♂) (leg. V. Kravchenko)".

Bionomics: Larva described and figured by Lewandowski (2008, figs 1-9). Foodplant *Cupressus sempervirens* L.

Streblote acaciae (Klug, 1829) (Pl. 149, Figs 6, 7)

Bombyx acaciae Klug, 1829, Symbolae Physicae, seu Icones Descriptiones Insectorumquae ex itinere per Africam borealem et Asiam occidentalem F.G. Hemprich et C.H. Ehrenberg studio novae aut illustratae redierunt. Insecta, pl. 9

Note: Figured by Speidel & Hassler (1989, pl. 4, figs 19, 20, adults), Wiltshire (1948a, pl. 6, figs 3, 4; 1990,

fig. 27, adults).

Distribution: Saharo-Eremic. *S. acaciae* occurs from Morocco throughout the Marhreb countries to the Levante and the Arabian Peninsula.

Saudi Arabia	Wiltshire, 1984; 1990; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Hejaz, 1997 (Legrain, unpubl.); Asir,1992-98 (Legrain, unpubl.);
Oman	Wiltshire, 1980b; de Freina, 2013;
Yemen	Hampson, 1896; Hacker *et al*., 1999; de Freina & Witt,1987; Hacker *et al*., 2001; M22; M23; *30 (sc.); *36 (1); *48 (1); *54 (1); *63 (occ.); M22; M23);
North Africa	Klug,1829; Wiltshire, 1948a (Egypt);
Levante	1 ♂, "S Jordan, Acaba, 300m, 12.-16.ii.2001 (leg. Kieuger & Saldaitis)" (MW); 1 ♂, "Egypt, Sinai, 650-750m, 16-17 km SW Nuweiba, 27.-29.ii.1996 (leg. Gy. M.)" (MW).

Bionomics: Larva on *Acacia* spp., multivoltine (Wiltshire, 1948, pl. 6, fig. 3; de Freina & Witt, 1987).

Streblote siva (Lefèbvre, 1827) (Pl. 149, Figs 9, 10)

Bombyx siva Lefèbvre, 1827, Mémoires de la Societé Linnéenne de Paris **6**: 210. L. t.: India

Note: Figured by Wiltshire (1990, fig. 28, adult). *S. siva* replaces the Pan-Eremic *Streblote panda* Hübner, [1820] in warm, subtropical-tropical areas. *S. panda* occurs in Egypt, NW Africa, S Iran, and from there to Central Asia(Wiltshire, 1957).

Distribution: Oriental. *S. siva* is rather common on the eastern Arabian Peninsula, extending to S Asia (Wiltshire, 1990).

Saudi Arabia	Wiltshire, 1980a; 1990; 1964 (Bahrain); Al-Houty, 2000 (Kuwait);
Oman	Wiltshire, 1977b; 1985; 1990;
UAE	Legrain & Wiltshire, 1998;
Yemen	*14 (1);
Levante	1 ♂, "S Jordan, 100 km N Aaaba, 1000m, early iii 2000 (leg. Li & Müller)" (MW);
Iraq	Wiltshire, 1957; 1990;
Iran	Zolotuhin & Zahiri 2008.

Bionomics: Bivoltine. Larvae on *Zizyphus spina-christi*, *Populus euphratica*, *Tamarix*, *Punica*, *Salix*, *Prosopis stephaniana*, and perhaps other trees and bushes (Wiltshire, 1957; 1990).

Streblote microsmaug Zolotuhin, 2015 (Pl. 149, Fig. 8)

Streblote microsmaug Zolotuhin, 2015, Ulyanovsk: "Korporaciya Technologiy Prodvizheniya", 381. L. t.: N. Yemen, 700m, Al-Hudaida prov., Al Mahmia river valley, Burra, 19.xi.2008

Note: Figured by de Zolotuhin (2015, adults).

Distribution: Saharo-Eremic. Endemic to Yemen; sister species of *Streblote panda* (Hübner, [1820]), which occurs from Spain throughout the North African Maghreb countries from Morocco to Egypt and the Levante countries. *Streblote panda aegyptiaca* (Bang-Haas, 1906), described from Egypt: Port Said, was upgraded by Zolotuhin (2015) to species rank (cf. also Wiltshire, 1948a).

Saudi Arabia	Wiltshire, 1994; Asir,1992-98 (Legrain, unpubl.);
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001; *14 (1); *63 (1); Zolotuhin, 2015;

Bionomics: Larva of *Str. panda* and probably also *Str. microsmaug* polyphagous, on *Genista*, *Tamarix*, *Polygonum*, *Pistacia*, *Spartium*, *Alhagi* etc., multivoltine (de Freina & Witt, 1987).

Braura sultani (Wiltshire, 1986)

Pachypasa sultani Wiltshire, 1986, Fauna of Saudi Arabia **8**: 268, fig. 77. L. t.: Saudi Arabia, Asir, Baljurshi (*Olea-Dodonaea* zone)

= *truncata* sensu Wiltshire,1982 nec Walker, 1855

Note: Figured by Wiltshire (1986, fig. 77, adult). The reports given by Hacker *et al*., (1999) and Hacker *et al*., (2001) refer to the following species.

Distribution: East Afro-Eremic. Endemic to the SW Arabian Peninsula.

Saudi Arabia WILTSHIRE, 1982, 1986, 1990; EL-HAWAGRY *et al*., 2013 (Al-Baha Prov.); Asir, 1992-98 (LEGRAIN, unpubl.).

Bionomics: Unknown.

Braura desdemona ZOLOTUHIN & GURKOVICH, 2009 (Pl. 149, Figs 11, 12)

Braura desdemona ZOLOTUHIN & GURKOVICH, 2009, Neue Entomologische Nachrichten **63**: 47, pl. 15, figs 18, 19. L. t.: Yemen, Prov. Sana'a, Jabal al Hotep (S Manakhah), 2800m

= *Pachypasa sultania* sensu HACKER *et al*., 1999, *nec* WILTSHIRE, 1986

Note: Figured by ZOLOTUHIN & GURKOVICH (2009, pl. 15, figs 18, 19, adults; figs 110, 111, male genitalia; fig. 191, female genitalia).

Distribution: East Afro-Eremic. Endemic to the SW Arabian Peninsula (Yemen).

Yemen HACKER et al., 1999; HACKER *et al*., 2001; *24 (1); *40 (1); *48 (1); *54 (1); *55 (1); *58 (1); *63 (sc.); *64 (sc); *65 (occ.); *66 (occ.); *67 (oc.) reported as " *Pachypasa sultani* WILTSHIRE,1986"); ZOLOTUHIN & GURKOVICH, 2009.

Bionomics: Unknown.

Subfamily Gonometinae

Anadiasa obsoleta obsoleta (KLUG, 1830) (Pl. 149, Figs 13-15)

Gastropacha obsoleta KLUG, 1830, Symbolae Physicae, seu Icones Descriptiones Insectorumquae ex itinere per Africam borealem et Asiam occidentalem F.G. HEMPRICH et C.H. EHRENBERG studio novae aut illustratae redierunt. Insecta: pl. 30, figs 6, 7. L. t.: [Egypt/Sudan] Nuba and Upper Egypt

= *Gastropacha undata* KLUG, 1830, Symbolae Physicae, seu Icones Descriptiones Insectorumquae ex itinere per Africam borealem et Asiam occidentalem F.G. HEMPRICH et C.H. EHRENBERG studio novae aut illustratae redierunt. Insecta: pl. 30, fig. 3. L. t.: [Egypt/Sudan] Nubia, between Syena and Suckot

= *Gastropacha fortificata* KLUG, 1830, in litt.

= *Odontocheilopteryx griseata* WARREN & ROTHSCHILD,1905, Novitates Zoologicae **12**: 22. L. t.: Sudan and Albara River

= *Nadasia incerta* KRÜGER, 1939, Annali Museo Libico di Storia Naturale **1**: 326, pl. 13, figs 24a, b. L. t.: [Libya] Uadi Sofeggin, Uadi Zemzem

Note: Figured by de FREINA & WITT (1987, pl. 26, figs 50-52, adults). At that time doubtful synonymy of the taxa *undata* and *obsoleta* was discussed by WILTSHIRE (1948a): *A. undata* was described from a large female; *A. obsoleta* from colour figures of the larvae. ZOLOTUHIN (2007) finally defined *A. undata* as synonym of *A. obsoleta* and gave a list of the taxa in the genus *Anadiasa* AURIVILLIUS, 1904 revised so far.

Male genitalia for comparison (Pl. 4, Figs f-k):

Egypt 1 ♂, "Assuan (gen.prep. H. HACKER 22807♂)" (ex coll. WEYMER; NHMU); 1 ♂, "Minieh, e. l. vii [18]99 (gen. prep. H. HACKER 22801♂)" (NHMU);
Sudan 1 ♂, (*fortificulata* KLUG i. litt.) "Nubia (gen.prep. H. HACKER 22804♂)" (NHMU);
Israel 1 ♂, "Jaffa (gen.prep. H. HACKER 22811♂**)" (ex coll. STAUDINGER; NHMU);

** male genitalia of *Oligia latruncula* ([DENIS & SCHIFFERMÜLLER], 1775) - obviously this specimen was provided with awrong and interchanged abdomen.

Distribution: Saharo-Eremic. *A. obsoleta* is widespread throughout the Sahara and Sahel zone from Mauritania and Morocco to Egypt and the Levante (de FREINA & WITT (1987), SPEIDEL & HASSLER (1989, pl. 4, figs 16, 17, 21, Central Sahara). According to ZOLOTUHIN (2007) the taxa *malacosomoides* ROTHSCHILD, 1915 (= *sahariensis* ROTHSCHILD, 1921), described from Niger (Sahara), indicate a subspecies of *A. obsoleta*.

Saudi Arabia WILTSHIRE, 1980a; 1990; Asir,1992-98 (LEGRAIN, unpubl.);
Yemen HACKER *et al*., 1999; HACKER *et al*., 2001; *24 (1); *27 (1) (gen.prep. H. HACKER 22734♂); *33 (1); *34 (f.c.); *38 (1); *39 (1) (gen.prep. H. HACKER 22736♂); *48 (2) (gen.prep. H. HACKER 22820♂, 22817♂);
North Africa KLUG, 1830 (Egypt); WARREN & ROTHSCHILD,1905 (Sudan); WILTSHIRE, 1948a (Egypt); SPEIDEL & HASSLER, 1989 (Central Sahara, Algeria); de FREINA & WITT, 1987 (Sahel zone from Mauritania and Morocco to Egypt; ZOLOTUHIN, 2007 (Niger);
Levante 1 ♂, "Jaffa (gen.prep. H. HACKER 22811♂**)" (ex coll. STAUDINGER; NHMU).

Bionomics: Males are on the wing at beginning of dawn (WILTSHIRE, 1948a; de FREINA & WITT, 1987). Larvae on *Acacia* spp. The early stages were described in detail by WILTSHIRE (1948a).

Odontocheilopteryx myxa WALLENGREN, 1860 (Pl. 149, Fig. 16)

Odontocheilopteryx myxa WALLENGREN, 1860, Wiener Entomologische Monatschrift **4**: 165. L. t.: [RSA] Caffraria

Note: The genus *Odontocheilopteryx* WALLENGREN, 1860 was revised by GURKOVICH & ZOLOTUHIN (2009) and includes 23 species which are distributed throughout Subsaharan Africa and Madagascar. Figured by PINHEY (1975, pl. 24, figs 5a, 56b, adults), HACKER (1999, pl. 7, fig. 5, adult), GURKOVICH & ZOLOTUHIN (2009, pl. 1, figs 1-9, adults; figs 6-9, male genitalia; figs 54, 55, female genitalia).

Distribution: Afrotropical-subtropical (Subsaharan). *O. myxa* is widespread in South and East Africa, distribution map cf. GURKOVICH & ZOLOTUHIN (2009: 92).

Yemen — HACKER, 1999; HACKER *et al*., 2001; *14 (1); *39 (1); *40 (1); *48 (4); *54 (2); *55 (1); *63 (2); *64 (4); *65 (1); *66 (1); *70 (1); GURKOVICH & ZOLOTUHIN, 2009.

Bionomics: Larva on *Eriosema*, *Acacia karro*, and perhaps on coffee PINHEY (1975).

Superfamily Bombycoidea LATREILLE, 1802
Family Bombycidae LATREILLE, 1802

Trilocha arabica WILTSHIRE, 1982 (Pl. 149, Fig. 17)

Trilocha arabica WILTSHIRE, 1982, Fauna of Saudi Arabia **4**: 278, pl. 1, fig. 5. L. t.: Saudi Arabia, Asir, Mts. Namas, 2450m

Note: Male genitalia figured by WILTSHIRE (1982, fig. 5a), those of *Trilocha ficicola* WESTWOOD (?date) from Natal and Kenya cf. figs 5b, 5c.

Distribution: East Afro-Eremic. Endemic to the Arabian Peninsula.

Saudi Arabia — WILTSHIRE, 1982; 1990; Asir,1992-98 (LEGRAIN, unpubl.);
Yemen — HACKER *et al*., 1999; HACKER *et al*., 2001; 13 (1); *14 (2); 24 (1); *33 (1); *40 (sc.); *55 (1); *62 (1); *63 (1); *65 (occ.); *66 (sc.); *67 (sc.); 68 (sc.); *69 (1); 70 (sc.).

Bionomics: Unknown.

Family Saturniidae Boisduval, 1837

by

Wolfgang A. Nässig, Stefan Naumann & Rolf G. Oberprieler

Note: The family Saturniidae comprises at least 2350 described species in the world (van Nieukerken et al. 2011) and about 450 taxa in the Afrotropical region although many additional taxa of questionable validity have been described. It includes some of the largest moths in the world and is popular with collectors; some few of them, mainly in Asia, are commercially used for production of wild silk products. Together with the families Lasiocampidae, Apatelodidae, Eupterotidae, Brahmaeidae, Endromididae, Anthelidae, Carthaeidae, Phiditiidae, Sphingidae and Bombycidae it comprises the superfamily Bombycoidea (Zwick *et al*., 2011), but the relationships among these families, and the status of some of them, is still not fully resolved. An overlook about latest systematic classification of the family into subfamilies and tribes was given in the descriptional work of *Usta arabica* by Nässig *et al.* (2015). The representatives on the Arabian Peninsula are members of the subfamily Bunaeinae, therein of the tribes Micragonini and Urotini.

Tribe Micragonini

Note: About 13 genera; distributed throughout subsaharan Africa but absent from Madagascar. Only a single genus and species from the Arabian Peninsula.

Genus *Campimoptilum* Karsch, 1896

Campimoptilum Karsch, 1896: 248 (type species, by monotypy: *Saturnia kuntzei* Dewitz, 1881)
= *Lasioptila* Kirby, 1896: 386 (type species, by subsequent designation (Jordan, 1922: 291): *Lasioptila ansorgei* Kirby, 1896)
= *Yatanga* Darge, 2008: 12 (type species, by original designation: *Saturnia smithii* Holland, 1897)

Historically representatives of this genus were classified as members of *Goodia* Holland, 1893 and handled since long time as congeneric (Aurivillius, 1904, plus following authors such as e.g. Jordan, 1922; Pinhey, 1972; Oberprieler, 1997). For details see Nässig et al. (2015). Almost nothing is known about preimaginal instars of the genus, only for the southern African *C. kuntzei* (Dewitz, 1881) there is some knowledge. Larvae of this species feed on several species of Fabaceae in southern Africa, mainly *Bauhinia galpinii*, *Brachystegia spiciformis*, *Dichrostachys cinerea*, *Julbernardia globiflora* and *Vachellia sieberiana* (Platt, 1921; Pinhey, 1972; Oberprieler, 1995).

Campimoptilum arabicum (Rougeot, 1977) (Pl. 149, Fig. 18)

Goodia smithi [*sic*] *arabica* Rougeot, 1977: 92, fig. 4. L. t.: Yemen, Dhala, 5000 ft. Bouyer, 1999: 28.
Goodia smithii arabica Rougeot, 1977: Wiltshire, 1994: 115. Hacker, 1999: 79.
Yatanga arabica (Rougeot): Darge, 2008: 13; 2011: 2.
Campimoptilum arabicum (Rougeot): Nässig *et al*., 2015: 33, figs. 1 & 2.

Tribe Urotini

Note: As reasoned and summarized from recent literature by Nässig et al. (2015), Urotini should now be classified as a tribe within a subfamily Bunaeinae. 11 genera are currently placed in this tribe, they are characterised by possessing bipectinate antennae, in contrast to the quadripectinate antennae of the Micragonini and Bunaeini, but this character does not convincingly delimit the Urotini as a monophylum. Oberprieler (1997) found that the position of *Usta* Wallengren, 1863, *Parusta* Rothschild, 1907, *Eudaemonia* Hübner, 1819 and *Antistathmoptera* Tams, 1935 in the group is somewhat uncertain, which is supported by the few phylogenetic analyses to date that have included a number of genera of Urotini, and which indicate that the core group is related to Bunaeini whereas *Usta* may be more closely related to Micragonini and *Eudaemonia* and may represent the basal-most lineage of Bunaeinae (Regier *et al*., 2008; Barber *et al*., 2015). A number of potential synapomorphic characters for the core group (Urotini *sensu stricto*) were outlined by Oberprieler (1997).

The Urotini in the current, wide sense live mainly in forested regions of continental Africa as well as Madagascar, and also the Asian *Sinobirma* Bryk, 1944 inhabits high-altitude forests in the Himalayas. In contrast, *Usta* and *Parusta* occur in open savanna to semi-desert areas, and it is a single species of *Usta* that is known from the Arabian Peninsula.

Genus *Usta* Wallengren, 1863

Usta Wallengren, 1863: 142 (type species, by original designation: *Saturnia wallengrenii* C. & R. Felder, 1859)

Note: *Usta* currently contains about three species, although some regional or colour forms of *U. terpsichore* (Maassen, 1885) (*subangulata* Bouvier, 1930, *alba* Terral & Lequeux, 1991, *grantae* Terral & Lequeux, 1991, *yaere* Darge, 1994) are sometimes treated as distinct species. The status of the Ethiopian taxon, *abyssinica* Aurivillius, 1898, is however in need of investigation. The few known larvae feed mainly on *Commiphora* (Burseraceae), but those of *U. terpsichore* also on *Sclerocarya birrea* (Anacardiaceae) and sometimes the introduced *Schinus molle* (Anacardiaceae) and *Melia azedarach* (Meliaceae), and those of *U. angulata* Rothschild, 1895 also on *Schinus molle*.

Usta arabica Nässig, Naumann, & Oberprieler, 2015 (Pl. 150, Fig. 1)

Usta subangulata Bouvier, 1930: Wiltshire (1994: 115), Hacker (1999: 79), Hacker et al. (1999: 269).

Usta sp.: Hacker et al. (2001: 601)

Note: This recently described species is known from Yemen and Saudi Arabia, following few locality data for the taxon are known so far:

Holotype: ♂, Republic of Yemen 18, Prov. Hadramaut [Hadhramaut], 15°24' N, 48°21' E, Wadi Daw'an [Doan], Khar Sowdan, 10 km s. ÁI Huraydah, 900 m, 13. xi. 1996, 900 m, leg. Bischof, Hacker, Schreier no. SMFL 4683, barcode SNB 4889 (in coll. Forschungsinstitut Senckenberg, Frankfurt am Main);

Paratypes: 1 ♂, Saudi Arabia, Khurma, 21°54‘ N, 42°3‘ E, 6. xi. 1936, H. St. John Philby (NHMUK London). 1 ♂, Saudi Arabia, Tarima (nr. Najran Oasis) [17°52‘ N, 44°7‘ E], 8. xi. 1936, H. St. John Philby (NHMUK Lndon). 1 ♀, Yemen, W[adi] Rasian [Rasyan], YAR [13°24' N, 43°36' E], ii.1972, El-Hadi, det. J. D. Bradley, 1974" (NHMUK London), barcode SNB 4890 [without result, no successful DNA analysis].

The holotype has a forewing length of 40 mm, the female paratype of 41 mm. *U. arabica* is quite similar to *U. angulata*, the geographically closest species to it, but it differs from this species as follows: jagged black outer forewing band anteriorly only slightly incurved basad (strongly and sharply incurved/angulate in *U. angulata*); white bar present between outer and inner forewing bands posteriorly (absent in *U. angulata*); eyespots of both wings with distinct white proximal crescent (proximal crescent small and narrow, greyish in *U. angulata*); hindwing band ending at posterior margin without or with only faint black spot (with conspicuous spot in *U. angulata*); dark wing areas without purplish hue (usually with purplish hue in *U. angulata*);

Male genitalia (Fig. XX): valves of male genitalia apically rounded (usually truncate or with slight inner angle or point in *U. angulata*); uncus dorsally inflated (flat or only slightly rounded in *U. angulata*). In these differences of the wings, *U. arabica* is more similar to the geographically far distant *U. wallengrenii* (C. & R. Felder, 1859), which differs in having the outer forewing band evenly jagged and curved (not more strongly jagged posteriorly and incurved anteriorly, as in *U. angulata* and *U. arabica*), the hindwing band usually distinct, the valves narrower, apically rounded or bluntly angled, and the uncus smaller (narrower and shorter) and dorsally flat. Male genitalia with broad uncus, which is dorsally expanded, with acute ventrolateral processes; gnathos with median portion strongly rounded; juxta short, transverse, posterior margin shallowly bisinuate and laterally sharply angled; valves with apex rounded, without tooth-like process, with sparse long setae on inside; saccus; phallus typical for genus, apex asymmetrically expanded, vesica emerging on ventral side. Sternite 8 without pair of median processes. A male and female specimen plus male genitalia structures of *U. angulata* are figured here for comparison.

Family Sphingidae Latreille, 1802

Subfamily Sphinginae Latreille, 1802

Pseudoclanis molitor subviridis (Talbot, 1932) (Pl. 150, Fig. 2)

Polyptichus molitor subviridis Talbot, 1932, Bulletin of the Hill Museum **4**: 178. L. t.: [Somalia] Br. Somaliland, Buran

Note: Figured by Carcasson (1968, pl. 2, fig. 7, adult); Wiltshire (1990, fig. 35, adult), de Freina (2013, figs 24, 25, adults), Eitschberger & Müller, 2014 (figs 1, 2, adult).

Distribution: Afrotropical-subtropical (Subsaharan). The nominotypical subspecies *molitor* Rothschild & Jordan 1912 was described from Nigeria, Benue and is widely distributed in Subsaharan Africa, while the subspecies *subviridis* ranges in Somalia and on the Arabian Peninsula.

Saudi Arabia	Wiltshire, 1983, 1986, 1990; Asir,1992-98 (Legrain, unpubl.);
Oman	de Freina, 2013; "Jebel al Qamar, 2000m, 5.xi.2013 (leg. S. Lewandowski)" (coll. S. Lewandowski); *3/2013;
Yemen	Wiltshire, 1986, 1990; Hacker *et al*., 1999; Hacker *et al*., 2001; *24 (1); *35 (2); *36 (sc.); *40 (2); *55 (1); *56 (1); *58 (1); *59 (1); *60 (1); *64 (1); *65 (1); *68 (occ.);*70 (occ.);
North Africa	Talbot, 1932 (Somalia); Carcasson, 1968 (Nigeria, Senegal to Sudan); Eitschberger & Müller, 2014 (Central Mali) [nominotypical subspec.].

Polyptichoides grayi niloticus (Jordan, 1920) (Pl. 150, Figs 3, 4)

Polyptichus grayi niloticus Jordan,1920, Novitates Zoologicae **27**: 277. L. t.: White Nile

Note: Figured by Carcasson (1968, pl. 2, figs 2, 3, adults; pl. 11, fig 8, pl. 13, fig. 1, genitalia), Wiltshire (1990, fig. 501, adult).

Distribution: Afrotropical-subtropical (Subsaharan). The nominotypical subspecies *grayi* Walker, 1856, described from RSA, Natal, occurs in South Africa and Zimbabwe. The subspecies *niloticus* Jordan,1920 is common and widespread in dry bush and savannah further north to Ethiopia, Somalia, Sudan (Carcasson, 1968) and the southern Arabian Peninsula.

Saudi Arabia	Wiltshire, 1990; Asir,1992-98 (Legrain, unpubl.);
Oman	3 ♂, "Prov. Dhofar, 20km W of Al Mugsahyl, Wadi Afawl, 90m, 02./07.viii.2010, N 16°51'99'', E 53°49'09'' (leg. Bittner, Lehmann & Stadie)" (coll. D. Stadie);
Yemen	Hacker *et al*., 2001; *35 (1); *36 (2); *39 (1); *40 (1); *58 (1); *64 (1) *65 (2); *66 (2); *67 (2); *68 (sc.); *69 (1); *70 (occ.);
North Africa	Carcasson, 1968 (Somalia; Sudan; Ethiopia).

Bionomics: Larvae on *Cordia*, *Ehretia* species (Boraginaceae) and *Celtis* (Ulmaceae) (Fawcett, 1903; MacNulty, 1970; Pinhey, 1975).

Agrius convolvuli (Linnaeus, 1758) (Pl. 150, Fig. 5)

Sphinx convolvuli Linnaeus, 1758, Systema Naturae (Edn. 10) **1**: 490. L. t.: [Europe]

Note: Figured by Wiltshire (1990, fig. 40, adult), Pittaway (1993, pl. 5, figs 2, 3, adults).

Distribution: Palaeotropical-subtropical. A very strong flier and frequent migrant and consequently extremely widely distributed in practically all habitats in Africa, Madagascar, Seychelles, Europe, Asia and Australia (Carcasson, 1968).

Saudi Arabia	Wiltshire, 1980, 1984 (Bahrain), 1990; Shalaby, 1961; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Asir,1992-98 (Legrain, unpubl.);
Oman	Wiltshire, 1985;
UAE	Legrain & Wiltshire, 1998;
Yemen	Butler, 1884; Hampson, 1896; Warnecke, 1934; Hacker *et al*., 1999; Hacker *et al*., 2001; *5 (1); *33 (1); *34 (1); *36 (occ.), *37 (1); *39 (2); *49 (1); *56 (3); *58 (occ.); *62 (occ.); *67 (occ.); *68 (sc.); *70 (1);
North Africa	Wiltshire, 1948a (Egypt); Pittaway, 1993; Lewandowski & Lewandowski-Krenz (2014) (Egypt);
Levante	Amsel, 1933; Pittaway, 1993;
Asia Minor	Pittaway, 1993;
Iraq	Wiltshire, 1957; Pittaway, 1993;
Iran	Pittaway, 1993.

Bionomics: Larvae on *Convolvulus* spp. *Chrysanthemum*, *Ipomoea* spp.

Acherontia atropos (Linnaeus, 1758) (Pl. 150, Fig. 6)

Sphinx atropos Linnaeus, 1758, Systema Naturae (Edn. 10) **1**: 490. L. t.: [Europe]

Note: Figured by Wiltshire (1990, fig. 36, adult), Pittaway (1993, pl. 5, fig. 4, adult).

Distribution: Afrotropical-subtropical (Subsaharan). On the Arabian Peninsula, the range of *A. atropos* extends easternmost as far as Dhofar (Qara Mts.). According to Wiltshire (1957), the Arabian and Syrian deserts appear to be a barrier preventing these and other Asiatic and Ethiopian Tropical species from meeting. *A. atropos* is a strong flier and frequent migrant as the preceding species, known throughout Africa, Madagascar and the Seychelles. Distribution in the Western Palaearctic Region cf. Pittaway (1993, map 3).

Saudi Arabia	Wiltshire, 1986; 1990; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Asir, 1992-98 (Legrain, unpubl.); Al-Houty, 2000 (Kuwait);
Oman	Wiltshire, 1980a, b; 1990; *3/2013;
Yemen	Wiltshire, 1986; Hacker *et al*., 1999; Hacker *et al*., 2001; *7 (1); *34 (1); *41 (1); *56 (2); *58 (7); *60 (2); *62 (1); *67 (occ.);
North Africa	Wiltshire, 1948a (Egypt); Lewandowski & Lewandowski-Krenz (2014) (Egypt);
Levante	Amsel, 1933; de Freina & Witt, 1987; Pittaway, 1993;
Asia Minor	de Freina & Witt, 1987; Pittaway, 1993;
Iraq	Pittaway, 1993;
Iran	de Freina & Witt, 1987; Pittaway, 1993.

Bionomics: Larvae on Solanaceae, including *Solanum* spp., in particular *S. tuberosum* (potato), *Jasminum*, *Atropa belladonna*.

Acherontia styx (Westwood, 1844) (Pl. 150, Fig. 7)

Sphinx styx Westwood, 1844, The Cabinet of Oriental Entomology; being a Selectioon of some of the Rarer and More Beautiful Species of Insects, Natives of India and the Adjacent Islands, the Greater Portion of which are now for the first Time Described and Figured 1844: 88, pl. 42. L. t.: East Indies

Note: Figured by Wiltshire (1990, fig. 37, adult), Pittaway (1993, pl. 5, fig. 5, adult). *A. styx* differs from *A. atropos* in the smaller size and less marked dark postmendian and terminal bands of the hindwings.

Distribution: Oriental. *A. styx* occurs in the tropics and subtropics of Asia, extending northwesternmost to Iraq. Distribution in the Western Palaearctic Region cf. Pittaway (1993, map 4).

Saudi Arabia	Wiltshire, 1980a; 1986; 1990; Pittaway, 1993;
Oman	Wiltshire, 1977b; Pittaway, 1993;
UAE	Legrain & Wiltshire, 1998; Pittaway, 1993;
Yemen	Hampson, 1896; Rebel, 1907;
Iraq	Wiltshire, 1957; 1990; Pittaway, 1993;
Iran	Pittaway, 1993.

Bionomics: Bivoltine in Iraq, between May and October. Larvae on *Duranta*, *Cucurbita, Lycium, Vitex, Tecoma, Clerodendron, Withania* (Wiltshire, 1957; 1990).

Macropoliana asirensis Wiltshire, 1980

Macropoliana asirensis Wiltshire, 1980, Fauna of Saudi Arabia **2**: 188, pl. 1, fig. 3. L. t.: Saudi Arabia, Asir, Fadhaya

Note: Male genitalia figured by Wiltshire (1980, figs 3 a, b, adults).

Distribution: East Afro-Eremic, Endemic to the SW Arabian Peninsula.

Saudi Arabia	Wiltshire, 1980a, 1986, 1990; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Asir,1992-98 (Legrain, unpubl.);
Yemen	*70 (1).

Bionomics: *M. asirensis* is found in the *Olea*-zone of the Asir mountains. Larva on *Olea* (Wiltshire, 1990).

Subfamily Macroglossinae

Cephonodes hylas virescens (Wallengren, 1858) (Pl. 150, Fig. 8)
Potidea virescens Wallengren, 1858, Nye Fjäril-slägten. - Översigt af Kongligar Vetenskaps-Akademiens Förhandlingar **15**: 139. L. t.: [RSA] Caffraria orientali

Note: Figured by Carcasson (1968, pl. 5, fig. 1, 6, fig. 1, adults, pl. 17, fig. 1, genitalia), Wiltshire (1990, fig. 31, adult), Eitschberger *et al*., (2014, fig. 8, adult). *Cephanodes hylas* (Linnaeus, 1771) was described from the Oriental Region; the subspecies *cunnighami* (Walker, 1856), described from Australia, inhabits Northern Australia, Queensland and the island of Flores (Carcasson, 1968). The subspecies *virescens* is common throughout Subsaharan Africa, Madagascar and the Seychelles.

Distribution: Afrotropical-subtropical (Subsaharan). *C. hylas* is common throughout Subsaharan Africa, including Madagascar and the Seychelles (Carcasson, 1968).

Oman	Wiltshire, 1980b; 1990; *8/2011 (2);
Yemen	Wiltshire, 1983; 1990; Hampson, 1896; Rebel, 1907; Hacker *et al*., 2001; *36 (3); *48 (1); *56 (1); *58 (sc.); *60 (1); *65 (occ.); *66 (occ.); *67 (sc.);
North Africa	Carcasson, 1968 (Senegal); Eitschberger *et al*., 2014 (S. Algeria, Hoggar).

Bionomics: *C. hylas* occurs in most habitats with exception of extreme deserts and may often be seen feeding at flowers in full sunlight (Carcasson, 1968). Larvae on Rubiaceae shrubs and cause damage to coffee plants (Wiltshire, 1980).

Daphnis nerii (Linnaeus, 1758) (Pl. 150, Fig. 9)
Sphinx nerii Linnaeus, 1758, Systema Naturae (Edn. 10) **1**: 490. L. t.: [Europe]

Note: Figured by Wiltshire (1990, fig. 38, adult), Pittaway (1993, pl. 8, fig. 9, adult).

Distribution: Palaeotropical-subtropical. Ln the southern parts of the Palaearctic Region, *D.nerii* is migratory. Distribution in the Western Palaearctic Region cf. Pittaway (1993, map 25).

Saudi Arabia	Wiltshire, 1980a, 1986, 1990; 1964 (Bahrain); Shalaby, 1961; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Hejaz, 1997 (Legrain, unpubl.); Asir,1992-98 (Legrain, unpubl.); Pittaway, 1993;
Oman	Wiltshire, 1985; Pittaway, 1993; de Freina, 2013;
UAE	Legrain & Wiltshire, 1998; Pittaway, 1993;
Yemen	Butler, 1884; Hampson, 1896; Hacker *et al*., 2001 (*36 (sc.); *42 (1); *43 (3); *56 (1); *58 (f.c.); *59 (sc.); *60 (10); *66 (occ.); *67 (sc.);
North Africa	Wiltshire, 1948a (Egypt); de Freina & Witt, 1987; Pittaway, 1993; Lewandowski & Lewandowski-Krenz (2014) (Egypt);
Levante	Amsel, 1933; Pittaway, 1993;
Asia Minor	Pittaway, 1993;
Iraq	Wiltshire, 1957; Pittaway, 1993;
Iran	Pittaway, 1993.

Bionomics: Larvae on *Nerium*, *Vinca*, *Rhazya*.

Sphingonaepiopsis nanum (Boisduval, 1847) (Pl. 150, Fig. 10)
Pterogan nanum (Boisduval, 1847), Voyage dans l´Afrique australe, notamment dans le territoire de Natals dans celui des Cafres amazoulous et Makatisses et jusqu´au Tropique du Capricorne: 594. L. t.: Zululand
= *Lophura nana* Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collections of the British Museum **8**: 107-108. L. t.: [RSA] Port Natal

Note: Figured by Carcasson (1968, pl. 5, fig. 3, adult; pl. 13, fig. 8, pl. 14, fig 8, genitalia), Wiltshire (1990, fig. 39, adult), Pittaway (1993, pl. 9, fig. 12, adult), Eitschberger & Müller, 2014 (fig. 5, adult).

Distribution: Afrotropical-subtropical (Subsaharan). *S. nanum* is common throughout Subsaharan Africa from South Africa to East Africa and Arabia in the east and to Angola and Nigeria in the west (Carcasson, 1968). Distribution in the Western Palaearctic Region cf. Pittaway (1993, map 35).

Saudi Arabia	Wiltshire, 1980a, 1990; Pittaway, 1993;
Oman	Pittaway, 1993; *4/2009 (1);
Yemen	Butler, 1884; Hampson, 1896; Hacker *et al*., 1999; Hacker *et al*., 2001; *24 (1); *59 (1);
North Africa	Carcasson, 1968 (Nigeria); Eitschberger & Müller, 2014 (Central Mali, Dogon Plateau); Carcasson, 1968;

Iran	Pittaway, 1993.

Bionomics: *S. nanum* is a crepuscular species, frequently seen visiting flowers, inhabiting open habitats. Larvae on various Rubiaceae, including *Kohautia*, *Galium*, *Rubia*, *Jaubertia* (Pittaway, 1993).

Macroglossum stellatarum (Linnaeus, 1758)

Sphinx stellatarum Linnaeus, 1758, Systema Naturae (Edn. 10) **1**: 493. L. t.: [Europe]

Note: Figured by Wiltshire (1990, fig. 33, adult), Pittaway (1993, pl. 9, fig. 14, adult).

Distribution: Originally Oriental, occuring on the Indian Subcontinent to Indochina, but also in the southern half of the Palaearctic Region, northwards migratory. Distribution in the Western Palaearctic Region cf. Pittaway (1993, map 37).

Saudi Arabia	Wiltshire, 1980a; 1990; 1964 (Bahrain);
Oman	Wiltshire, 1977b; 1985; 1990; Pittaway, 1993; *1/2009 (f.c.);
UAE	Legrain & Wiltshire, 1998;
Yemen	
North Africa	Wiltshire, 1948a (Egypt); de Freina & Witt, 1987; Pittaway, 1993;
Levante	de Freina & Witt, 1987; Pittaway, 1993;
Asia Minor	de Freina & Witt, 1987; Pittaway, 1993;
Iraq	Wiltshire, 1957; Pittaway, 1993;
Iran	de Freina & Witt, 1987; Pittaway, 1993.

Bionomics: Larvae on Rubiaceae; in Iraq and Egypt on *Galium* (Wiltshire, 1948a; 1957).

Macroglossum trochilus (Hübner, [1823]) (Pl. 150, Fig. 11)

Psithyros trochilus Hübner, [1823], Sammlung exotischer Schmetterlinge **2**: pl. 158. L. t.: ([Africa] not stated

Note: Figured by Carcasson (1968, pl. 5, fig. 4, adult), Wiltshire (1990, fig. 34, adult), Eitschberger *et al*., 2014 (fig. 3, adult).

Distribution: Afrotropical-subtropical (Subsaharan). *M. trochilus* is distributed throughout Subsaharan Africa including the Comoro Islands, usually common everywhere.

Saudi Arabia	Wiltshire, 1982, 1986, 1990;
UAE	Wiltshire, 1986;
Yemen	Hampson, 1896; Warnecke, 1930a; Hacker *et al*., 1999; Hacker *et al*., 2001; *13 (1); *26 (1); *33 (2); *53 (occ.);
North Africa	Eitschberger *et al*., 2014 (S. Algeria, Hoggar); Eitschberger & Müller, 2014 (Central Mali, Dogon Plateau).

Bionomics: *M. trochilus* is frequently seen at flowers in full sunshine. Larvae on *Galium*.

Nephele xylina Rothschild & Jordan, 1910 (Pl. 150, Fig. 11)

Nephele xylina Rothschild & Jordan, 1910, Novitates Zoologicae **17**: 457. L. t.: [Kenya] Brit. East Africa, Kedai

Note: Figured by Carcasson (1968, pl. 6, fig. 13, adult; pl, 14, fig. 7, genitalia), Wiltshire (1990, fig. 43, adult).

Distribution: Afrotropical-subtropical (East African). *N. xylina* is restricted to East Africa (Somalia, Kenya, Ethiopia) and the southern Arabian Peninsula. In Saudi Arabia olny at great heights in the Asir mountains (Wiltshire, 1990).

Saudi Arabia	Wiltshire, 1982, 1986, 1990; Asir,1992-98 (Legrain, unpubl.);
Oman	Wiltshire, 1990; *4/2009 (1); *3/2010 (f.c.);
Yemen	Hacker *et al*., 2001; *42 (1); *44 (2);
North Africa	Carcasson, 1968 (Somalia, Ethiopia; Kenya).

Bionomics: *N. xylina* is a semi-desert species. Early stages unknown.

Nephele vau (Walker, 1856) (Pl. 150, Fig. 13)
Zonilia vau Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collections of the British Museum **9**: 197.
L. t.: unknown

Note: Figured by Carcasson (1968, pl. 6, fig. 16, adult), Wiltshire (1990, fig. 44, adult).

Distribution: Afrotropical-subtropical (Subsaharan). Common throughout most of Africa south of the Sahara, but rarer in southern Africa (Carcasson, 1968).

Saudi Arabia	Wiltshire, 1990; Asir,1992-98 (Legrain, unpubl.);
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001; 14 (1); *36 (5); *48 (1); *58 (2); *59 (11); *60 (13); *61 (1); *63 (1); *64 (2); *65 (1); *66 (4); *67 (1); *68 (8); *70 (3);
North Africa	Carcasson, 1968 (Eritrea; Kenya; Tanzania).

Bionomics: According to Wiltshire (1990), *N. vau* favours damper areas among *Olea* trees and thickets of *Carissa*, *Rhus, Euclea*, *Jasminum* and *Pistacia* along the upper escarpment in western Saudi Arabia.

Nephele accentifera (Beauvois, 1805) (Pl. 150, Fig. 14)
Sphinx accentifera Beauvois, 1805, Ins. Afr. Amer.: 264, L. t.: Africa

Note: Figured by Carcasson (1968, pl. 6, fig. 19, adult), Wiltshire (1990, fig. 45, adult), Hacker & Fibiger (2006, pl. 6, fig. 18, adult).

Distribution: Afrotropical-subtropical (Subsaharan). *N. accentifera* occurs throughout the Ethiopian Region, excluding Madagascar and the Cape (Carcasson, 1968).

Saudi Arabia	Wiltshire, 1982, 1986, 1990; Asir,1992-98 (Legrain, unpubl.);
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001; *24 (1); *34 (1); *36 (occ.); *39 (1); *48 (1); *56 (1); *58 (5); *59 (3); *60 (4); *68 (1);
North Africa	Carcasson, 1968 (Eritrea; Kenya; Tanzania; Ethiopia).

Hyles tithymali himyarensis Meerman, 1988 (Pl. 150, Fig. 15)
Hyles tithymali himyarensis Meerman, 1988, Entomologische Berichten, Amsterdam **48**: 61. L. t.: Jemen, Ma'abar, Dhamar

Note: Figured by Wiltshire (1986, figs 83, adult, fig. 82 - larva), Pittaway (1993, pl. 10, figs 6-12, adults). Taxonomic notes cf. Pittaway (1993).

Distribution: Saharo-Eremic. *Hyles tithymali* (Boisduval, 1832) ranges in several subspecies from the Canary Isles and Madeira throughout North Africa (except the south Mediterranean coast) to Egypt and the SW Arabian Peninsula.

The closely related Irano-Turanian congener *H. euphorbiae* (Linnaeus, 1758) occurs further north from the Palaearctic in Europe to Near and Middle East, N India and Chine. Distribution of both species in the Western Palaearctic Region cf. Pittaway (1993, maps 38, 39, 39d).

Saudi Arabia	Wiltshire, 1982, 1986, 1990; Hejaz, 1997 (Legrain, unpubl.);
UAE	Wiltshire, 1952b;
Yemen	Wiltshire, 1986, 1990; Warnecke, 1934; Meerman, 1988; 1991; Pittaway, 1993; Hacker *et al*., 2001; *31 (3); *32 (2); *33 (4); *49 (larvae); *51 (1);
North Africa	Wiltshire, 1948a (Egypt); de Freina & Witt, 1987 (from the Canary Isles and Morocco to Egypt, also in the oases of the northern Sahara region); Pittaway, 1993; Lewandowski & Lewandowski-Krenz (2014) (Egypt);
Levante	Amsel, 1933; Wiltshire, 1948a (Sinai).

Bionomics: Larvae on *Euphorbia* spp., especially *Euphorbia cyparissioides*.

Hyles livornica (Esper, 1780) (Pl. 150, Fig. 16)
Sphinx livornica Esper, 1780, Die Schmett. in Abb. nach der Natur **2** (2): 42, pl. VIII, fig. 4, pl. XLVI, figs. 4-6 (larvae), c. f. 2 (1): 87, 88, 196 ("in fränkischen Gegenden"; Müllhausen/ "Le Livornien")

Note: Figured by Wiltshire (1990, fig. 32, adult), Pittaway (1993, pl. 12, figs 10, 11, adults).

Distribution: Palaeotropical-subtropical. In the southernmost part of the Palaearctic Region, *H. livornica* is usually migratory. Distribution in the Western Palaearctic Region cf. Pittaway (1993, map 50).

Saudi Arabia	Wiltshire, 1980a, 1952b, 1990; 1964 (Bahrain); Kiriakoff, 1960; Shalaby, 1961; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Hejaz, 1997 (Legrain, unpubl.); Asir,1992-98 (Legrain, unpubl.); Pittaway, 1993; Al-Houty, 2000 (Kuwait);
Oman	Wiltshire, 1985, 1952b; de Freina, 2013; *9/2011; "Oman Süd, Dhofar Region, Mirbat östlich, Küstenregion, 21m, 29.x.-8.xi.2013 (leg. S. Lewandowski)" (coll. S. Lewandowski);
UAE	Legrain & Wiltshire, 1998;
Yemen	Butler, 1884; Hampson, 1896; Warnecke, 1934; Bros, 1965; Hacker et al., 1999; Hacker *et al*., 2001; *10 (occ.); *11 (occ.); *12 (1); *16 (occ.); *19 (1); *20 (1); *31 (2); *32 (sc.); *33 (occ.); *36 (1); *37 (4); *38 (5); *41 (1); *45 (3); *47 (1); *54 (2); *56 (2);
North Africa	Wiltshire, 1948a (Egypt); Carcasson, 1968 (Somalia; Kenya; Tanzania; Ethiopia); Pittaway, 1993; Lewandowski & Lewandowski-Krenz (2014) (Egypt);
Levante	Amsel, 1933; Pittaway, 1993;
Asia Minor	de Freina & Witt, 1987; Pittaway, 1993;
Iraq	Wiltshire, 1957; Pittaway, 1993;
Iran	de Freina & Witt, 1987; Pittaway, 1993.

Bionomics: Larvae on *Calligonum*, *Rumex*, *Asphodelus* (Walker & Pittaway, 1987).

Basiothia medea (Fabricius, 1781) (Pl. 150, Fig. 17)

Sphinx medea Fabricius, 1781, Species Insectorum Exhibentes Eorum Differentias Specificas, Synonyma Auctorum, Loca Natalia, Metamorphosin Adiestis, Observationibus, Descriptionibus **2**: 143. L. t.: Habitat in Africa aequinoctiali

Note: Figured by Carcasson (1968, pl. 7, fig. 10, adult), Wiltshire (1990, fig. 51, adult), Eitschberger & Müller, 2014 (figs 9, 10).

Distribution: Afrotropical-subtropical (Subsaharan). *B. medea* is common in open habitats throughout the Ethiopian Region, including Madagascar; probably absent from the equatorial forest belt (Carcasson, 1968).

Saudi Arabia	Wiltshire, 1990;
Yemen	Butler, 1884; Hampson, 1896; Warnecke, 1934; Bros, 1965; Hacker *et al*., 1999; Hacker *et al*., 2001; 5 (1); *33 (1); *62 (1); *68 (1);
North Africa	Carcasson, 1968 (Eritrea; Ethiopia; Kenya; Tanzania); Eitschberger & Müller, 2014 (Central Mali).

Bionomics: Larvae on *Dioda, Spermacoce, Pentas, Pentanisia, Spermacoce* spp. Early stages described by Townsend (1936), who gives *Pentanisia schweinfurtii* as a foodplant.

Basiothia socotrensis (Rebel, 1899) (Pl. 150, Fig. 18)

Metopsilus Socotrensis Rebel, 1899, Anzeiger der kaiserlichen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Classe **37**: 360. L. t.: [Yemen] Sokotra, Háulaf, vor Anker

Note: Figured by Rebel (1907, pl. 1, fig. 10, adult), Carcasson (1968, pl. 7, figs 13, 17 adults; pl. 15, figs 5, 6, 14, genitalia). According to Carcasson (1968) the taxon *diyllus* (Fawcett, 1915), described from [Kenya] Kedai, specifically belongs to *B. socotrensis*.

Distribution: Afrotropical-subtropical (East African). *B. socotrensis* is restricted to East Africa.

Socotra	Rebel, 1899; 1907;
North Africa	Carcasson, 1968 (Ethiopia; Kenya).

Bionomics: Inhabits dry areas; bionomics unknown.

Hippotion celerio (Linnaeus,1758) (Pl. 151, Fig. 1)

Sphinx celerio Linnaeus,1758, Systema Naturae (Edn. 10) **1**: 491. L. t.: [Europe]

Note: Figured by Carcasson (1968, pl. 8, fig. 1, adult), Wiltshire (1990, fig. 41, adult), Pittaway (1993, pl. 13, fig. 9, adults).

Distribution: Palaeotropical-subtropical, in the southernmost parts of the Palaearctic Region, *H. celerio* is usually migratory. Distribution in the Western Palaearctic Region cf. Pittaway (1993, map 55).

Saudi Arabia	Wiltshire, 1980a, 1986, 1990; Kiriakoff, 1960; Shalaby, 1961; Pittaway, 1993; El-Hawagry *et al*., 2013 (Al-Baha Prov.); Hejaz, 1997 (Legrain, unpubl.); Asir,1992-98 (Legrain, unpubl.); Al-Houty, 2000 (Kuwait);
Oman	Wiltshire, 1985; 1990; Pittaway, 1993; de Freina, 2013; "Oman Süd, Dhofar Region, Mirbat östlich,

	Küstenrgion, 21m, 29.x.-8.xi.2013 (leg. S. Lewandowski)“ (coll. S. Lewandowski);
UAE	Legrain & Wiltshire, 1998;
Yemen	Butler, 1884; Hampson, 1896; Warnecke, 1930a; 1934; Wiltshire, 1986; Hacker et al., 1999; Hacker *et al*., 2001; *3b (1); *5 (occ.); *14 (1); *22 (f.c.); *31 (f.c.); *32 (f.c.); *33 (f.c.); *34 (sc.); *36 (f.c.); *37 (1); *39 (sc.); *41 (3); *42 (3); *43 (1); *45 (3): *47 (1); *49 (occ.); *51 (1); *53 (f.c.); *54 (f.c.); *55 (2); *56 (4); *58 (sc.); *59 (occ.); *60 (4); *61 (6); *62 (f.c.); *63 (2); *65 (sc.); *66 (sc.); *67 (f.c.); *68 (ab.); *69 (occ.); *70 (occ.); M10);
Socotra	Hampson, 1903; Rebel, 1907;
North Africa	Wiltshire, 1948a (Egypt); de Freina & Witt, 1987; Pittaway, 1993;
Levante	de Freina & Witt, 1987; Pittaway, 1993;
Asia Minor	de Freina & Witt, 1987;
Iraq	Wiltshire, 1957; Pittaway, 1993;
Iran	Pittaway, 1993.

Bionomics: Early stages described by Townsend (1936). Larvae on *Oxygonum atriplicifolium* and several species of Vitaceae, According to Pittaway (1993), hostplants are principally *Vitis* and *Parthenocissus* spp., but he also lists many other plants.

Hippotion eson (Cramer, 1779) (Pl. 151, Fig. 2)

Sphinx eson Cramer, 1779, De Uitlandsche Kapellen voorkomende in de waereld - deelen Asia, Africa en America **2**: 57, pl. 226, fig. C. L. t.: Kaap de Goede Hoop; Kust van Coromandel

Note: Figured by Carcasson (1968, pl. 8, fig. 3, adult), Wiltshire (1990, fig. 42, adult), Eitschberger *et al*., 2014 (figs 14, 15, adult). *H. eson* was mixed with *H. gracilis* (Butler, 1875); for the separation of boths species cf. Eitschberger (2006). Both species occur sympatrically.

Distribution: Afrotropical-subtropical (Subsaharan). *H. eson* is very common in most habitats throughout Subsaharan Africa, including Madagascar and the Seychelles (Carcasson, 1968).

Saudi Arabia	Wiltshire, 1982; 1990; Asir,1992-98 (Legrain, unpubl.);
Yemen	Hampson, 1896; Hacker *et al*., 1999; Hacker *et al*., 2001; *4 (1); *32 (occ.); *33 (sc.); *36 (1); *48 (f.c.); *54 (2); *55 (3); *58 (sc.); *60 (5); *62 (occ.); *66 (sc.);*67 (sc.);*68 (sc.); *70 (sc.);
North Africa	Carcasson, 1968; Eitschberger *et al*., 2014 (S-Algeria: Hoggar); Eitschberger & Müller, 2014 (Central Mali).

Bionomics: Larvae also feed on vine foliage (Wiltshire, 1990).

Hippotion gracilis (Butler, 1875)

Chaerocampa gracilis Butler, 1875, Proceedings of the Zoological Society of London 1875: 8, pl. 2, fig. 2. L. t.: Congo; Sierra Leone

Note: Cf. the preceding species. According to the specification done by Eitschberger (2006), the figure shown by Wiltshire (1990, fig. 42) shows *H.gracilis* instead of *H. eson*.

Distribution: Afrotropical-subtropical (Subsaharan). *H. gracilis* is found on Madagascar, Réunion, Grande Comoro, Mauritius, and in Congo, Cameroon, Togo and Egypt (Gebel Elba).

North Africa	Eitschberger, 2006 ([Egypt], Gebel Elba).

Bionomics: Unknown.

Hippotion aporodes Rothschild & Jordan, 1912 (Pl. 151, Fig. 3)

Hippotion aporodes Rothschild & Jordan, 1912, Novitates Zoologicae **19**: 135. L. t.: [Ghana] Gold Coast, Bibianaha

Note: Figured by Carcasson (1968, pl. 8, fig. 2, adult; pl. 15, figs 2, 15, genitalia). The Yemeni species corresponds exactly with the figures given by Carcasson (1968) and differs from the similar species *H. celerio*, *H. eson* and *H. osiris* (Dalman, 1823).

Distribution: Afrotropical-subtropical (Subsaharan). *H. aporodes* is known from the tropical forests from Ivory Coast to Congo and East Africa (Kenya; Uganda; Tanzania). First records for the fauna of Yemen and the Arabian Peninsula.

The similar *H. osiris* (figured by Carcasson, 1968, pl. 8, fig. 4, adult; Pinhey, 1975, fig. 634, adult; de Freina &

Witt, 1987, pl. 45, fig. 10, adult) is common throughout most of the Ethiopian Region, including Madagascar and the Seychelles, with occasional vagrants in North Africa and even Spain (Carcasson, 1968; de Freina & Witt, 1987). It has not been found in Yemen among the numerous specimens of *H. celerio*.

Yemen	*36 (4); 58 (4);
North Africa	Carcasson, 1968 (Kenya; Uganda; Tanzania).

Bionomics: Unknown.

Hippotion balsaminae (Walker, 1856) (Pl. 151, Fig. 4)

Chaerocampa balsaminae Walker, 1856, List of the Specimens of Lepidopterous Insects in the Collections of the British Museum **8**: 138. L. t.: [RSA] Port Natal

Note: Figured by Carcasson (1968, pl. 8, figs 7, adult), Eitschberger *et al*., 2014 (figs 10, 13, adults). The report by Warnecke (1934) might refer to the preceding species.

Distribution: Afrotropical-subtropical (Subsaharan). *H. balsaminae* is common in Subsaharan Africa, including Madagascar.

Yemen	Warnecke, 1934;
North Africa	Carcasson, 1968 (Sudan; Kenya; Tanzania; Uganda); Eitschberger *et al*., 2014 (Kenya, Uganda; Tanzania; Sudan; S-Algeria: Hoggar); Eitschberger & Müller, 2014 (Central Mali).

Bionomics: Unknown.

Hippotion rosae rosae (Butler, 1882) (Pl. 151, Figs 5, 6)

Darapsa rosae Butler, 1882, Annals and Magazine of Natural History (Series 5) **10**: 433. L. t.: [Mozambique] Delagoa Bay, Africa
Hippotion moorei Jordan, 1926, Novitates Zoologicae **33**: 383. L. t.: [Tanzania] Tanganyika Territory, Mwanza, Victoria Nyanza
Hippotion moorei canens Jordan, 1926, Novitates Zoologicae **33**: 383. L. t.: Abyssinia: Dalada; Somaliland: Malka Re

Note: Figured by Carcasson (1968, pl. 8, figs 9, 11, adults; pl. 15, fig. 1, pl. 16, fig. 5, genitalia [*moorei*]), Wiltshire (1990, figs 46, 47, adults). The Yemeni specimens are like the east African ones, while those on Socotra are much darker. The conspecificy of the taxa *moorei* Jordan and *moorei canens* Jordan is tentative (cf. Wiltshire, 1990).

Distribution: Afrotropical-subtropical (Subsaharan). *H. rosae* inhabits dry areas from South-West Africa to Mozambique and northwards to East Africa (Carcasson, 1968) and SW Arabia.

Saudi Arabia	Wiltshire, 1983; 1990; Asir,1992-98 (Legrain, unpubl.);
Yemen	Wiltshire, 1990; Hacker *et al*., 1999; Hacker *et al*., 2001; *24 (1); *27 (1); *27 (1); *34 (occ.); *35 (1); *36 (15); *38 (3); *39 (1); *48 (1); *55 (sc.); *56 (sc.); *58 (sc.); *59 (3); *61 (3); *68 (5);
North Africa	Carcasson, 1968 (Somailia; Ethiopia; Tanzania; Kenya).

Bionomics: An insect of rocky wadis with shrubby vegetation (Wiltshire, 1990). Larvae on *Cissus*.

Hippotion rosae guichardi Carcasson, 1968

Hippotion rosae guichardi Carcasson, 1968, Journal of the East Africa Natural History and National Museum **26** (3): 125, pl. 10, figs 1, 2, pl. 15, fig. 4. L. t.: [Yemen [Socotra, Hadibo Plains

Note: Figured by Carcasson (1968, pl. 10, figs 1, 2, adults; pl. 15, fig. 4, genitalia), Wiltshire (1990, figs 46, 47, adults).

Distribution: Subspecies endemic to Socotra.

Socotra	Carcasson, 1968.

Hippotion pentagramma Hampson, 1910 (Pl. 151, Figs 7, 8)

Hippotion pentagramma Hampson, 1910, Annals and Magazine of Natural History (8) **5**: 455. L. t.: [Ethiopia] Abyssinia; [Somalia] Daladu, Somaliland

Note: Figured by Carcasson (1968, pl. 7, figs 15, adult), Wiltshire (1990, fig. 50, adult).

Distribution: East Afro-Eremic. *H. pentagramma* inhabits dry areas from Ethiopia and Somalia to the SW

Arabian Peninsula.

Saudi Arabia	Wiltshire, 1983, 1990; Asir,1992-98 (Legrain, unpubl.);
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001; 7 (2); *24 (2); *27 (occ.); *34 (oc.); *36 (22); *38 (2); *39 (8); *40 (sc.); *55 (sc.); *56 (2); *58 (ab.); *59 (f.c.); *60 (7); *61 (5); *65 (1); *66 (occ.); *69 (occ.);
North Africa	Hampson,1910 (Somalia; Ethiopia); Jordan, 1916 (Somalia); Carcasson, 1968 (Somalia; Ethiopia).

Hippotion rebeli Rothschild & Jordan, 1903 (Pl. 151, Figs 9, 10)

Hippotion Rebeli Rothschild & Jordan, 1903, Novitates Zoologicae **9**: 761. L. t.: Sudan, Bahr el Seraf

Note: Figured by Carcasson (1968, pl. 7, figs 16, adult), Wiltshire (1990, figs 48, 49, adults).

Distribution: East Afro-Eremic. *H. rebeli* is found in dry areas from Uganda, Tanzania, Kenya, Ethiopia and Somalia to the SW Arabian Peninsula. Very variable species, according to Carcasson (1968) different from the equally variable East African *H. roseipennis* (Butler, 1882) in the shorter, more sharpely upcurved harpe and a long, curved apical spine on the adeagus.

Saudi Arabia	Wiltshire, 1980a, 1990; Asir,1992-98 (Legrain, unpubl.);
Oman	Wiltshire, 1980a, 1990; de Freina, 2013; "Oman Süd, Dhofar Region, Mirbat östlich, Küstenregion, 21m, 29.x.-8.xi.2013 (leg. S. Lewandowski)" (coll. S. Lewandowski); "Jebel al Qamar, 2000m, 5.xi.2013 (leg. S. Lewandowski)" (coll. S. Lewandowski);
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001 (*7 (1); *11 (1); *22 (occ.); *24 (f.c.); *27 (sc.); *31 (occ.); *34 (occ.); *35 (2); *36 (occ.); *37 (1); *38 (1); *39 (10); *42 (2); *43 (1); *45 (1); *47 (2); *48 (1); *53 (4); *54 (2); *55 (8); *56 (2); *58 (ab.); *59 (f.c.); *60 (7); *61 (19); *62 (occ.); *63 (1); *64 (1); *65 (10); *66 (f.c.); *67 (f.c.); *68 (f.c.); *69 (sc.); *70 (sc.); M8 (1);
North Africa	Berio, 1948 (Eritrea); Carcasson, 1968 (Somalia; Sudan; Eritrea; Ethiopia).

Bionomics: Larvae polyphagous on *Rumex, Calligonum, Asphodelus* (de Freina, 2013).

Euchloron megaera asiatica Haxaire & Melichar, 2009 (Pl. 151, Figs 11, 12)

Euchloron megaera asiatica Haxaire & Melichar, 2009, The European Entomologist **2** (1-2**)**: 1. L. t.: Yemen
= *Euchloron megaera cadioui* Saldaitis & Ivinskis, 2010, Esperiana **15**: 419, pl. 59, figs 1-8, gen., figs 1-4. Yemen, Al Hudaydah, Jebel Burra, 25 km se Bajil, 600m

Note: *Euchloron megaera* (Linnaeus, 1758) was figured by Carcasson (1968, pl. 7, figs 5, adult), Saldaitis & Ivinskis (2010, pl. 59, 8 figs; text figs 1-4, male and female genitalia) and in numerous further papers. The subspecific taxon *cadioui* Saldaitis & Ivinskis, 2010 for the Arabian populations was synonymized by Haxaire, J. (2010) to *asiatica* Haxaire & Melichar, 2009, described a few months earlier.

Material studied for comparison:

Ethiopia	(gen.prep. H. Hacker 17820♂);
Kenya	(gen.prep. H. Hacker 17821♂, 17825♂);
Nigeria	(gen.prep. H. Hacker 17822♂).

Distribution: Afrotropical-subtropical (Subsaharan). Nominotypical *E. megaera* occurs throughout Subsaharan Africa; subspecies *lacordairei* Boisduval, 1833 is known from Madagascar, Réunion and Mauritus.

Saudi Arabia	Saldaitis & Ivinskis, 2010; Asir,1992-98 (Legrain, unpubl.);
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001; *13 (1); *33 (2); *34 (1); * 35 (1); *36 (ab.); *55 (1); *56 (2); *58 (ab.); *60 (7); *62 (1) *66 (1); *67 (2); *68 (occ.); *69 (occ.); Haxaire & Melichar, 2009; Saldaitis & Ivinskis, 2010; Haxaire, 2010.

Bionomics: Larvae on *Ampelopsis, Vigna, Cissus* spp.

Temnora pseudopylas (Rothschild, 1894) (Pl. 151, Fig. 13)

Lophuron pseudopylas Rothschild, 1894, Novitates Zoologicae **1**: 71. L. t.: unknown

Note: Figured by Carcasson (1968, pl. 6, figs 7, adult).

Distribution: Afrotropical-subtropical (Subsaharan). *L. pseudopylas* occurs throughout Subsaharan Africa.

Saudi Arabia	Asir,1992-98 (Legrain, unpubl.);
Yemen	Hacker *et al*., 1999; Hacker *et al*., 2001; *7 (occ.); *13 (1); *14 (1); *33 (sc.); *40 (sc.); *48 (sc.); *54 (1);

*55 (1); *62 (3); *63 (2); *64 (8): *66 (10); *67 (2); *68 (18);

Bionomics: Larvae on the Kenyan coast on *Pentas bussei* Krause (Rubiaceae) (Carcasson, 1968).

Superfamily Geometroidea Leach, 1815

Family Uraniidae Leach, [1815]

Dirades theclata (Guenée, 1857) (Pl. 151, Fig. 14)

Erosia theclata Guenée, 1857, Histoire Naturelle des Insectes. Species Général des Lépidoptères, Tome **10**: 36. L. t.: Sierra Leone

= *Dirades binotata* Walker, 1866, List of the Specimens of Lepidopterous Insects in the Collections of the British Museum **35**: 1650. L. t.: [Sri Lanka] Ceylon

Note: Figured by Hacker *et al*., (2004, pl. 6, fig. 21), Guillermet (2006, pl. 10, fig. 11, adult; text figs c, d, male and female genitalia).

Distribution: Palaeotropical-subtropical. *D. theclata* is widely distributed throughout Subsaharan Africa, including Seychelles, Comores, Réunion, Maurice and Madagascar, and equally so in the Oriental Tropics: India; Sri Lanka; Myanmar.

Yemen Hacker, Fibiger & Legrain, 2002; *36 (6).

Family Geometridae Leach, [1815]

by Axel Hausmann, Dirk Stadie & Ralf Fiebig

Subfamily Desmobathrinae

Genus ***Ozola*** Walker, 1861

Ozola minuta Wiltshire, 1990 (Pl. 152, Figs 1 a-d)
Ozola minuta Wiltshire, 1990, An illustrated, annotated catalogue of the Macro-Heterocera of Saudi Arabia. – In: Büttiker, W. & Krupp, F. (Eds.). Fauna of Saudi Arabia. - Fauna of Saudi Arabia **11**: 91–250. L. t.: Saudi Arabia: Gizan, Wadi Damad, holotype ♂ (NHMB)

Notes: Small and poorly known species. Probably often overlooked. Description of the female only recently (Hausmann 1999).

Distribution: East Afro-Eremic. The species was reported from Saudi Arabia and Yemen.

Saudi Arabia	Wiltshire 1990; Hausmann 1999;
Yemen	Hausmann 1999, 2006; Hacker & Hausmann 1999;

Bionomics: The host plant is unknown, but most probably a member of the plant family Verbenaceae, as it is reported for some congeneric species (Robinson et al. 2014).

Genus ***Conolophia*** Warren, 1894

Conolophia conscitaria conscitaria (Walker, 1861) (Pl. 152, Figs 2 a, b)
Panagra conscitaria Walker, 1861, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum. Part XXIII.– Geometrites (continued). - 23: i–iv, 986. L. t.: [Democratic Republic of] Congo, holotype ♂ (BMNH), leg. J. Richardson.

Notes: Subfamily assignment (ssp. *pontias* Prout, 1929) awaiting further phylogenetic study.

Distribution: Afrotropical-subtropical (Ethiopian). The species is widespread in Sub-Saharan Africa. So far recorded from the RSA, Angola, Democratic Republic of Congo, Ethiopia, Kenya, Tanzania, Zambia and La Réunion. On the Arabian Peninsula only known from northern Oman and Yemen.

Yemen	Hacker & Hausmann 1999; Hausmann 1999, 2006;
Oman	Wiltshire 1975; Wiltshire 1977b; 1♂, 3♀ 1/2010; 2♂, 1♀ 1/2011;
East Africa	Wiltshire 1977b; Pinhey 1975;

Bionomics: In Jebel Akhdar (northern Oman) the species was recorded at the *dodonaea*-zone between 1,800-2,100 m, a very dry and open sclerophyllous woodland dominated by *Dodonaea viscosa*, *Olea cuspidata*, *Juniperus excelsa*, *Acacia gerardii* and *Sideroxylon mascatense*. The host plant is unknown.

Subfamily Geometrinae

Tribe **Pseudoterpnini** Warren, 1893

Genus ***Pingasa*** Moore, [1887]

Pingasa rhadamaria signifrontaria (Mabille, 1893) (Pl. 152, Figs 3 a-c)
Hypochroma signifrontaria Mabille, 1893, Descriptions des Lépidoptères nouveaux. - Annales de la Société entomologique de Belgique 37: 65. L. t.: [Comoros], Mayotte, holotype ♂ (BMNH).

Notes: For data on genetic variation see Aistleitner & Hausmann (2015).

Distribution: Afrotropical-subtropical (Ethiopian). Widespread in Sub-Saharan Africa. Confirmed vouchers are reported from Cape Verde,Ghana, Gambia, Burkina Faso, Mali, Ivory Coast, Sierra Leone, Kenya, RSA, Zambia, Tanzania, Zimbabwe and Madagascar. On the Arabian Peninsula found in Saudi Arabia and Yemen (Aistleitner & Hausmann 2015).

Saudi Arabia	Wiltshire 1986;
Yemen	Hacker & Hausmann 1999; Hausmann 1999, 2006;

Bionomics: In East Africa the larvae have been found on *Ziziphus jujuba* and *Z. mauretanica* (Rhamnaceae) (Robinson et al. 2014).

Pingasa lahayei multispurcata Prout, 1913 (Pl. 152, Figs 4 a-f)

Pingasa lahayei multispurcata Prout, 1913, Contribution to a knowledge of the subfamilies Oenochrominae and Hemitheinae of Geometridae.- Novitates Zoologicae 20: 397. L. t.: North Pakistan, Rawal Pindi, holotype ♀ (BMNH).

Distribution: A species with probably two disjunct areas of distribution (Saharo-Sindian, Ethiopian). The eastern subspecies *multispurcata* Prout, 1913 is reported from Yemen and Jordan eastwards to North-West India. On the Arabian peninsula it is also widely distributed (UAE, northern Oman, Dhofar, Saudi Arabia, Yemen). Furthermore the nominate subspecies is known to occur from southern Spain and the Maghreb countries to Sub-Saharan Africa down to Zimbabwe, RSA and Swasiland (Hausmann 2001, pers. observ.).

Saudi Arabia	Wiltshire 1980a, 1990; Hausmann 1996a,b;
Yemen	Hacker & Hausmann 1999; Hausmann 1999, 2006;
Oman	Wiltshire 1985; Hausmann 2009; 1♂, 1♀ 1/2009; 1♂ 4/2009; 1♂ 1/2010; 8♂, 9♀ 4/2010 reared; 1♂ 1/2011;
UAE	Legrain & Wiltshire 1998; Hacker & Hausmann 1999; Hausmann & Skou 2008;
Bahrain	Wiltshire 1964;
North Africa	(nominotypical ssp.) Prout 1934a; Rungs 1981; Speidel & Hassler 1989; Lehmann & Hoppe 2011;
East Africa	
Europe	(nominotypical ssp.) Hausmann 2001;

Bionomics: The ssp. *multispurcata* inhabits semideserts, oases and wadis as well. The nominate occurs mainly in dry savannah. Plurivoltine species with the ability of dormancy during dry or cold periods in the pupal stage (pers. observ.). For Iraq reported three generations (Wiltshire 1957). Confirmed host plants are *Rhus tripartita* (Anacardiaceae) and *Ziziphus lotus* (Rhamnaceae) (Algeria: Prout 1934a), one problematic record on *Salix* spec. (Wiltshire 1980). The African subspecies was recorded on *Sclerocarya birrea* (Anacardiaceae) (Duke & Duke 1998). Reared with *Rhus typhina* (Anacardiaceae), pupation takes place in a scattered cocoon between the leaves. Overwintering stage is the pupa. The pupa is able to resist winter temperatures fairly near zero degrees for a longer time (pers. observ.). Mature larva (Dhofar) fig. , pupa fig.

Description of larva: The freshly ermerged larva (L1) is of green colour and very lazy. The head is yellowish green. The mature larva (L5) is blunt and 28-32 mm long. The body is greyish-green covered with a finely grained cuticula. The dorsal pattern is consisting of fine, yellowish-green lines. The latter form a caudad directed, V-shaped pattern. The stigmatal line is whitish, increasing towards caudad in both, intensity and wideness. Underside is markedly lighter. The median line is well developed, with pairs of forward slashes laterally on each segment. The line and the slashes are fine and of whitish-green colour. The head is greyish-green like the ground colour.

Pingasa cornivalva Wiltshire, 1982 (Pl. 153, Figs 1 a-c)

Pingasa cornivalva Wiltshire, 1982, Insects of Saudi Arabia Lepidoptera: Fam. Cossidae, Zygaenidae, Sesiidae, Lasiocampidae, Bombycidae, Sphingidae, Thaumetopoidae, Thyretidae, Notodontidae, Geometridae, Lymantriidae, Noctuidae, Ctenuchidae (Part 2). - Fauna of Saudi Arabia **4**: 281, fig. 7b. L. t.: [Saudi Arabia], Asir, Bani Rizam, holotype ♂ (NHMB),12. IV.[19]80 leg. Büttiker, coll. BMNH.

Distribution: East Afro-Eremic. Saudi Arabia and Yemen.

Saudi Arabia	Wiltshire 1982, 1990, Hacker & Hausmann 1999;
Yemen	Hausmann 1999, 2006;

Bionomics: Unknown.

Tribe **Hemistolini** Inoue, 1961

Genus ***Gnophosema*** Prout, 1912

Gnophosema isometra isometra Warren, 1888 (Pl. 153, Figs 2 a, b)

Gnophos isometra Warren, 1888, On Lepidoptera collected by Major Yerbury in Western India, in 1886 and 1887. - Proceedings of the Zoological Society of London 1888: 321. L. t.: Western India [Pakistan]: Akher, holotype ♂ (BMNH).

Notes: *G. isometra* was described from north-western India, replaced in the Iran by subspecies *mekrana*

Brandt, 1941. Sister species *Gnophosema palumba* Brandt, 1938 from northern Iraq to southern Iran. The status of ssp. *hansoni* Ebert, 1965 needs further study.

Distribution: Omano-Makranian. Northern Oman, UAE and southern Iran.

Oman	Wiltshire 1977b; Hacker & Hausmann 1999; 2♂ 1/2010;
UAE	Legrain & Wiltshire 1998; Hacker & Hausmann 1999;
Asia minor	Replaced by *Gnophosema palumba kurdistana* Ebert, 1968 in northern Iraq;
Iran	Brandt 1941;
Afghanistan	Replaced by *Gnophosema isometra hansoni* Ebert, 1965;

Bionomics: The host plant is unknown. For the closely related *G. palumba Amygdalus spartioides* (Rosaceae) was reported as natural host (Wiltshire 1943a). The species seems to be everywhere rare and local.

Gnophosema leucites Wiltshire, 1980 (Pl. 153, Figs 3 a, b)

Gnophosema isometra leucites Wiltshire, 1980, The larger moths of Dhofar and their zoogeographic composition. - Journal of Oman Studies Special Rep. **2**:191, fig. 1. L. t.: Oman, Dhofar Province, Ayun pools, holotype ♀ (BMNH).

Notes: *G. leucites* is a distinct species and not a subspecies of *G. isometra* (cf. Hausmann 2009).

Distribution: East Afro-Eremic. Saudi Arabia and Dhofar (southern Oman).

Saudi Arabia	Wiltshire 1986; Hacker & Hausmann 1999;
Oman	Wiltshire 1980b, 1990; Hacker & Hausmann 1999; Hausmann 2009; 1♂ 4/2009;
Iran	[here replaced by sister species *G. isometra* (see notes)]

Bionomics: The species was observed very locally in the mountains of Dhofar at a hot and dry, south-facing, steep escarpment of lime stone sediments with succulents, many herbs and scattered *Boscia arabica*-, *Commiphora*- and *Boswellia sacra*- trees (pers. observ.).

Genus ***Victoria*** Warren, 1897

Victoria omanensis (Wiltshire, 1981) (Pl. 153, Figs 6 a, b)

Celidomphax omanensis (Wiltshire, 1981, The Larger Moths of Dhofar and their Zoogeographic Composition.- Journal Oman Studies Rep. **2**: 191. L. t.: [Oman], Dhofar Ayun pools: holotype ♀ (BMNH), 12.X.1977, leg. Guichard.

Notes: *Victoria fifensis* Wiltshire, 1994 (from western Saudi Arabia and Yemen) and *Victoria eremita* Hausmann, 1993 from Israel and north-eastern Egypt at low genetic distances but with constant differences in internal morphology (Hausmann 2009). Transferred to genus *Victoria* in Hausmann (1993) and Wiltshire (1994).

Distribution: Unclear probably East Afro-Eremic. The species is so far known from Dhofar and northern Oman.

Oman	Wiltshire 1980b, 1986, 1994; Hacker & Hausmann 1999; Hausmann 2009;

Bionomics: Unknown. Larval host plant probably epiphytic Loranthaceae as it is characteristic for the genus (Hausmann 1993, 1997).

Victoria fifensis Wiltshire, 1994 (Pl. 153, Figs 5 a, b)

Victoria fifensis Wiltshire, 1994, Fauna of Saudi Arabia **14**: 155, plate 1, figs. 5-6. L. t.: Tarima near Najran, West Saudi Arabia, holotype ♂ (BMNH).

Distribution: East Afro-Eremic. Saudi Arabia and Yemen.

Saudi Arabia	Wiltshire 1980b, 1986, 1990, 1994; Hausmann 1996a, b, 1997; Hacker & Hausmann 1999;
Yemen	Hacker & Hausmann 1999; Hausmann 1999;

Bionomics: Unknown. Larval host plant probably epiphytic Loranthaceae as it is characteristic for the genus.

Victoria plantei Herbulot, 1977 (Pl. 153, Figs 4 a, b)

Notes: Close relationship to *Victoria eremita* recently confirmed by DNA barcodes. One barcoded specimen from Jordan.

Distribution: Endemic to the Levant.

Saudi Arabia Wiltshire 1990 (misidentification, referring to sister species *V. fifensis*);
Levant Herbulot (1977); Hausmann (1993);

Bionomics: Unknown. Larval hostplant probably *Loranthus acaciae* (epiphytic on *Acacia* and *Ziziphus*) which was reported as host for the larva of the sister species *V. eremita* in southern Israel (Hausmann 1993; 1997).

Victoria eremita Hausmann, 1993

Victoria eremita Hausmann, 1993, Revision of the Palearctic species of the genus Victoria Warren, 1897 (Lepidoptera, Geometridae). Spixiana **16** (1): 55, figs 2,3,6,13,14. L. t.: [Israel]: Yotvata, holotype ♂ (TAU).

Distribution: East Mediterranean. So far, known only from the Levant (southern Israel, Sinai).

Levant Hausmann 1993, 1996;

Bionomics: Larval hostplant *Loranthus acaciae* (epiphytic on *Acacia* and *Ziziphus*) (Hausmann 1993, 1997).

Genus ***Prasinocyma*** Warren, 1897

Prasinocyma eremica Wiltshire, 1980 (Pl. 154, Figs 1 a, b)

Prasinocyma eremica Wiltshire, 1980, Insects of Saudi Arabia Lepidoptera: Fam. Cossidae, Limacodidae, Sesiidae, Lasiocampidae, Sphingidae, Notodontidae, Geometridae, Lymantriidae, Nolidae, Arctiidae, Agaristidae, Noctuidae, Ctenuchidae.- Fauna of Saudi Arabia **2**: 191, Plate 1, fig. 6, 6a. L. t.: [Saudi Arabia], Ash Sharayi, holotype ♂ (NHMB), 23./25.IX.[19]78, leg. W. Büttiker, coll. BMNH.

Distribution: East Afro-Eremic. Endemic toYemen and Saudi Arabia.

Saudi Arabia Wiltshire 1977, 1980a, 1990; Hacker & Hausmann 1999;
Yemen unpublished material in the ZSM (Hausmann)

Bionomics: Unknown.

Prasinocyma arabica Wiltshire, 1982 (Pl. 154, Figs 3 a, b)

Prasinocyma arabica Wiltshire, 1982, Insects of Saudi Arabia Lepidoptera: Fam. Cossidae, Zygaenidae, Sesiidae, Lasiocampidae, Bombycidae, Sphingidae, Thaumetopoeidae, Thyretidae, Notodontidae, Geometridae, Lymantriidae, Noctuidae, Ctenuchidae (Part 2).- Fauna of Saudi Arabia **4**: 282, plate 1, fig. 8a-g. L. t.: Saudi Arabia: Asir, An Nimas, 2,450 m, holotype ♀ BMNH).

Distribution: East Afro-Eremic. The species was reported from Saudi Arabia and Yemen.

Saudi Arabia Wiltshire 1980, 1990; Hacker & Hausmann 1999;
Yemen Wiltshire 1982; Hausmann 1999, 2006; Hacker & Hausmann 1999.

Bionomics: Unknown.

Prasinocyma acutipennis Wiltshire, 1994 (Pl. 154, Figs 2 a, b)

Arabian Lepidoptera: a Supplement to the Catalogue of Saudi Arabian Macro-Heterocera. -Fauna of Saudi Arabia **14**: 113-136. L. t.: Saudi Arabia: near Taif, al-Shafa, 2,000 m, holotype ♂ (BMNH).

Distribution: East Afro-Eremic. The species is endemic to Saudi Arabia.

Saudi Arabia Wiltshire 1994; Hacker & Hausmann 1999;

Bionomics: Unknown.

Genus ***Celidomphax*** Prout, 1912

Celidomphax analiplaga (Warren, 1905) (Pl. 153, Figs 4 a-c)

Agraptochlora analiplaga Warren, 1905, New African Thyrididae, Uraniidae, and Geometridae. - Novitates Zoologicae **12**: 384. L. t.: German East Africa [Tanzania], Massisi, holotype ♀ (BMNH).

Distribution: Afrotropical-subtropical (Ethiopian). The species is locally distributed to Sub-Saharan Africa (Zimbabwe, Tanzania) and with a limited occurrence on the Arabian Peninsula (Yemen).

Yemen Hausmann 2006;

East Africa WARREN 1905;

Bionomics: Unkown.

Tribe Comibaenini INOUE, 1961

Genus *Microbaena* HAUSMANN, 1996

Microbaena pulchra minor HAUSMANN, 1996 (Pl. 154, Figs 4 a-c)

Microbaena pulchra minor HAUSMANN, 1996, The morphology of the geometrid moths of the Levant and neighbouring countries.-Part I: Orthostixinae and Geometrinae. – Nota lepidopterologica **19** (1/2): 23. L. t.: Sudan sept. or., Kassala Prov.(ince), Erkowit, 1,000-1,300 m, holotype ♂ (ZSBS), 25.VI. 1962, leg. REMANE, coll. ZSM.

Notes: The populations of the Levant belong to the nominate subspecies (L. t.: Central Israel, near Jerusalem (Wadi Al Kelt), Jaffa, the latter probably a wrong subsequent 'record'). The ssp. *minor* differs in its smaller size (forewing length 6.8-9.1mm only). Furthermore the third segment of palpus is shorter (0.2 mm). Frons flat, very slightly convex in the ventral half, whitish with ochreous scales. Hindtarsus not shortened (HAUSMANN 1996b).

Distribution: Afrotropical-subtropical (Ethiopian). The species is distributed in several more or less isolated populations from the Levant in the north to parts of the Arabian Peninsula, Mabla mountains in Djibouti (pers. observ.), Ethiopia, the Sudan and the Democratic Republic of Congo southwards to the RSA. The ssp. *minor* so far known from the western parts of the Arabian Peninsula (Saudi Arabia, Dhofar,Yemen), Sokotra island, Djibouti and Sudan. The taxonomic status of the south-eastern and southern African populations requires further studies. The species seems to be absent from equatorial rain forest belt.

Saudi Arabia	WILTSHIRE, 1980, 1990; HAUSMANN 1996a, b, 1997; HACKER & HAUSMANN 1999;
Yemen	HACKER & HAUSMANN 1999; HAUSMANN 1999, 2006, 2009;
Oman H	AUSMANN 1998; HAUSMANN 2009; WILTSHIRE 1990; HACKER & HAUSMANN 1999; 6♂ 4/2009; 1♀ 3/2010; 2♂ 4/2010;
East Africa	WILTSHIRE 1985b; HAUSMANN1996b; HACKER & HAUSMANN 1999; 1♂ Djibouti, Mabla mts. (Dardar mts.), N 11°53.947 , E 42°53.174, 600 m, 14.02.2015 LF, leg. Dirk STADIE;
Levant S	TAUDINGER 1898; AMSEL 1933, 1935; BODENHEIMER 1937; HAUSMANN 1996b,1997b;

Bionomics: Probably plurivoltine. Observed in the mountains of Dhofar between 100-750 m. The habitats are herb-rich mountainous steppes on calcareous soil. In the RSA it is found in moist savannah kind of habitat (pers. observ.). The hostplant is unknown.

Genus *Comibaena* HÜBNER, 1823

Comibaena rufitornus PROUT, 1916

Comibaena rufitornus PROUT, 1916, New African Geometridae. - Novitates Zoologicae **23**: 275-276. L. t.: [Kenya], Nairobi, syntypes 2 ♂, leg. F. J. JACKSON.

Distribution: East African. The species was reported from Kenya, Ethiopia, Somalia and the Arabian Peninsula (Yemen).

Yemen	HACKER & HAUSMANN 1999; HAUSMANN 1999, 2006;
East Africa	PROUT 1916c; HAUSMANN 1999;

Bionomics: Unknown.

Remarks: AISTLEITNER & HAUSMANN (2015) suggest *C. leucospilata* to be the correct identification for the populations of Yemen. This question requires an integrative revision of the whole species-group based on ample material from all over Africa.

Tribe **Thalassodini** INOUE, 1961

Genus *Thalassodes* GUENÉE, 1858

Thalassodes quadraria GUENÉE, 1858 (Pl. 154, Figs 5 a-d)

Thalassodes quadraria GUENÉE, 1858, Histoire naturelle des insectes. Spécies général des Lépidoptères. IX. Uranides et Phalénites. Tome I. - 9:1–xxxvii, 360. L. t.: Central India ? New Holland ?? Lectotype ♀ (BMNH).

Distribution: Afrotropical-subtropical (Ethiopian). The species is widespread to whole Sub-Saharan Africa down to the RSA and more limited on the Arabian Peninsula (Yemen).

Saudi Arabia	Wiltshire 1986, 1990; Hacker & Hausmann 1999;
Yemen	Wiltshire 1990; Hacker & Hausmann 1999; Hausmann, 2006;
East Africa	Pinhey 1975;

Bionomics: The species seems to be polyphagous. As hostplants were recorded members of the plant families Malvaceae, Lecythidaceae, Guttiferae, Rubiaceae, Fabaceae, Sapindaceae, Lythraceae, Anacardiaceae, Myrtaceae, Euphorbiaceae, Myricaceae and Annonaceae (Robinson et al. 2014)

Thalassodes digressa (Walker, 1861)

Geometra digressa Walker, 1861, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum. Part XXII.– Geometrites (continued). - 22: i–iv, 513. L. t.: [South Africa, KwaZulu-Natal, Durban], Port Natal, leg. Gueinzius.

Notes: Doubtful Record. The occurrence of this species on the Arabian peninsula requires confirmation. The specimen figured in Wiltshire (1990) probably does not belong to the genus *Thalassodes.* Therefore we propose to delete this species from the fauna inventory of the Arabian Peninsula.

Distribution: Afrotropical-subtropical (Ethiopian). The species is distributed to Sub-Saharan Africa.

Saudi Arabia	Wiltshire 1986 (cf. notes);
Yemen	Wiltshire 1990 (cf. notes);

Bionomics: Unknown

Tribe **Comostolini** Inoue, 1961

Genus ***Eucrostes*** Hübner, [1823]

Eucrostes disparata (Walker, 1861) (Pl. 154, Figs 6 a-d)

Eucrostis (sic!) *disparata* Walker, 1861, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum. Part XXII.– Geometrites (continued). **22**: i–iv, 567. L. t.: Ceylon [Sri Lanka], holotype ♂ (BMNH).

Distribution: Palaeotropical-subtropical (Old World). Widespread from Australia and the oriental region (India, Malaysia, Philippines, Sri Lanka, Taiwan, Vietnam) to the southern parts of the Arabian Peninsula (Saudi Arabia, Yemen, Dhofar) towards tropical Africa (Comores, Madagascar, Congo, Kenya, Nigeria, Tanzania, RSA).

Saudi Arabia	Wiltshire, 1982, 1990; Hacker & Hausmann 1999;
Yemen	Hampson 1896; Hacker & Hausmann 1999; Hausmann 1999, 2006;
Oman	Hausmann 2009; 3♂, 1♀ 4/2009; 3♂ 8/2010;

Bionomics: A plurivoltine species. The larvae feed on flowers and seeds of *Euphorbia* species, e.g. *Euphorbia hirta* (Euphorbiaceae) a recorded host plant in East Africa (Robinson et al. 2014).

Eucrostes pygmaea Rebel, 1907

Eucrostes pygmaea Rebel, 1907, Lepidopteren aus Südarabien und von der Insel Sokotra. - Denkschriften der österreichischen Akademie der Wissenschaften, Wien **71** (2): 97, pl. 1. L. t.: [Yemen], Island Abd el Kûri, 17.i.1899; Sokotra, Harbour of Haulaf, syntypes ♂,♀, 06–07.ii.1899.

Distribution: East Afro-Eremic. The species is endemic to Sokotra.

Yemen (Sokotra) Rebel 1907; Hausmann 1999, 2006, 2009; Hacker & Hausmann 1999;

Bionomics: Unknown. See under the preceding species.

Genus ***Comostolopsis*** Warren, 1902

Comostolopsis stillata stillata (Felder & Rogenhofer, 1874) (Pl. 154, Figs 7 a-d)

Eurostis stillata Felder & Rogenhofer, 1874, Reise der österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorf-Urbair. Zoologischer Theil. Zweiter Band. Abtheilung 2, Heft 4, Lepidoptera. Atlas der Heterocera. **2**:1–20, pls. 1–140, pl. 127, fig. 17. L. t.: Cape [South Africa, Cape Province], Plettenberg Bay, syntype(s) ♀ (BMNH).

Notes: The potential validity of ssp. *modesta* Herbulot and *mirabiliaria* Oberthür awaits further study (Scoble & Hausmann 2007).

Distribution: Afrotropical-subtropical (Ethiopian). The species is widely distributed to Sub-Saharan Africa and on the south-western parts of the Arabian Peninsula (Saudi Arabia, Yemen).

Saudi Arabia Wiltshire 1982;
Yemen Hacker & Hausmann 1999; Hausmann 1999, 2006;

Bionomics: The host plant is *Maytenus heterophylla* (Celastraceae) (Duke & Duke, 1998).

Tribe **Hemitheini** Bruand, 1846

Genus ***Hemithea*** Duponchel, 1829

Hemithea punctifimbria Warren, 1896 (Pl. 154, Figs 8 a-d)

Hemithea punctifimbria Warren, 1896, New species of Drepanulidae, Thyrididae, Uraniidae, Epiplemidae, and Geometridae in the Tring Museum. - Novitates Zoologicae 3: 366. L. t.: [India], Bombay.

Distribution: Omano-Makranian. The species is known from the eastern parts of the Arabian Peninsula (northern Oman, UAE), Laristan and Balouchistan towards India.

Oman Wiltshire 1985; Hacker & Hausmann 1999;
UAE Hausmann & Skou 2008;
Iran Brandt 1941; Lehmann et al. 2009;

Bionomics: Recorded in a desert wadi (lower Jegin river/Balouchistan) on sandy ground with *Tamarix*-, *Maerua crassifolia*-, *Lycium shawii*-bushes and trees of *Prosopis cineraria* (Lehmann et al. 2009). The host plant is unknown.

Genus ***Diplodesma*** Warren, 1896

Notes: Further, comprehensive study is needed to clear up the question of classification at genus level. The two Arabian species were combined with *Diplodesma* in Hausmann (1999; 2006; cf. Hausmann 1996), but their closest African allies are combined with *Chlorissa* in Scoble (1999). *Diplodesma* (basing on type species *Thalera celataria* Walker, 1866 from Indonesia) is synonymized with *Idiochlora* (basing on type species *Idiochlora contracta* Walker, 1896 from India) in Scoble (1999). Invesitgation of type species and dissection of their type specimens is needed, as well as a comprehensive, integrative taxonomic analysis including many taxa from Africa and the Indo-Pacific region.

Diplodesma schreieri Hausmann, 1999 (Pl. 154, Figs 9 a, b)

Diplodesma schreieri Hausmann, 1999, Geometrid Moth Species from Yemen. -Esperiana Buchreihe zur Entomologie **7**: 285, fig. 2, 28. L. t.: S.[outh] Yemen, Lahhej Governorate, Al Dhala, 1,500 m, 9.VI. 1987, leg. Müller.

Distribution: East African. So far only recorded in Yemen.

Yemen Hausmann 1999, 2006; Hacker & Hausmann 1999;

Bionomics: Unknown.

Diplodesma bischofi Hausmann, 1999 (Pl. 154, Figs 10 a, b)

Diplodesma bischofi Hausmann, 1999, Geometrid Moth Species from Yemen. -Esperiana Buchreihe zur Entomologie **7**: 284, fig. 3, 29. L. t.: Rep.[ublic]Yemen, prov. Ibb, 13°45`N 44° 10`E, 5km NE Al Qa`idah, Mahal al Houmeira, 1,800 m, 6.Xi.1996, leg. J. Bischof, H. Hacker 6 H. P. Schreier.

Distribution: East African. So far only recorded inYemen.

Yemen Hausmann 1999, 2006; Hacker & Hausmann 1999;

Bionomics: Unknown.

Genus ***Phaiogramma*** Gumppenberg, 1887

Phaiogramma faustinata faustinata (Millière, 1868) (Pl. 155, Figs 1 a-d)
Nemoria faustinata Millière, 1868, Iconographie et description de chenilles de Lépidoptères inédits. **2**: 436, pl. 96, figs. 2–8, syntypes.

Notes: Closely related, but different in male genitalia is *Phaiogramma discessa* (Walker, 1861) with a tropical Asiatic distribution. The African populations split up to several genetic clusters and may include some cryptic taxa. The potential validity of ssp. *vermiculata* Warren, 1897 for the populations of the Arabian peninsula (cf. Scoble & Hausmann 2007) awaits further study.

Distribution: Afrotropical-subtropical with a Mediterranean extension. The species is known to occur in most parts of Southern Europe (Spain, southern France, Balearic islands, southern Sicily, Malta, Crete, Canary islands), the Mahgreb (Morocco, Algeria, Tunisia), the Levant (Cyprus, central Lebanon, northern Jordan, Israel, Egypt), Armenia, Iraq and Iran. On the Arabian peninsula restricted to Dhofar (southern Oman), Yemen including Sokotra and western Saudi Arabia.

Saudi Arabia	Wiltshire 1986, 1990; Hausmann 1996a, b; Hacker & Hausmann 1999;
Yemen	Hacker & Hausmann 1999; Hausmann 1998, 1999, 2006, 2009;
Oman	Wiltshire 1986, 1990; Hacker & Hausmann 1999; Hausmann 1998, 2009; 2♀ 8/2010; 3 ♀ 7/2011 and 15♂ 15♀ reared;
North Africa	Rungs 1981; Hausmann1996b; Hausmann 2001; Lehmann & Hoppe 2011;
East Africa	Rebel 1912b; Herbulot 1965; Wiltshire 1985b; Hausmann 2001;
Levant	Bodenheimer 1932; Amsel 1933; Wiltshire 1949; Hausmann 1991, 1995, 1996b, 1997b, 2001; De Bros 1992; Halperin & Sauter1992; Müller 2003;
Asia minor	Hausmann 2001 (Armenia);
Iran	Brandt, 1941; Hausmann 2001;
Iraq	Hausmann 2001;
Europe	Hausmann 2001;

Bionomics: Plurivoltine and euryoecious. Larva polyphagous. Often found on *Foeniculum vulgare* and other Apiaceae (pers. observations) and many other plants of the families *Linaceae*, *Anacardiaceae*, *Fabaceae*, *Mimosaceae*, *Lamiaceae* (Hausmann 2001). Mature larvae originating from Oman appers colorful with a bright brownish and pinkish rhomboid pattern on a yelloish ground. Larvae from the RSA are dull sand colored (figs.).

Phaiogramma discessa (Walker, 1861)
Iodis discessa Walker, 1861, List of the Specimens of Lepidopterous Insects in the Collection of the British Museum. Part XXII.– Geometrites (continued). 22: i–iv, 544 L. t.: [India], North Hindustan, holotype ♀ (BMNH).

Notes: See under *Ph. faustinata.*

Distribution: Oriental (Indo-Malayan). The species is widely distributed in the Oriental region. On the Arabian Peninsula it is restricted to the eastern parts (UAE, northern Oman, eastern Saudi Arabia, Kuwait?).

Saudi Arabia	Walker & Pittaway 1987; Wiltshire 1990; Hausmann 1996a, b; Hacker & Hausmann 1999;
Oman	Wiltshire 1980b; Hacker & Hausmann 1999;
UAE	Legrain & Wiltshire 1998; Hacker & Hausmann 1999; Hausmann & Skou 2008;
Bahrain	Wiltshire 1964; Hacker & Hausmann 1999;
Iran	Brandt 1941;

Bionomics: Unknown, probably polyphagous like the preceding species.

Genus ***Neromia*** Staudinger, 1898

Neromia pulvereisparsa (Hampson, 1896) (Pl. 155, Figs 2 a-i)
Nemoria pulvereisparsa Hampson, 1896, On moths collected at Aden and in Somaliland. - Proceedings of the Zoological Society of London **16**: 268, plate 10, figure 27. L. t.: [Yemen], Aden, syntype(s) ♀ (BMNH).

Distribution: Saharo-Eremic. The species is widespread on the Arabian Peninsula (northern Oman, Dhofar, Saudi Arabia, Yemen, Sokotra) and is also recorded from Iran, central and southern Iraq. In the Levant the nominate subspecies is replaced by the ssp. *jodisata* Staudinger, 1898.

Saudi Arabia	Wiltshire 1980a, 1990; Hausmann 1996a, b; Hacker & Hausmann 1999;
Yemen	Hampson 1896; Rebel 1907; Hausmann 1999, 2006, 2009; Hacker & Hausmann 1999;
Oman	Wiltshire 1980b, 1985; Hausmann 2009; Hacker & Hausmann 1999; 3♀ 1/2009; 1♂ 1/2010; 4♂ 3/2011;

UAE Legrain & Wiltshire 1998; Hacker & Hausmann 1999; Hausmann & Skou 2008;
Bahrain Wiltshire 1964; Hacker & Hausmann 1999;
Iran Brandt 1941; Lehmann et al., 2009;

Bionomics: A plurivoltine and often common species in deserts and semi-deserts. The larvae were recorded on *Ochrodenus* spp. (Fabaceae) in the UAE (Hausmann & Skou 2008).

ssp. ***jodisata*** Staudinger, 1898 (Pl. 155, Figs 2 f-i)
Neromia pulvereisparsa jodisata Staudinger, 1898, Deutsche Entomologische Zeitschrift Iris **10**: 304, plate 4, Fig. 28. L. t.: Jordan valley, Israel, Jordan, syntypes 3 ♂.

Distribution: Endemic to the Levant. This subspecies is known from central and eastern Egypt, southern and central Israel, and southern Jordan.

Levant Staudinger, 1897; Amsel 1933, 1935; Bodenheimer 1937; Wiltshire 1949; Hausmann 1991, 1996b, 1997b,1997a; Halperin & Sauter 1992; Stadie & Lehmann, 2012;

Bionomics: Unknown.

Neromia simplexa Brandt, 1938 (Pl. 155, Figs 3 e, f; Figs 4 a-d)

Neromia simplexa Brandt, 1938, Beitrag zur Lepidopterenfauna von Iran. - Entomologische Rundschau **55**: 572, fig. 219. L. t.: south-west Iran: Fort Mian-Kotal, holotype ♂.

Distribution: Saharo-Eremic. The species is known from southern Iran, central Iraq, eastern Afghanistan (Sarobi), eastern Saudi Arabia, UAE and northern Oman.

Saudi Arabia Wiltshire 1982, 1990; Hausmann, 1996b; Hacker & Hausmann 1999;
Oman Wiltshire 1985, 1990; Hausmann 1996a; Hacker & Hausmann 1999; 1♀ 1/2009; 1♂ 1/2011;
UAE Legrain & Wiltshire, 1998; Hacker & Hausmann, 1999;
Iraq Heydemann et al. 1963;
Iran Brandt 1938, 1941;

Bionomics: The species was recorded in a open and hot sclerophyllous woodland at 1,900 m in northern Oman (pers. observ.). For habitat description see *Conolophia conscitaria.* The host plant is unknown.

Neromia integrata Hausmann, 2009 (Pl. 155, Figs 3 a-d)
Neromia integrata Hausmann, 2009, Order Lepidoptera, family Geometridae (Part 2) The Geometridae of the UAE revised in the light of mtDNA data. – In: van Harten, A. (ed.) Arthropod fauna of the UAE. - **2**: 474–475. L. t.: Oman, Northern Region, Jabal Shams, 19 km NW of al-Hamra, 1,100 m, 07.i.1993, leg. B. Skule.

Distribution: Omano-Makranian. Northern Oman, UAE and southern Iran.

Oman Hausmann 2009; 1♀ 1/2009; 1♀ 1/2011;
UAE Hausmann 2009;
Iran Hausmann 2009;

Bionomics: Unknown.

Genus ***Mimaplasta*** Herbulot, 1993

Mimaplasta canui Herbulot, 1993 (Pl. 155, Figs 5 a-c)
Mimaplasta canui Herbulot, 1993, *Mimaplasta canui*, n. gen. et n. sp. de l'île de Sokotra (Lepidoptera Geometridae Geometrinae). Bulletin de la Société entomologique de Mulhouse 1993: 49-50. L. t.: [Yemen]: Sokotra (east), ca. 500 m, holotype ♀ (HERB).

Notes: The genus *Mimaplasta* is closely related to the genus *Neromia* Staudinger, 1898.

Distribution: East African. The species is only known from Sokotra.

Yemen (Sokotra) Herbulot 1993, 1994; Hacker & Hausmann 1999; Hausmann 1999, 2006, 2009;

Bionomics: Unknown.