

Annotated Check-List of Orthoptera of Libya

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Annotated check-list of Orthoptera of Libya

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Abstract

A list of Libyan Orthoptera is presented based on specimens preserved in Museums, incorporating all (previously published or unpublished) label information. Overall, 141 species are included, of which four are new records for the country. Given within "*species inquirendae*" are another six species, with the reasons for confirming their presence. Libya's orthopteran fauna is probably not rich, but our knowledge of it is far from exhaustive.

Key words

North Africa, Caelifera, Ensifera, Libya, records

Introduction

The first zoological expedition to Libya was probably that of Rohlf's between December 1878 and October 1879, through Tripolitania and Cyrenaica to the oasis of Cufra: here many specimens were collected. However, this expedition was very unfortunate: nearly all specimens obtained were destroyed during a camp pillage at the oasis of Kebabo (Cufra); this was carried out by the Moslem confraternity of Senussi, deeply rooted in Cyrenaica. Afterwards, between September 4th and 6th in 1879, an Italian naval expedition stopped at Tripoli and its surroundings, collecting some grasshoppers. The cutter *Violante* was travelling for the fourth time in the Mediterranean to collect material for the Museo Civico di Storia Naturale of Genoa. These are probably the first Libyan specimens preserved in museums.

Haimann (1882) was the first to publish records on the Orthoptera of Libya. He visited Cyrenaica in 1881, accompanied by his wife, being charged by the Società d'Esplorazione Commerciale of Milan to collect zoological, botanical and archaeological materials. Grasshoppers listed by him were tentatively identified by E. Cornalia, manager of Museo Civico di Storia Naturale of Milan. Afterwards, Rizzardi (1896) reported the results of collections made by Bricchetti-Robecchi in Tripolitania in 1895 between Homs and Misurata (now preserved in the Museo di Zoologia dell'Università di Pavia).

In 1906, Bruno Klapotcz visited Cyrenaica and Tripolitania, between July 5th and September 21st, to study mammals (Klapotcz 1908). He sent the remarkable orthopterological material collected by him to F. Werner, who listed *ca* 50 species, describing some previously unknown (Werner 1908a, 1908b). Werner listed some material collected at Socna that survived from the unfortunate Rohlf's expedition, and also three species collected by Gröthe at Tripoli.

Enrico Festa carried out two expeditions to Cyrenaica in 1821, between April 20th and May 29th, and in 1822, between January and

May; later Giglio-Tos (1923) listed 29 species of Orthoptera collected by Festa, some of which were previously unknown in Libya. Presently, these specimens occupy two entomological boxes in the Museo Regionale di Scienze Naturali of Turin.

Between 1915 and 1919 the missionary Zanon (1924) studied Orthoptera of Cyrenaica, recording a further six species previously unknown.

The most important contribution to the knowledge of Libyan Orthoptera is certainly that of Mario Salfi, who even though he never actually journeyed to the country, published many papers on Libyan insects between 1924 and 1935, based mainly on collections carried out by Geo Kruger. Kruger was responsible for the Agricultural Provincial Office of Bengasi. Only a few papers were actually published by him (Kruger 1928, 1929a, 1929b, 1930), while many were published by Salfi (1924, 1925, 1926, 1927a, 1927b, 1934). Salfi also studied the specimens collected in Fezzan by G. Scortecci on behalf of the Società Geografica Italiana (Salfi 1935a), and at Marada, Augila, Gialo and Cufra by E. Zavattari (Salfi 1935b). Overall, Salfi recorded 57 Libyan species (*cf.* also Salfi 1930a, 1930b, 1930c), 10 of which were previously unknown; his material is preserved in the Museo di Zoologia dell'Università of Rome.

Another remarkable contribution to knowledge of the Orthoptera of Libya is a monograph by Felice Capra. He based this on collections carried out by others: C. Confalonieri at the oasis of Giarabub and its surroundings (Hatiet Melfa, Hatiet el-Fredga, Uadi Gerfen-Porto Bardia), F. Invrea at Tobruk, the staff of the ship *Ammiraglio Magnaghi* in the Gulf of Bomba, the archaeologist C. Anti at Cirene, L. Bardi in the oasis of Giofra (Uosca Valley-Djebel Soda) and A. Andreini in the territory of Misurata (Capra 1929). Overall, Capra recorded 31 species, seven of which were hitherto unknown in Libya and two undescribed. This material is preserved in the Museo Civico di Storia Naturale of Genoa. Zavattari (1934) meticulously summarized all previously recorded species, and was still updating them into the first years of the 1940s, until interrupted (unpublished manuscript is preserved in the Museo of Genoa).

Three other Italian entomologists, G. Jannone, M. La Greca and C. Menozzi, worked extensively on Libyan Orthoptera. Jannone (1938), using material collected by G. Momo in Cyrenaica, and by G. Levi, G. M. Martelli (of Agricultural Provincial Office of Tripoli) and F. Silvestri in Tripolitania, listed 26 species, among which five were unrecorded previously and another undescribed. Material is preserved in the Dipartimento di Entomologia e Zoologia agraria dell'Università di Naples, at Portici.

Menozzi (1940) visited Tripoli in November 1936 to attend the 14th Meeting of the Società Italiana per il Progresso delle Scienze

and collected five previously unrecorded species, one of which was undescribed.

Finally, La Greca (1957, 1969), reporting results of collecting carried out by E. Mellini and G. Fiori in April 1952, August and September 1954 and May 1963 in Tripolitania and Fezzan, listed 37 species, 12 of which were previously unknown in Libya and three others undescribed; material is preserved in the Museo Civico di Storia Naturale of Milan.

In the most recent decades a new local interest in Libyan Orthoptera was revived, in particular at the University of Sebha, where three entomologists published papers on this order (Ajaili *et al.* 1989; Ajaili & Usmani 1990; Usmani & Ajaili 1991, 1994, 2000, 2001; Usmani 2007, 2008, 2008a, 2008b, 2008c).

Faunistic importance of Libyan environments.—Libya is the fourth largest African country, with a land surface of 1,775,500 km² and 1,820 km of coasts (Fig. 1). It includes diverse regions. Tripolitania, bordering with Tunisia, is characterized by low mountains (such as Djebel Nafusah) below 700 m a.s.l., and many wadi (also named uadi; they are characteristic old river beds, generally dry, sometimes covered by vegetation).

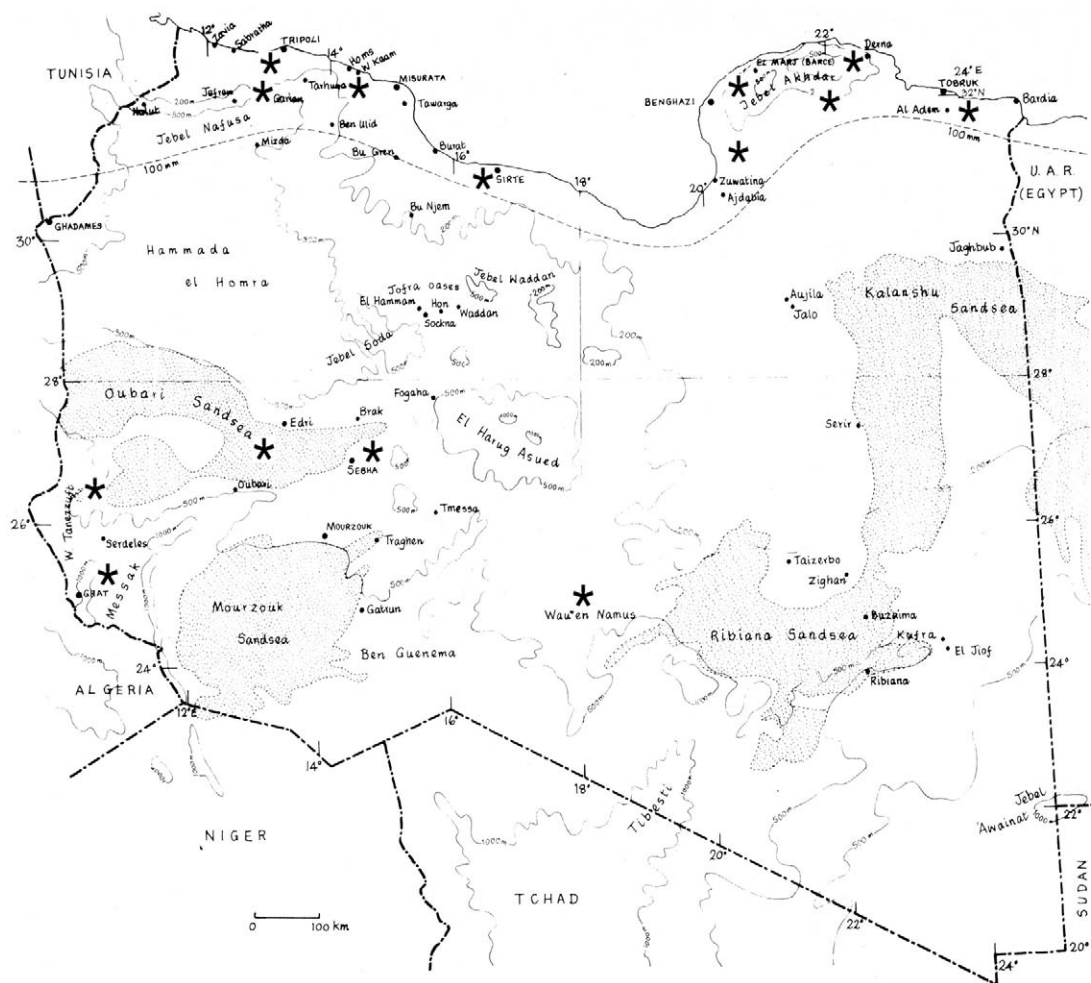
South of Tripolitania lies Hammada el Hamrah, the wide Algerian-Libyan desert, which separates coastal Tripolitania from Fezzan, a region characterized by low mountains, 500-700 m a.s.l., wadi and many oases, among which Murzuq, Sabha, Brack and Ghat (at the border of Algeria and the Tassili upland) are the best known. Fez-

zan borders Niger in the South, Chad in the southeast. The upland of Tibesti lies between Libya and Chad, reaching the considerable altitude of 3,200 m a.s.l. The Hammada el Hamrah is interrupted to the east by the wide oasis of Giofra and the Djebel es Soda (Black Mountains), peaking at 800 m. North of Giofra, Tripolitania borders Sirtica, mainly desert up to the coast and characterized by many wadi.

The most mediterranean and greenest region is Cyrenaica, to the east bordering Egypt, with a wide northern area dominated by the Djebel el Akhdar (Green Mountains), peaking at 800 m, where a maquis grows on rock soils, mainly constituted of *Juniperus phoenicea*, *Cupressus sempervirens*, *Arbutus pavori*, *Pistacia lentiscus*, *Cistus* spp., *Phlomis floccosa* and *Quercus calliprinos*. A drier area, with some isolated mountains, named Marmarica, is the most eastern area of Cyrenaica, extending up to Egypt. South of Cyrenaica the wide Libyan desert is interrupted only by some oases, such as Giarabub, Augila and Cufra.

In the area currently covered by the Sahara desert (9.1 millions km²) recent changes have occurred: about 12,000 to 6,000 years ago the Sahara was a land of lakes, after which there was a return to aridity, accentuated about 4000 years ago (Williams 1984). Historical, archaeological and geological records provide abundant evidence that, before at least 4000 years ago, the borders of the Sahara experienced more than one period when conditions were wetter than today (Butzer 1971). Until no more than 5000 years ago, at least the western Sahara was covered by a temperate-zone

Fig. 1. Map of Libya; asterisks (*) show areas visited by the author and his collaborators.



vegetation, sufficient to support a rich fauna.

Pollen analysis shows that this desert cover dates back to *ca* 4000 years ago; in spite of this, along the Libyan coast, climate did not change in the last 4,000 years and it seems that the average rainfall of 400 mm at Tripoli and 600 mm on Djebel Akhdar (Cyrenaica) did not fluctuate during this time (Hufnagl 1972). The eastern margin of North Africa from Libya to Somalia is considered among the areas characterized by the highest intensity of aridity (Oberlander 1979). Rainfall in the extreme desert areas of Algeria and Libya is recorded only in late autumn to early winter and more generally, the northern Sahara exhibits strong winter-seasonal rainfall, while the southern Sahara and Sahelian regions have predominantly summer-seasonal rainfall (Whitford 2002). Presently, the long-term climatic prognosis is for a return to the hyperarid conditions of 18,000 to 12,000 years ago, when intertropical aridity was world-wide (Williams 1984, Whitford 2002).

The distribution of oases gives only a small idea of the availability of fossil water contained in the subsurface of some desert areas, such as Sarir, Cufra and Murzuq. These have a very important function in the survival of fauna nonadapted for barren conditions, faunae that were once possibly much more widespread than they are today over the area currently covered by desert.

These oases certainly had natural characteristics that were much different from today. The historian Erodotos (484-428 BC), who cites Augila oasis, wrote that the area was surrounded by thick bushes and described an abundance of water that does not exist today. Nowadays, the Sahara is a region of extreme aridity, high temperatures and violent winds (Cloudsley-Thompson 1984), comprising an area which has a mean annual precipitation of 100 mm or less, extending to about 5,150 km and going from the shores of the Atlantic Ocean to the Red Sea coast in Egypt. In some places, as in Libya, it reaches the southern shores of the Mediterranean sea, extending from N to S between 970 to 1290 km (Smith 1984).

Oases represent a very important faunistic refuge; they are scattered in the desert up to the coast and include irrigated land for agriculture, small villages and isolated habitats associated with water presence. In recent times, new oases have been established for agricultural purposes, even if with infrequent success (as Sarir, south of Cyrenaica: Popov *et al.* 1984). Along the route between Akakus and Sebha there are other small oases, villages and many trees planted by man, such as date palms and tamarisks; these narrow strips of vegetation provide for a seemingly more hospitable area in southwestern Fezzan.

Small mountain ranges in the middle of the desert play a large climatic and ecological role. At their base, modest rainfall produces limited amounts of humidity that encourage the growth of small areas of vegetation, mainly consisting of tamarisks.

Undoubtedly, the most important biological richness of the desert consists of perennial lakes, numbering many more than might be imagined. Ubari Sand Sea, lying within the Germa area, has been a feature of the landscape for at least the last 2.5 million years. While parts of the 'sand sea' would have been submerged during lacustrine phases, much of this area would have been above the level of the lake surface.

Small lakes still exist in the eastern part of the 'sand sea' where the land surface intercepts the local water table to form the perennial oases of Gabron, Um el Ma and Mahfu. In other places the water table is close to the surface, forming sebkhas such as Sebkha Beni Ateyi and the ephemeral Lake Mandara, both of which are characterised by abundant vegetation and support a relatively diverse and still unexplored ecology (White *et al.* 2000). In the area of Germa, 21

lakes of variable size were censused, 15 permanently full, four filled only in winter and two drained, but covered by palm groves.

A very wide humid zone lies within Waw el Namus (in Arabic = mosquito). It is a humid area widely surrounded by reeds, lying within a volcano caldera about 4 km in diameter, surrounded by a 5 to 10-km wide dark black deposit of ash, that stands out starkly against the yellowish desert.

Klaptocz (1908) found Libya faunistically poor. Concerning Cyrenaica, Haimann (1882) pointed out that it was difficult to understand the fauna's lack in both species and numbers, given that the region was covered by abundant vegetation and not much populated by humans. Ghigi (1913), convinced that the country must be explored more exhaustively to remedy this situation, visited Cyrenaica between 15th and 24th April 1920, on behalf of Touring Club Italiano; later on, he considered Libya's fauna to be really quantitatively scarce (Ghigi 1922, 1923, 1924).

From the orthopterological point of view, Libya is fairly poor and this general faunistic poverty could be due to the wide extent of dry and desert areas, which in turn should also influence the climate, along mediterranean coastal territories. Nevertheless, some areas of Libya (*e.g.*, Djebel el Akhdar and in general Cyrenaica) may be considered today as islands, characterized by a low number of taxa, but rich in endemic species, and we could expect further interesting taxa to be discovered in the future.

Examined material and methods

There being many Libyan entomological specimens preserved in Italian museums, some years ago I began to record this material and carried out a first trip through Libya. After the first contributions (Massa 1996, 1997, 1998), I studied new material in other European museums and carried out a second trip, visiting new regions of Libya and collecting further specimens. The following are the localities visited (Fig. 1): between 4th and 16th April 1998 I travelled from the Tunisia-Libya frontier to that of Libya-Egypt and back; between 17th and 29th April 2005 I visited Fezzan (Sebha-Murzuq, Mathendusc, Germa lakes, Waw el Namus), Tripolitania coast (Leptis Magna) and Cyrenaica (Djebel el Akhdar). Further, newly collected material has been kindly sent to me by some entomologists (listed in the "acknowledgments"). Localities recorded by different authors are listed only once.

The present contribution is an annotated check-list, resulting both from the bibliographic analysis and newly collected material. References are reported after relevant localities (listed in the Appendix).

Italian material is mostly preserved in the collections of Museo Civico di Storia Naturale G. Doria of Genoa, Museo Regionale di Scienze Naturali of Turin, Museo di Zoologia University of Rome, Museo Civico di Storia Naturale of Milan, Museo Civico di Storia Naturale of Venice, Dipartimento di Entomologia e Zoologia Agraria University of Naples, Portici, Istituto Agronomico per l'Oltremare of Florence, and Dipartimento SENFIMIZO University of Palermo.

Annotated check-list

Gryllidae

Acheta confalonierii (Capra, 1929)

Porto Bardia (Capra 1929; Massa 1998).

Acheta domestica (Linnaeus, 1758)

Bengasi (Haimann 1882); Dernah (Werner 1908b); Um Erzeni (Giglio-Tos 1923, as *Gryllus domesticus*); Fuehat (Zanon 1924, as *Gryllus*

domesticus); Bengasi (Salfi 1925, as *Gryllus domesticus*); Bardia (Salfi 1927a, as *Gryllus domesticus*); Uadi Gerfen (Capra 1929, as *Gryllus domesticus*); Tibesti (Chopard 1932, as *Gryllus domesticus*); Cufra: Haret el Hafun, El Tag (Salfi 1934, as *Gryllus domesticus*); Gat (Salfi 1935a, as *Gryllus domesticus*); Marada, Gialo (Salfi 1930a, 1935b, as *Gryllus domesticus*); Misurata, Gialo, Homs, Uadi Gerfen, 40 Km E Gadames (Massa 1998).

Acheta hispanica Rambur, 1839

Bengasi (Giglio-Tos 1923, as *Gryllus hispanicus*); Bu el Gherab (La Greca 1957).

Acheta chudeaui (Chopard, 1927)

Mizda (La Greca 1957).

Gryllus campestris Linnaeus, 1758

Dernah (Werner 1908b, as *Liogryllus campestris*); Fuehat (Zanon 1924, as *Acheta campestris*).

Gryllus bimaculatus (De Geer, 1773)

Dernah (Werner 1908b, as *Liogryllus bimaculatus*); Bengasi, Fuehat (Giglio-Tos 1923, as *Acheta bimaculata*); Fuehat (Zanon 1924, as *Acheta bimaculata*); Bengasi (Salfi 1925, as *Acheta bimaculata*); Giarabub (Capra 1929, as *Liogryllus bimaculatus*); Augila (Salfi 1930a, as *Liogryllus binoculatus*); Tibesti (Chopard 1932, as *Liogryllus binoculatus*); Cufra: 121 km SO Auenat (Salfi 1934, as *Liogryllus binoculatus*); Sabratha, U. Kaam, U. Gelela, U. Endeliba, U. Sofeggin, Mizda (La Greca 1957); Hamada el Hamra (La Greca 1969); Cirene, Buema, Porto Bardia, Tripoli, Sirte, At Tmimi (Massa 1998); Wadi El Sahel 28.VIII.2003, 1♀, R. Ientile.

Svercus palmatorum (Krauss, 1902)

El Kouf 30.VIII.2003, 1♂, R. Ientile.

Note: previously unrecorded in Libya.

Modicogryllus burdigalensis (Latreille, 1804)

Wadi Kuf (Giglio-Tos 1923, as *Gryllus chinensis*); Hatiet el-Fredga (Capra 1929, as *Gryllus burdigalensis*); Gheria el Garbia (La Greca 1957, as *Acheta burdigalensis*); Giarabub, Gheddaia B. Seifa, Mizda (Massa 1998).

Modicogryllus confirmatus (Walker, 1859)

Bengasi (Jannone 1938, as *Gryllulus confirmatus*); Bengasi (Massa 1998).

Modicogryllus tripunctatus (Werner, 1908)

Ain Sarah (Werner 1908b).

Tartarogryllus cyrenaicus (Werner, 1908)

Bengasi (Werner 1908b).

Gryllodinus kerkennensis (Finot, 1893)

Tripoli (Massa 1998).

Gryllomorpha pygmaea Menozzi, 1940

Garian (Menozzi 1940).

Gryllomorpha rufescens Uvarov, 1924

Giarabub-Porto Bardia (Capra 1929); Garian (Jannone 1938; Massa 1998); El Kouf 30.VIII.2003, 2♂♂, 1♀, R. Ientile.

Gryllomorpha gestroana Bolivar, 1914

Tripoli (Bolivar 1914: actual locality of the holotype female is Misurata: Massa 1998); Tagiura (Menozzi 1940).

Gryllomorpha minima Werner, 1914

Uadi Gerfen (Capra 1929); El Azizia (Menozzi 1940, as *G. prope minima*); At Tmimi (Massa 1998).

Brachytrupes megacephalus (Lefevre, 1827)

Bengasi (Werner 1908b; Zanon 1924); Murzuch, Gat (Salfi 1935a); Fezzan, Gat (Scortecci 1937); Derna (Jannone 1938); Leptis Magna (La Greca 1957); Misurata, Homs, Tripoli, Bu Meliana, Sirte (Massa 1998).

Trigonidium cicindeloides Rambur, 1839

Ain Sarah (Werner 1908b); Tagiura (Menozzi 1940).

Oecanthus pellucens (Scopoli, 1763)

Fuehat (Zanon 1924); Bengasi (Salfi 1925).

Pteronemobius heydeni (Fischer, 1853)

Tauorga (Massa 1998).

Stenonemobius gracilis (Jakovlev, 1871)

Barce (Massa 1998).

Mogoplistidae

Mogoplistes brunneus (Serville, 1839)

Dernah (Werner 1908b, as *Mogisoplistus brunneus*).

Myrmecophilidae

Eremogryllodes fiorii La Greca, 1969

El Gheria esc-Scherghia (La Greca 1969).

Myrmecophilus cottami Chopard, 1922

Porto Bardia (Capra 1929, as *Myrmecophila americana*; Massa 1998).

Gryllotalpidae

Gryllotalpa africana africana Palisot de Beauvois, 1805

Tripoli, Ain Sarah (Werner 1908b); Giarabub, Porto Bardia (Capra 1929; Massa 1998); Tunin, Gat, Brach (Salfi 1935a); U. Caam (La Greca 1969); Um el Ma lake 23.IV.2005, 1♂, U. Pessolano.

Gryllotalpa prope cossyrensis Baccetti et Capra, 1978

Homs, Cufra (Lake Haret Hafun, Lake Haret el Tobat), Sebka el Giof (Baccetti & Capra 1978).

Stenopelmatidae

Lezina peyerimhoffi (Chopard, 1929)

Tibesti (Chopard 1936, as *Magrettia peyerimhoffi*); Waw el Namous 20.IV.2005, 1♂, B. Massa.

Note: the locality where it has been recorded on Tibesti lies within Chad (Popov 1984), thus, that of W. Namous is the first record from Libya.

Tettigoniidae

Conocephalus (Conocephalus) conocephalus (L., 1758)

Ain Sarah (Werner 1908b, as *Xiphidion aethiopicum*).

Conocephalus (Anisoptera) maculatus (Le Guillou, 1841)

Mizda, Pisida (Massa 1998).

Note: following Harz (1969), Pitkin (1980) and Popov (1981), this species shows the following characteristics: 10th tergum of male provided with a narrow central concavity, cerci hatchet shaped, with an inner tooth placed on the basal third; subgenital plate of female apically straight. It is widespread in tropical afro-asiatic zones, Saudi Arabia, India, Australia and the Pacific; regarding the Mediterranean area it was previously known only for Libya (Tripolitania), but I found in the Museum für Naturkunde of Berlin another interesting specimen from Algeria, namely: El Kantara 6.VII.1932, Touney Zekri, ♂, labelled "*Conocephalus algericus*" (probably by W. Ramme), species never described. The present record from Algeria shows that its mediterranean distribution is wider than known.

Ruspolia nitidula (Scopoli, 1786)

Endschila (Werner 1908b, as *Conocephalus nitidulus*); Ain Zara (Massa 1998).

Phaneroptera nana Fieber, 1853

Derna (Salfi 1927a, as *P. falcata*); Mizda (Massa 1998).

Phaneroptera sparsa Stål, 1857

Tibesti (Chopard 1936, as *P. nana*); Akakus 5.XI.2006, 1♂, U. Pessolano.

Note: it has been raised to valid species by Ragge (1980); its distribution covers Africa south of the Sahara, extending westwards to Morocco, Canary Is and Spain, and eastwards from Arabia to Anatolia. Thus we could expect its presence in south Libya; the record of Chopard (1936) on Tibesti could also be referred to this species.

Diogena fausta (Burmeister, 1838)

Ghat (Massa 1998).

Odontura trilineata (De Haan, 1842)

Tripoli (type locality: Fontana & Buzzetti 2004, who ascribed this species to *Odontura* Rambur, 1839, it being previously considered belonging to the genus *Barbitistes* Charpentier, 1825).

Tylopsis peneri Ragge, 1974

Slonta, Jebel Akhdar (Ragge 1964); El Kouf 30.VIII.2003, 1♂, R. Ientile.

Note: Ragge (1964) ascribed Libyan specimens to the "deserticolous form" of *T. lilifolia* (Fabricius 1793), that afterwards (Ragge 1974) described as *T. peneri*. The specimen from Kouf has typical characters of *T. peneri*: male cerci attenuate at the tip; lateral pronotal lobes that are more or less angular; lateral lobes of the female subgenital plate typical of *T. lilifolia*, completely lacking. Consequently I consider that other specimens cited by Ragge (1964) have to be identified as *T. peneri*, and *T. lilifolia* can be omitted from the Libyan list.

Afromeconema felcis Massa, 1997

Cirene, El Abiar (Massa 1997); Wadi el Kouf (Massa 1998); Ras el Hilal 8.III.2005, 1♀, M. Sarà (attracted to the light).

Note: the male of this species is still unknown; to date only four females have been recorded.

Tettigonia krugeri Massa, 1998

Merg (Giglio-Tos 1923, as *Phasgonura caudata*); Cirene, Merg (Massa 1998).

Note: this small well-characterized species is so far known only for the types (male and female) preserved in the Museo Civico di Storia Naturale of Genoa.

Decticus albifrons (Fabricius, 1775)

Bengasi (Haimann 1882); Endschilda (Werner 1908b); Tecnis, Tolmetta (Giglio-Tos 1923, as *Tettigonia albifrons*); Fuehat (Zanon 1924, as *Tettigonia albifrons*); Derna (Jannone 1938, Massa 1998).

Tessellana tessellata (Charpentier, 1825)

Tocra (Giglio-Tos 1923, as *Chelidoptera tessellata*); Bengasi (Salfi 1927a, as *Metrioptera tessellata*); Merg (Massa 1998).

Platycleis (Decorana) new species

Garian hills, Jefren C., Sidi Benour 40 km E Tripoli, 72 km W Nofilia (Fontana & Massa 2009).

Platycleis (Platycleis) intermedia (Serville, 1839)

Tripoli (Werner 1908b); Tobruk (Salfi 1927a, 1930, as *P. grisea*); Leptis Magna 28.IV.2005, 1♂, B. Massa.

Platycleis (Platycleis) falx laticauda Brunner von Wattenwyl,

1882

Fuehat (Zanon 1924, as *Chelidoptera laticauda*); Bengasi (Salfi 1927a, as *P. laticauda*).

Platycleis (Platycleis) sabulosa Azam, 1901

Tripoli (Jannone 1938); Derna (Salfi 1925, as *Metrioptera intermedia*?); U. Sofeggin (La Greca 1969); Ain Zara, Derna, Tripoli (Massa 1998).

Rhacocleis dernensis Salfi, 1926

Derna (Salfi 1925, as *Rhacocleis annulatus*; Salfi 1926); Cirene (Salfi 1927b).

Pterolepis lagrecai (Fontana et Massa, 2004)

Tocra, El Kouf (near Kufantah and El Karsa villages) (Fontana & Massa 2004, as *Rhacocleis lagrecai*).

Recently Willemse & Willemse (2005) established that this species belongs to the genus *Pterolepis* and supposed that *R. dernensis* (which they did not examine) could belong to it too.

Steropleurus innocentii innocentii Finot et Bonnet, 1885

Gasr Garabulli (Jannone 1938, as *S. lucasi*); U. el-Beda, U. Sofeggin (La Greca 1969); Gasr Garabulli, U. es Zemam Bu Ghoem-Hom (Massa 1998); Sidi Benour, 40 km E of Tripoli, Nalut, Brega (Fon-

tana & Massa 2008).

Steropleurus filenorum Massa, 1998

Merg, Tecnis, Tolmetta (Giglio-Tos 1923, as *S. lucasi*); Bengasi, loc. Berka (Zanon 1924, as *U. confusus*); Bardia (Salfi 1927a; Kruger 1929b, as *S. lucasi*); Barce (Beccari & Gerini 1983, as *S. lucasi*); Merg, Bengasi, Barce, Derna, El Abiar (Massa 1998); Bersis, Benina Plain, Bir Ziozan (Fontana & Massa 2008).

Steropleurus ientilei Fontana et Massa, 2008

Near Barce, Berta, El Kouf (Al Beyda) (Fontana & Massa 2008).

Ephippigerida nigromarginata (Lucas, 1849)

Tocra (Giglio-Tos 1923).

Note: the presence of this species in Libya has to be confirmed.

Tridactylidae

Xya variegata Latreille, 1809

Tunin, Gat (Salfi 1935a).

Tetrigidae

Paratettix meridionalis (Rambur, 1839)

Tripoli, Ain Sarah, Dernah (Werner 1908b); Derna (Giglio-Tos 1923; probably also as *Acridium depressum*); Cirene (Salfi 1925); Ain Zara, Bu Kamesh (Salfi 1927b); Tunin, Brach (Salfi 1935a); Tripoli (La Greca 1967); Ain Zara, Bu Kamesh (Massa 1998).

Pamphagidae

Genus *Tmethis* Fieber, 1853

The genus *Tmethis*, together with some related genera, was revised by Uvarov (1943), who separated males of *T. cisti* (Fabricius 1787) and *T. pulchripennis* (Serville 1838) by the shape of the lophi of the epiphallus, the lophi being in *T. cisti* large and clearly separated. Females are very difficult to identify. Additionally, subspecific taxonomy proposed by Uvarov (1943: 65-66) is based mainly on the color of hind tibiae and femora. This should be reconsidered, this character being very variable sometimes within the same population, and in some cases distribution of specimens bearing different color characteristics (considered to belong to distinct subspecies) overlapping widely. For instance *T. cisti harterti* Uvarov 1923 (described from Merg, in Cyrenaica) and *T. cisti barcaeus* Salfi 1926 (described from Bengasi, not far from Merg) should differ by the color of hind tibiae; *T. cisti khaledi* Ajaili et Usmani 1999 is separated from other subspecies by the yellow color of female hind tibiae (Ajaili & Usmani 1999). According to La Greca (1969) and Massa (1994, 1998), within the same locality this character may be quite variable. Wing length, a character also variable, cannot be considered for identification, as previously supposed by Jannone (1938). As consequence of these considerations, I treat here only *Tmethis pulchripennis* and *Tmethis cisti*, without listing their subspecies, which are probably lacking biological significance. Additionally, for the females of *T. cisti*, difficult-to-separate from *T. maroccanus* Bolivar 1908, I do not report the latter nor the two subspecies listed by Usmani (2007, 2008) on some females collected in Fezzan (Sebha and Al Barakat), as well as *Neotmethis bidentatus* Usmani 2008, from Samnu (Ghat), genus and species described by Usmani (2008c) on a single female.

Tmethis pulchripennis (Serville, 1838)

U. Caàm, Mizda, Tinaiat ben Galan (La Greca 1957, 1969; Massa 1998); Sebha (Usmani 2008).

Tmethis cisti (Fabricius, 1787)

Bengasi (Werner 1908b, as *Eremobia cisti*); Tolmetta, Merg, Tecnis, Bengasi, Tocra, Apollonia, Ghemines (Giglio-Tos 1923, as *Eremobia cisti*); Tobruk (Salfi 1924, as *Tmethis clovelii*); Fuehat (Zanon 1924, as *T. cisti* e *T. claveli*); Cirene, Bengasi (Salfi 1925; Salfi 1926, as *Tmethis cisti harterti*); Bengasi (Salfi 1926, as *Tmethis cisti barcaeus*); Ain Mara (Salfi 1927a, as *T. cisti harterti*); Ain Zara (Salfi 1927b); Gulf of Bomba, Porto Bardia, Tobruk (Capra 1929); Bengasi, Cirene,



Fig. 2. Pair of *Paracinipe orientalis* (Werner). Cirene, 26 IV 2005. For color versions, see Plate IV.

Gasr Garabulli (Jannone 1938); Mizda, Garian (La Greca 1957); Hamada el Hamra, Mizda, esc-Sciuref, U. Caam (La Greca 1969); Tripolitania (Beccari & Gerini 1983); Merg, Tolmetta, Apollonia, Ghamines, Gulf of Bomba, Porto Bardia, Tripoli, Homs, U. Tamed, Gasr Bu Hadi, Gheddaia, Rus Hamra, Tobruk, Cirene, Bengasi, Ain Mara, Ain Zara, Homs, Bengasi, Cirene, Gasr Garabulli, 60 m E Sirte, Agedabia, 20 km E Derna, Tobruk, Tagiura (Massa 1998); Sebha (Ajaili & Usmani 1999, Usmani 2007, 2008, as *Tmethis cisti khaledi*).

Tuarega insignis (Lucas, 1851)

Tibesti (Chopard 1936); Libya (Dirsh 1965); U. Sofeggin (La Greca 1969); Bin Ullid, Gheddaia, Bir Seifa, Bir Tar, Ghadames (Massa 1998); Brack (Usmani 2008).

Finotia maxima Jannone, 1938

Gasr Garabulli (Jannone 1938); Libya (Dirsh 1965, as *F. spinicollis*); Tripolitania (Beccari & Gerini 1983, as *F. gasr-garabulliensis*).

Paraeryparyphes quadridentatus (Brisout, 1852)

Gasr Garabulli (Jannone 1938); U. el-Beda (La Greca 1969, as *E. prob. quadridentatus*; La Greca 1993, who ascribed it to the newly described genus *Paraeryparyphes*); Tripolitania (Beccari & Gerini 1983); Garian (Massa 1998); Tripoli, Samnu (Sebha) (Usmani 2008).

Pamphagulus bodenheimeri dumonti Uvarov, 1929

Hamada el-Hamra (La Greca 1969).

Paracinipe saharae (Pictet et Saussure, 1891)

Samnu (Sebha) (Usmani 2007, 2008).

Note: records from Cyrenaica and Tripolitania by Usmani (2007, 2008) have possibly to be referred to one of the species listed below.

Paracinipe orientalis (Werner, 1908) (Fig. 2)

Dernah (Werner 1908b, as *Pamphagus orientalis*); Derna, Wadi Kuf, Tolmetta, Merg (Giglio-Tos 1923, as *Acinipe orientalis*); Koëfia (3 specimens found by Zanon (1924) on a bush of *Rhus oxyacantha* and identified as *Pamphagus elephas*; see below: "*species inquirendae*"); Bengasi, Derna (Salfi 1925, as *Acinipe orientalis*; Salfi 1926, as *Acinipe orientalis cyrenaica*); Ain Mara (Salfi 1927a, as *A. orientalis*); Cirene, Derna, Merg (Salfi 1941, as *Acinipe orientalis*); Bengasi (Descamps & Mounassif 1972); Cirene (syntypi of *P. orientalis cyrenaica*), Derna, Merg, Djebel el Akhdar, Wadi el Kouf (Dj. el Akhdar) (Massa 1996, 1998); Berta VI.1938, 1♂, XII.1938, 1♀, G. Bullado (Museo Civico di Storia Naturale of Venice); El Kouf 30.VIII.2003, 1 nymph, R.



Fig. 3. Female of *Paracinipe adelaidae* Massa. Leptis Magna, 28 IV 2005. For color versions, see Plate IV.

Ientile; Al Wasita 2.IX.2003, 1♂, 1 nymph, R. Ientile; W. el Kouf 25.IV.2005, 3♀♀, B. Massa; Cirene 26.IV.2005, 5♂♂, 6♀♀ on *Rosmarinus* and *Phlomis*, B. Massa.

Note: Massa (1996) synonymized *Paracinipe orientalis cyrenaica* (Salfi 1926) with *Paracinipe orientalis* (Werner 1908) s. str., one of the types of the subspecies of Salfi coming from the type locality of the taxon of Werner; presently, a series of specimens from Cirene confirms they belong to the same taxon as do specimens of the Dj. El Akhdar and coastal areas of Cyrenaica.

Paracinipe adelaidae Massa, 1996 (Fig. 3)

Gasr Garian, Bu Gheilan, Tauorga (Salfi 1941, as *Acinipe saharae saharae*); Homs, Gasr Garian, Bu Gheilan, Tauorga, Leptis Magna (Massa 1996, 1998); Leptis Magna 28.IV.2005, 3♀♀, B. Massa.

Paracinipe baccettii Massa, 1996

Gasr Garabulli, Bengasi (Jannone 1938, as *Acinipe foreli*; Massa 1998); Ain Zara, Homs, Castel Benito (Salfi 1941, as *Acinipe saharae foreli*; Massa 1996, 1998).

Paracinipe marmarica (Salfi, 1924)

Zavia Mechili, Um Erzem (Giglio-Tos 1923, as *Acinipe foreli*); Tobruk (Salfi 1924, as *Acinipe marmarica*; Massa 1998); Maten Giofer, Ghemines, Bir Hacheim, Wadi Thamet, Scemek, Giado, (Salfi 1941; Massa, 1996, 1998); 40 miles S Mizda, Beni Ullid (Descamps & Mounassif 1972; Massa 1996, 1998); between P. Bardia and Giarabub (Massa 1998).

Pamphagus tunetanus Vosseler, 1902

Tripoli, S. Quedenfeldt, 1♂, 1♀ (Museum für Naturkunde, Berlin) (Fig. 4).

Note: this species, known only from Central-North Tunisia (Descamps & Mounassif 1972; Massa *et al.* 1993), is recorded for the first time in Libya. From this country recently Usmani (2007, 2008) reported *Pamphagus elephas* (L., 1758) (cf. "*species inquirendae*" below).

Ocneridia nigropunctata (Lucas, 1849)

Homs (Rizzardi 1896, as *Ocnerodes volxemii*); El Kumia (Massa & Biondi 1987, Massa 1998).

Pyrgomorphidae

Tenuitarsus angustus (Blanchard, 1836)

Jebel Soda, Wadi Ghadaifa, Tessaua, Mourzuk, 10 miles N Brak (Jebel Fezzan) (Mc Kevan 1959); Oasis Giarabub, Uadi Tanezzuft (Massa 1998); Wadi es Schebbenmaka, 70 km W Waw el Kebir 20.IV.1955, E. Jany (Museum für Naturkunde, Berlin).



Fig. 4. Phallic complex of *Pamphagus tunetanus* Vosseler 1902 from Tripoli, Libya (Museum für Naturkunde, Berlin).

Poekilocerus bufonius (Klug, 1832)

Uadi Tanezzuft, Serdeles (Salfi 1935a, as *P. b. bufonius*); Sebkhah Gurola, Murzuk, Ubari (Massa 1998, as *P. b. bufonius*); Tibesti, Uadi Giovani, Uadi Tanezzuft (Usmani 2008, as *P. bufonius hieroglyphicus*); Akakus 5.XI.2006, 2 nymphs, U. Pessolano.

Note: it should be verified if two subspecies, *P. b. bufonius* and *P. bufonius hieroglyphicus* (Klug 1829) live in Libya, the former in the northern part of the driest area, the latter in the southern part, where their host plant (*Calotropis procera*) occurs.

Leptea albotaeniata (Werner, 1908)

Tocra (Haimann 1882, as *P. granosa*); Tripoli, Tadschura, Gherran (Werner 1908b, as *Pyrgomorpha albotaeniata*; cf. also Mc Kevan *et al.* 1975; Mc Kevan & Hsiung 1990); 25 miles SW Tripoli, Castel Benito (Dirsh 1952, as *L. guichardi*), 5 miles W Gargarese (Mc Kevan *et al.* 1975).

Genus *Pyrgomorpha* Serville, 1838

Following Mc Kevan & Hsiung (1989), I considered the specimens with fastigium longer than wide, head and pronotum bearing distinct dots or granules, keel of pronotum not distinct and spines of pronotal lobes evident, as belonging to *P. conica* (Olivier, 1791). Specimens with fastigium wider than long, head and pronotum without small tubercles and pronotum keels more or less evident, I consider as belonging to *P. cognata* Krauss, 1877. I identified as *P. agarena* Bolivar, 1894, specimens bearing very small spines of the pronotal lobes, distinct pronotum keels and without dots or granules on the head and pronotum. It is evident that identification of species of this group is not easy; in fact, Mc Kevan & Hsiung (1989) consider that *P. cognata* recorded by Jannone (1938) should be referred to *P. conica tereticornis* (Brullé, 1840), as also pointed out by Massa (1998); they also believe that *P. conica* recorded by Salfi (1925, 1927a) could be *P. agarena cyrenaicae* Mc Kevan and Hsiung, 1989. Additionally, subspecific taxonomy of *P. conica* is not clear, particularly characters which serve to divide *P. conica conica* from *P. conica tereticornis*, and consequently their distributions are

not well known.

Pyrgomorpha conica (Olivier, 1791)

Tripoli, Dj. Teghrinna, Dernah (Werner 1908b); Merg, Tecnis, Bengasi, Derna, Cirene (Giglio-Tos 1923); Cirene, Bengasi (Salfi 1925); Giarabub, Agedabia, Tobruk, Ain Mara (Salfi 1927a); Agelat (Jannone 1938, as *P. cognata*); Homs, Porto Bardia, Brack, Giado, Bin Ullid, Auenat, Tegerhi, Agelat, Agedabia, Tagiura, Sabrata (Massa 1998); Tocra, Tolmetta, Khoms, Khor Al Jifah, Al Qatrun, Al Sbitat, Ashkidah, Bani Hilal, Hammera, Mahruqah, Marhaba, Misquwin, Murzuk, Qardah, Qirah, Ququm, Samnu, Sebha, Tamzawah, Tarut, Tegrutin, Traghan, Tsawah, Um Al Aranib, Zahra, Zalwaz, Zizaw, Zuwaylah (Usmani 2008).

Pyrgomorpha agarena cyrenaicae Mc Kevan et Hsiung, 1989
Tolmetta (Giglio-Tos 1923, as *P. conica*); Porto Bardia (Capra 1929, as *P. conica*); Latrun, Ras el Hilal, Derna, Merg (Mc Kevan & Hsiung 1989); Merg, Derna, Tocra, Tobruk, At Tmimi, 20 km E Derna (Massa 1998); Tocra 7.III.2005, 1♀, M. Sarà; 27.IV.2005, 2♂♂, 1♀, B. Massa; Wadi Kouf 25.IV.2005, 2♀♀, B. Massa; Tolmetta 24.IV.2005, 3♂♂, 2♀♀, B. Massa.

Pyrgomorpha cognata Krauss, 1877

Giarabub, Misurata, Uosca Valley-Djebel Soda (Capra 1929); Gat, Brach, Traghan (Salfi 1935a); Augila (Salfi 1935b); Tibesti (Chopard 1936); Giarabub, Misurata, Uosca-Djebel Soda, Murzuk, Sebha, Mizda, Western Sirtica, U. Sofeggin, Leptis Magna (Massa 1998); Ashkidah, Brack, Qardah, Qirah, Ququm, Maharuqah, Mansurah, Tamzawah, Tarut, Tmassan, Zahra, Zalwaz (Ajaili *et al.* 1989); Aqar Atabah, Al Abyad, Al Barkat, Al Breek, Al Garaya, Al Gatrut, Al Zighan, Arragabah, Awbari, Ben Hareth, Ed Disah, Garagra, Djebel Soda, Ghat, Ghodwa, Hammera, Idri, Jarmah, Khalayf, Majdul, Marhaba, Murzuk, Qattah, Samnu, Sebha, Sidi Ali, Tamanhant, Tegrutin, Tkerkibah, Um Al Aranib, Wanzarik, Zweyah (Usmani 2008).

Acrididae

Dericorys millierei Bonnet et Finot, 1884

Dernah (Werner 1908b); Bardia (Salfi 1927a); Gulf of Bomba (Capra 1929); U. Caàm (La Greca 1957); Tauorga, Giarabub, Bardia, At Tmimi, 20 km E Derna (Massa 1998).

Tropidopola cylindrica (Marschall, 1836)

Endschila (Werner 1908b, as *Opshomala cylindrica*); Ain Zara, Bu Kamesh (Salfi 1927b); Pisida, Tripoli, Garabul (Massa 1998); Qattah (Usmani 2008).

Tropidopola longicornis (Fieber, 1853)

Libya (Uvarov 1926); Hatiet Melfa (Capra 1929); At Tmimi (Massa 1998); Qattah (Usmani 2008).

Note: *T. cylindrica* and *T. longicornis* in the Mediterranean basin are allopatric, the former in the western part (up to Tripolitania and Fezzan), the latter in the eastern part (up to Cyrenaica and Crete); it seems that only in Fezzan (Qattah) do they coexist.

Calliptamus barbarus barbarus (Costa, 1836)

Tripoli, Ain Sarah, Gherran, Mimuna, Gharian-Gebirge, Dj. Gosseba, Dj. T'kut, Bengasi, Dernah (Werner 1908b, as *C. italicus*); Uadi Kuf, Uadi Derna, Apollonia, Merg, Tolmetta, Tocra (Giglio-Tos 1923, as *C. italicus*); Fuehat (Zanon 1924, as *C. italicus*); Derna (Salfi 1925, as *C. italicus*); Bardia (Salfi 1927a, as *C. italicus*); Ain Zara (Salfi 1927b, as *C. italicus*); Gulf of Bomba (Capra 1929, as *C. deserticola*); Homs, Misurata, Ain Zara, Gulf of Bomba, Bengasi-Tocra, Agedabia (Jannone 1938, as *C. barbarus deserticola*); Tripolitania (Jago 1963); Homs, Jefren, Agedabia, Gulf of Bomba, Tocra, Ain Zara (Massa 1998).

Calliptamus cyrenaicus Jago, 1963

Slonta, Jebel Akhdar, Shahhat, between Shahhat and Tokra, Derna, Saff Saff, Latrun (Jago 1963).

- Calliptamus wattenwylanus* (Pantel, 1896)
Cirene (Jannone 1937, 1938, as *C. okbaensis*; Massa 1998); El Marj, Slonta, Shahhat (Jago 1963); El Karsa 4.IX.2003, 2♂; El Kouf 30.VIII.2003, 2♀♀, R. Ientile.
- Sphodromerus marmaricus* Capra, 1929
Porto Bardia (Capra 1929; Salfi 1930a); Tobruk (Massa 1998).
- Sphodromerus tuareg* Uvarov, 1941
Bir Tesscia, Uadi Sofeggìn (La Greca 1957); Eifren (Dj. Nafusah) 18.III.2005, 1♀, M. Sarà.
Note: following Uvarov (1941), this species may be easily identified by the very large black spot inside its hind femurs and distinct pre-apical fasciae in the tegmina (character absent in *S. cyrenaicus*). The female from Eifren does not show the third character proposed by Uvarov (1941), i.e., tegmina extending a little beyond hind knees.
- Sphodromerus coerulans* Werner, 1908
Dj. Gosseba, Garian-Gebirge (Werner 1908b); Homs (Capra 1929; Massa 1998).
Note: Werner (1908b) described *Sphodromerus coerulans* on two females from Dj. Gosseba and the var. *intermedius* on a female from the highlands next to Garian, this latter being smaller, having head and pronotum without spots and transparent wings. Uvarov (1941) pointed out that it is impossible to clarify the status of this variety without examining further specimens, but Otte (1995) and Eades & Otte (2008) consider it as subspecies of *S. coerulans*. According to Capra (1929), specimens collected at Homs have yellow hind tibiae (not orange, as reported by Werner 1908b), showing that this character is variable.
- Euprepocnemis plorans plorans* (Charpentier, 1825)
Mell'aha, Ain Sarah, Endschila, Tripoli (Werner 1908b); Fuehat (Zanon 1924); Ain Zara (Salfi 1927b); Garian, Tagiura (Jannone 1938); Cufra, Sebka El Giof, (Massa 1998); Barca, Bengasi, Brack, Ed Disah, Traghan (Usmani 2008).
- Heteracris minuta* (Uvarov, 1921)
U. Caàm (La Greca 1957, as *Thisoicetrus littoralis minutus*); El-Gheria esc-Scherghia (La Greca 1969, as *T. littoralis minutus*); Abu Fakra (Grunshaw 1991).
- Heteracris littoralis* (Rambur, 1838)
Ain Sarah, Tripoli, Dj. T'kut (Werner 1908b, as *Thisoicetrus littoralis*); Derna, Chersa (Giglio-Tos 1923, as *Thisoicetrus littoralis*); Bengasi (Salfi 1925, as *T. littoralis*); Giarabub, Scegga (Salfi 1927a, as *T. littoralis*); Ain Zara, Bu Kamesh (Salfi 1927b, as *T. littoralis charpentieri*); Giarabub, Hatiet el-Fredga (Capra 1929, as *Thisoicetrus littoralis prope littoralis*); Giarabub, Homs (Capra 1929, as *Thisoicetrus littoralis charpentieri*); Wadi Hira, Bengasi, Tirrhe, Brak, Tibesti, Tesaua (Grunshaw 1991); Oasis Giarabub, Hatiet el-Fredga, Porto Bardia, Uadi Gerfen, Homs, Sabratha, Gatrùn (Massa 1998); Aqar, Brack, Maharuqah, Qardah, Qirah, Ququm, Tamzawah, Tarut, Wanzarik (Ajaili *et al.* 1989); Anfang, August, Ghirza (Chersa), Gebel T'kut, Umgebung, Al Abyad, Al Awaynat, Ben Hareth, Ed Disah, El Barakat, Fungul, Ghodwa, Khalayf, Samnu, Sebha, Tanahmah (Usmani 2008); Sebha 1937, 1♂, H. Muiche; Derna IX.1941, 3♂♂, 1♀, K. Deckert; Tripoli X.1931, 2♀♀ (Museum für Naturkunde, Berlin); Akakus 5.XI.2006, 1♂, 1♀, U. Pessolano.
- Heteracris adspersa* (Redtenbacher, 1889)
Bengasi, Sejanah (Werner 1908b, as *Thisoicetrus adspersus*); Labdah, Tmimi salt marsh (Grunshaw 1991); Wadi el Kouf 28.VIII.2003, 1♂, 1♀, R. Ientile.
- Heteracris harterti* (Bolivar, 1913)
Uosca Valley (Capra 1929, as *Thisoicetrus littoralis harterti*); Cufra: Haret el Hafun, El Talaab (Salfi 1934, as *Thisoicetrus littoralis harterti*); Brach, El Barakat (Salfi 1935a, as *Thisoicetrus littoralis harterti*); Tazerbo, Cufra, Augila, Gialo (Salfi 1935b, as *Thisoicetrus littoralis harterti*); Uosca Valley-Gebel Soda, Buema, Gialo, El Hauanizi (Cufra), O. Augila, El Teilib, Es Sahabi, Sebka El Giof (Massa 1998); Bengasi, Giarabub, Oasis Talab, Porto Bardia, Tripoli, Brack, El Barakat, Gebel Soda, Qattah (Usmani 2008).
- Heteracris annulosa* (Walker, 1870)
Derna, Suani, Garian (Grunshaw 1991); Lebda, Oasis Giarabub, Porto Bardia, Brach, Murzuk, Cufra, Garabul, Leptis Magna, At Tmimi, Tobruk, Sabrata (Massa 1998); Brak, Mahruqah, Qardah, Tamzawah, Wanzarik, Zahra, Zalwaz, (Ajaili *et al.* 1989); Ain Zara, Bu Kamesh, Homs, Tripoli, Al Abyad, Al Hamarah, Al Qatron, Al Zighan, Ben Hareth, Ed Disah, Fungul, Ghat, Ghodwa, Haj Hujail, Samnu, Sebha, Traghan, Zuwaylah (Usmani 2008).
- Cataloipus* sp.
Wadi Howa (Shaw 1933); Al Hamarah (Usmani 2008).
- Anacridium aegyptium* (L., 1764)
Tripoli, Meschia, Mimuna, Dernah (Werner 1908b, as *Locusta aegyptia*); Bengasi, Tolmetta, Merg, Derna (Giglio-Tos 1923, as *Orthacanthacris aegyptia*); Fuehat (Zanon 1924, as *Orthacanthacris aegyptia*); Giarabub, Cirene (Capra 1929); Sebha, Serdeles (Salfi 1935a); Cirene, Tripoli (Jannone 1938, as *Orthacanthacris aegyptia*); Ain Zara (Dirsh & Uvarov 1953); Tripoli, Mizda (La Greca 1957); Bengasi (Beccari & Gerini 1983, as *Orthacanthacris aegyptia*); Tripoli, Auenat, Homs, Cirene, Giarabub (Massa 1998); Brak, Mahruqah, Tamzawah (Ajaili *et al.* 1989); Ain Zara, Contrada Fornaci, Misurata, Mizda, Scegga, Augila, Barca, Ghemines, Gialo, Merg, Porto Bardia, Al Abyad, Al Awaynat, Al Qatron, Al Zighan, Ed Disah, Ghat, Ghodwa, Samnu, Sebha, Serdeles (Usmani 2008).
- Anacridium melanorhodon* (Walker, 1870)
Wadi Haya (Shaw 1933, as *melanorhodon*); Tripolitania (Dirsh & Uvarov 1953, as *arabafum*); U. Caàm (La Greca 1957, 1969, as *arabafum*); Al Barkat, Ghat, Al Qatron, Samnu, Sebha (Usmani 2008, as *melanorhodon*); Corradini, Tripoli, Tamzawah (Usmani 2008, as *arabafum*).
- Note: although it seems there is little likelihood of isolation between the last-mentioned subspecies in Libya, *A. m. melanorhodon* has been cited from Fezzan and *A. m. arabafum* Dirsh, 1953 from N Libya and Fezzan (Usmani 2008); their coexistence in the same region is unlikely.
- Ornithacris turbida turbida* (Walker, 1870)
Libya (C.O.P.R. 1982); Al Abyad (Usmani 2008).
- Schistocerca gregaria gregaria* (Forsk., 1775)
Misratah (Rizzardi 1896, as *S. peregrina*); Zavia Mechili (Giglio-Tos 1923, as *S. tatarica*); Fuehat (Zanon 1924, as *S. tatarica*); Gariunes (Kruger 1928, 1929a); Giarabub (Capra 1929, as *S. gregaria* var. *flaviventris*); Tripolitania (Di Cairano 1932); Gialo (Salfi 1930a); Cufra: Gebel Hauash, Haret el Hafun, Giardaba, Rebiana, Calauscio (Salfi 1934, as *S. gregaria* var. *flaviventris*); Sebha, Serdeles (Salfi 1935a); Tibesti (Chopard 1936); Bengasi (Jannone 1938); Ghar-ian el Garbia, U. Marsit (La Greca 1957); Nalut (Beccari & Gerini 1983); different localities of Libya (Popov *et al.* 1984, Fig. 12.3); Jebel el Hauaig, Ubairi, between Agedabia and Sirte (Massa 1998); Idri, Qatta, Qirah, Wanzarik (Ajaili *et al.* 1989); Augila, Barca, Al Qatron, Ed Disah, Ghat, Samnu, Tamanhant (Usmani 2008).
- Egnatioides coerulans* (Krauss, 1893)
Tripolitania (Chopard 1943).
- Egnatioides striatus* Vosseler, 1902
Tadschura (Werner 1908b); Scegga (Salfi 1927a, 1930a); Ain Zara, Bu Kamesh (Salfi 1927b, Massa 1998).
- Acrida turrita* (L., 1758)
Tripoli, Ain Sarah, Endschila (Werner 1908b); Derna (Giglio-Tos

1923); Fuehat (Zanon 1924); Ain Zara, Bu Kamesh (Salfi 1927b); Tibesti (Chopard 1936); Tripoli (Jannone 1938); Tagiura (Beccari & Gerini 1983, as *Truxalis turrita*); Tripoli, 20 km S Tripoli, Leptis Magna, Sabrata (Massa 1998); Barca, Bengasi, Brack, Mansurah, Tarot, Zahra (Usmani 2008).

Aiolopus strepens (Latreille, 1804)

Ain Sarah, Mell'aha, Endschila, Bengasi (Werner 1908b); Uadi Derna, Tolmetta, Merg, Wadi Kuf, Bengasi, Derna (Giglio-Tos 1923, as *Aeolopus strepens*); Derna, Bengasi (Salfi 1925); Bardia, Ain Mara (Salfi 1927a); Ain Zara (Salfi 1927b); Sebha (Salfi 1935a); Tazerbo, Marada, Gialo (Salfi 1935b); Libya (Hollis 1968); Gatrun, Brach, Murzuk, Ubari, Um el Araneb, Buema, Bengasi, Derna (Massa 1998); Ashkidah, Aqar, Brak, Mahruqah, Qardah, Ququm, Tamzawah, Tarut, Zahra, Zalwaz (Ajaili *et al.* 1989); Marada, Tripoli, Al Abyad, Al Barkat, Al Breek, Al Garaya, Al Hamarah, Al Hatiyah, Al Qatrun, Al Sbitat, Al Zighan, Arragabah, Awbari, Bani Hilal, Ben Hareth, GrAqara, Haj Hujeil, Jarmah, Khalayf, Majdul, Makhten, Marhaba, Misquwin, Murzuq, Samnu, Sebha, Tamanhant, Tkerkibah, Traghan, Tsawah, Zuwaylah (Usmani 2008); Derna IX.1941, 2♀, K. Deckert (Museum für Naturkunde, Berlin).

Aiolopus thalassinus thalassinus (Fabricius, 1781)

Bengasi (Haimann 1882); Derna, Tripoli (Werner 1908b); Derna, Fuehat (Giglio-Tos 1923); Derna, Bengasi (Salfi 1925); Bardia (Salfi 1927a); Tagiura (Jannone 1938); Mizda (Mellini 1955a; La Greca 1957); Libya (Hollis 1968); Homs, Brach, Cufra, El Giof, Buema, Agedabia, Murzuk, 25 km N Bengasi, Leptis Magna, At Tmimi, Sabrata (Massa 1998); Ashkidah, Brack, Idri, Mahruqah, Mansurah, Qardah, Ququm, Tamzawah, Tarut, Zahra, Zalwaz, Zuwayyah, Wanzarik (Ajaili *et al.* 1989); Barca, Ain Zara, Aqar Atabah, Al Abyad, Al Awaynat, Al Barkat, Al Breek, Al Garaya, Al Ghraeyfah, Al Hamarah, Al Hatiyah, Al Zighan, Arragabah, Awbari, Bani Hilal, Ben Hareth, Bint Bayyah, Ed Disah, GrAqara, Ghat, Ghodwa, Hammera, Jarmah, Khalayf, Makhten, Misquwin, Murzuk, Samnu, Sebha, Sidi Ali, Tamanhant, Tegrutin, Tkerkibah, Traghen, Tsawah, Um Al Aranib, Zuwaylah (Usmani 2008); El Karsa 4.IX.2003, 1♀, R. Ientile.

Note: Ajaili *et al.* (1989) also report *A. thalassinus tamulus* (Fabricius 1798) from Ashkidah, Brack, Ququm, Tamzawah, Tarut and Zuwayyah, but the coexistence of two subspecies is unlikely.

Aiolopus simulatrix (Walker, 1870)

Kufra, Aqar Atabah, Al Qatrun, Al Zighan, Aqar, Ashkidah, Brak, Idri, Mahruqah, Qardah, Qattah, Qirah, Ququm (Damiano 1969, Popov 1975, Ajaili *et al.* 1989); Al Abyad, Al Awaynat, Al Barkat, Al Garaya, Al Gharayfah, Awbari, Ben Hareth, Ed Disah, Fungul, GrAqara, Ghat, Ghodwa, Makhten, Murzuk, Samnu, Sebha, Tamanhant (Usmani 2008).

Calephorus compressicornis (Latreille, 1804)

Ain Sarah, Endschila (Werner 1908b); Ain Zara (Salfi 1927b; Massa 1998); Tibesti (Chopard 1936); Bengasi, Tagiura (Jannone 1938, as *C. venustus*; Massa 1998); Pisida (Massa 1998); Idri, Tarot (Usmani 2008); Tripoli X.1931, 2♂, 1♀, G. Hecht (Museum für Naturkunde, Berlin).

Duroniella lucasii (Bolivar, 1881)

Tagiura (Werner 1908b, as *Phlaeoba fracta*); Ain Zara (Salfi 1927b); Hatiet el Fredga (Capra 1929); Socna, Traghen, Pisida, At Tmimi (Massa 1998); Idri, Qirah (Ajaili *et al.* 1989, Usmani 2008). Cf. *Duroniella fracta* within "*species inquirendae*".

Locusta migratoria (L., 1758)

Ain Sarah, Derna (Werner 1908b, as *Pachytylus danicus*); El Fetejah, Derna, Uadi Derna (Giglio-Tos 1923, as *L. danica*); Fuehat (Zanon 1924); Derna (Salfi 1925, as *L. danica*; Beccari & Gerini 1983); Ain Mara (Salfi 1927a, as *L. danica*); Cirene, Tagiura (Jannone 1938);

Homs (Massa 1998); Qirah, Ququm, Tamzawah, Tarut, Zahra (Ajaili *et al.* 1989); Barca, Bengasi, Kufra, Tocra, Tripoli, Al Abyad, Al Awaynat, Al Garaya, Al Harnarah, Al Qatrun, Al Tanahmah, Ben Hareth, Bint Bayyah, Ghat, Ghodwa, GrAqara, Khalayf, Majdul, Samnu, Sebha (Usmani 2008).

Oedaleus decorus decorus (Germar, 1826)

Apollonia, Wadi Kuf (Giglio-Tos 1923, as *O. nigrofasciatus*); Fuehat (Zanon 1924, as *O. nigrofasciatus*); Derna (Salfi 1925, as *O. nigrofasciatus*); Gulf of Bomba (Capra 1929; Massa 1998); Libya (Ritchie 1981).

Oedaleus senegalensis (Krauss, 1877)

Leptis Magna (La Greca 1957; this record is not reported by Ritchie 1981); Ashkidah (Usmani 2008).

Oedipoda miniata miniata (Pallas, 1771)

Tripoli, Ain Sarah, Gherran, Bengasi, Derna, Assisia, Dj. T'kut (Werner 1908b, as *O. gratiosa*); Tolmetta, Uadi Derna, Tecnis, Merg, Chersa, Apollonia, Ghemines, Tocra, Fuehat (Giglio-Tos 1923, as *O. salina*); Bengasi, loc. Berka (Zanon 1924, as *O. salina*); Bengasi (Salfi 1925, as *O. salina*; Jannone 1938); Ain Zara (Salfi 1927b); Uadi Gerfen, Gulf of Bomba (Capra 1929); Leptis Magna (La Greca 1957); Homs, Uadi Gerfen, between Bengasi and Tocto, Bu Hadi (Massa 1998); Giuliana, Porto Bardia, Aziziyah, Gharian, Girza, Brack (Usmani 2008).

Oedipoda fuscocincta coelestina Uvarov, 1923

Cirene (Uvarov 1923); Fuehat (Zanon 1924, as *O. fuscocincta*); U. Merdam (Massa 1998); Bengasi, Sebha (Usmani 2008); W. el Kouf 30.VIII.2003, 1♂, 1♀, R. Ientile.

Oedipoda caerulescens (L., 1758)

Gherran, Mimuna, Dj. Gosseba, Dj. Gharian, Dj. T'kut, Derna (Werner 1908b); Fuehat (Zanon 1924).

Acrotylus longipes (Charpentier, 1843)

Tagiura, Sabrata (Massa 1998).

Acrotylus insubricus inficitus (Walker, 1870)

Tripoli, Ain Sarah, Tadschura, Bengasi, Derna (Werner 1908b, as *A. versicolor*); Tocra, Ghemines, Tolmetta, Fuehat, Derna (Giglio-Tos 1923); Giarabub (Salfi 1927a); Ain Zara, Bu Kamesh (Salfi 1927b); Porto Bardia, Uadi Gerfen, Giarabub (Capra 1929); Tagiura (Jannone 1938); Gialo (Salfi 1930a); Oasi di El Talaab, Rebiana, Haret el Hafun (Salfi 1934, as *A. patruelis*: cf. Salfi 1935b); El Giof, Augila, Esc Scherruf (Gialo) (Salfi 1935b); U. Sofeggin (Mellini 1955a); Tripoli, Garian, Leptis Magna, U. Sofeggin (La Greca 1957); Sebha, Giarabub (Baccetti & Capra 1988, as *A. maculatus inficitus*); Cufra (La Greca 1992); Homs, Gat, Sebha, Cirene, At Tmimi, Tobruk, Sabrata (Massa 1998); Ashkidah, Aqar, Brak, Mahruqah, Mansurah, Qardah, Qirah, Ququm, Tamzawah, Tarut, Tmassan, Wanzarik, Zalwaz (Ajaili *et al.* 1989); Barca, Cufra, Fuehat, Aqar Atabah, Al Awaynat, Al Abyad, Al Barkat, Al Breek, Al Ghayfa, Al Garaya, Al Hamarah, Al Hatiyah, Al Qatrun, Al Sbitat, Al Tanahmah, Al Zighan, Arragabah, Awbari, Bani Hilal, Ben Hareth, Bint Bayyah, Fungul, Garagra, Ghat, Ghodwa, Haj Hujail, Hammera, Jarmah, Khalayf, Idri, Majdul, Marhaba, Murzuq, Qattah, Samnu, Sebha, Sidi Ali, Tamanhant, Tegrutin, Tkerkibah, Traghan, Tuwash, Zizaw, Zuwayyah (Usmani 2008).

Acrotylus patruelis patruelis (Herrich-Schaeffer, 1838)

Fuehat (Zanon 1924); Derna, Bengasi (Salfi 1925); Gat, Sebha (Salfi 1935a, cf. *A. insubricus*); Ca Geven, Misurata, Homs, Oasis Giofra, Gheddahia, Bu Hadi, Auenat, Tegerhi, Murzuk, Gatrun, Gialo, Agedabia, Augila, El Giof, Sebka Buema (Massa 1998); Ashkidah, Aqar Atabah, Brack, Idri, Mahruqah, Mansurah, Qardah, Qattah, Ququm, Tamzawah, Tarut, Tmassan, Wanzarik, Zahra, Zalwaz (Ajaili *et al.* 1989); Giarabub, Haret El Hafun, Oasis El Talaab, Rebiana, Al Awaynat, Al Barkat, Al Ghayyah, Al Qatrun, Al Sbitat,

Al Zighan, Awbari, Bani Hilal, Bint Bayyah, Fungal, Ghat, Ghodwa, Hammera Idri, Majduh, Marhaba, Murzuq, Samnu, Sebha, Sidi Ali, Tamanhent, Traghan, Zizaw, Zuwaylah (Usmani 2008); W. el Kouf 30.VIII.2003, 1♂, R. Ientile; Wadi el Sahel 28.VIII.2003, 1♀, R. Ientile; Tocrá lagoon 27.IV.2005, 1♂, B. Massa; Leptis Magna 28.IV.2005, 2♀, B. Massa.

Helioscirtus capsitanus capsitanus (Bonnet, 1884)

Carcura, Msus (Massa 1998).

Helioscirtus gravesi Uvarov, 1924

Scegga (Salfi 1927a, 1930a).

Note: according to Uvarov (1924) it is characterized by irregular intercalary venation subparallel to R_1 , neither next to it, nor serrulated. Description was based on a single female, of which Uvarov (1924) wrote: "The specimen probably has been killed before it developed its definite imaginal coloration". Although he mentioned the very pale ochraceous coloration of the hind tibiae, he did not state the color of the hind femurs. Afterwards, Salfi (1927a) completed the description of the female, describing also the males, that their hind tibiae are pale yellow with some gradation of green-yellowish; but he did not mention hind femurs.

Helioscirtus grandii La Greca, 1957

Mizda (Mellini 1955a); Hamada el-Hamra (La Greca 1957).

Note: La Greca (1957) considered *H. grandii* much related to *H. gravesi*, from which he distinguished it for its intercalary venation, in the distal third very close to M_1 without touching it, for a cubital area larger than M_1 , bearing a more irregular reticulation, thicker and distributed on different lines, and for hind tibiae bearing 8 spines on the outer side, 11 on the inner side (*H. gravesi* has 5-6 and 8-9 spines, respectively). Black coloration of the inner side of the hind femurs is a character shared with other species of the genus *Helioscirtus*. This includes *H. capsitanus*, for which La Greca (1957) fails to record differences from *H. grandii*, and to which it is probably related, having the intercalary venation sinuous and close to R_1 , but not merging with it, and having hind tibiae yellowish (cf. key proposed by Uvarov 1924). The three species of *Helioscirtus* listed above share the presence of a couple of callosities on the pronotum, right and left of the median carina and before the transverse sulcus; this character separates them from such middle-eastern species as *H. moseri* Saussure 1884.

Hyalorhipis calcarata (Vosseler, 1902)

Ain Zara (Salfi 1927b); Bengasi (Jannone 1938); Mizda-S. Fessano (La Greca 1957); U. Caam, U. Sofeggin (La Greca 1969); Homs, Gialo, (Massa 1998); Brack (Usmani 2008).

Hyalorhipis rhamses (Saussure, 1889)

Tripoli, Ain Sarah, Tadschura (Werner 1908b, as *Leptopternis rhamses*).

Leptopternis gracilis (Eversmann, 1848)

Tripoli (Werner 1908b, as *Sphingonotus grobbeni*); Mizda, U. Sofeggin (Mellini 1955a, 1955b); Mizda-S. Fessano (La Greca 1957, 1994); Uosca Valley-Gebel Soda, Agheila (Massa 1998).

Leptopternis maculata Vosseler, 1902

Tripoli (Werner 1908b, as *Sphingonotus acrotyloides*); Ain Zara, Bu Kamesh (Salfi 1927b, as *Hyalorhipis maculata*); Homs (Massa 1998); Brack (Usmani 2008).

Note: the genus *Leptopternis* Saussure, 1884 differs from *Sphingonotus* Fieber, 1852 in some (not always evident) characters, such as inner spurs of hind tibiae just longer than half metatarsus, rounded posterior angle of lateral lobes of pronotum and fore femurs very thin (cf. La Greca 1994). *L. maculata* actually may bear a spiniform process on the pronotal lobes (according to Fishelson 1985: "obtusate or with a short process"), as in the case of Libyan specimens

examined. Because the length of hind spurs cannot be considered an exclusive character of *Leptopternis* (La Greca 1994), as a common character of this genus there only remains the thinness of fore femurs. *L. maculata* shows another character distinctive from *L. gracilis* (Eversmann, 1848), namely mesosternal space width ca 3 times its length, a character shared with *Sphingoderus carinatus* (Saussure, 1888) and the Sardinian species *Sphingonotus candidus* (Costa, 1888).

Sphingoderus carinatus (Saussure, 1888)

Jefren (Massa 1998).

Sphingonotus savignyi savignyi Saussure, 1884

Mizda, U. Sofeggin (Mellini 1955a, 1955b; La Greca 1957); Gialo, Gheddaia Bir Seifa, Uadi Tihubar, Gat, Augila, Tripoli (Massa 1998); Brack (Usmani 2008).

Note: Benediktov (1997) synonymized the gen. *Pseudosphingonotus* Shumakov, 1963 with *Sphingonotus* Fieber, 1852, because of the similar type of stridulatory apparatus, considered as the most important taxonomic character; *S. savignyi* was previously considered to belong to *Pseudosphingonotus*, though some authors doubted it (cf. Descamps 1970; Johnsen 1985). Défaud (2005b) reinstated *Pseudosphingonotus*, later synonymized with *Sphingonotus* by Hochkirch & Husemann (2008).

Sphingonotus azureus (Rambur, 1838)

Bengasi (Haimann 1882), Tripoli, Bengasi, Dernah (Werner 1908b); Fuehat (Zanon 1924); Cirene, Derna, Bengasi (Salfi 1925); Cirene (Salfi 1927a); Ain Zara, Bu Kamesh (Salfi 1927b); Tripoli, Barka (Mistshenko 1936); Homs (Massa 1998).

Sphingonotus octofasciatus (Serville, 1839)

Tobruk (Salfi 1927a); Tripoli (Mistshenko 1936); Mizda, U. Sofeggin (La Greca 1969); U. Mimuna (Massa 1998).

Sphingonotus obscuratus obscuratus (Walker, 1870)

Scegga, Augila (Salfi 1927a, 1930a); Barka (Mistshenko 1936); Mizda, U. Sofeggin (Mellini 1955a, 1955b; La Greca 1957); U. Fruten (La Greca 1969); Gialo (Massa 1998); Brack, Qattah (Usmani 2008). Note: Usmani & Ajaili (2000, 2001) described *Sphingonotus obscuratus sammouensis* on three females collected at Samnu (Sebha), characterized by a median keel distinct along the whole length of the metazona except at posterior margin, length of metazona about twice as long as prozona, apical part of tegmina transparent without brown spot, the basal third brownish. Additionally, Usmani (2008) records *Sphingonotus obscuratus lameerei* Finot, 1902, from Brack and Al Barkat (Ghat); but the coexistence of three subspecies in Fezzan is unlikely.

Sphingonotus luteus Krauss, 1893

Gheddaia, Misurata (Massa 1998).

Sphingonotus eurasius Mistshenko, 1936

Porto Bardia (Salfi 1927a, as *S. azureus*); Bu Kamesh (Salfi 1927b, as *S. callosus*); Tripoli (Mistshenko 1936); U. Merdam, Bardia (Massa 1998).

Sphingonotus tricinctus (Walker, 1870)

Tripoli, Bengasi, Dernah (Werner 1908b, as *S. balteatus*); Barka, Cirene (Salfi 1930a); Gherran, (Mistshenko 1936); Leptis Magna (La Greca 1957); U. Caam (La Greca 1969); U. Merdam, Misurata, Homs, Agedabia, Agheila (Massa 1998).

Sphingonotus rubescens rubescens (Walker, 1870)

Scegga, Giarabub (Salfi 1927a, Capra 1929); Tibesti (Chopard 1932, 1936); Augila (Salfi 1930a); 15 Km E Ain Dona (Auenat), Ain Dona, Arkenu (Salfi 1934); Sebha, Uadi Tanezzuft (Salfi 1935a); Tripoli, Barka (Mistshenko 1936); Mizda, U. Sofeggin (Mellini 1955a, 1955b); U. Marsit, Gariàn, Ghèria esc-Scerghia, Hamada el-Hamra (La Greca 1957); U. el-Beda, U. Fruten, esc-Sciuref (La Greca 1969);



Fig. 5. *Dociostaurus maroccanus* (Thunberg): some males competing to pair with an egg-laying female. Tocrá lagoon 27.IV.2005, where this species was plentiful. For color versions, see Plate IV.

Murzuk, Um El Abib, Carcura, Marada, Homs, Jefren, Uadi Zuasa, U. Merdam, Gebel es Soda, Bin Ullid, Giado, Cufra, Ghadames, Bend-beia, Bu Kamesh, Gat, Ain Zara, Garian (Massa 1998); Agedabia, Gialo, Libyan desert, Port Bardia, Al Qatrun, Brack, Ghat, Samnu, Sebha, Tibesti, Uadi Tenezzuft (Usmani 2008); Sebha 18.IV.2005, 1♀, B. Massa; Mathendusc 22.IV.2005, 1♂, B. Massa.

Sphingonotus caeruleus exornatus Nedelkov, 1907

Tripoli, Dj. Gharan, Dj. Teghrinna (Werner 1908b); Fuehat (Zanon 1924); Bengasi, Qasr Bin Ghashir, Brack (Usmani 2008). Note: according to Défaut (2005a) the presence of *Sphingonotus caeruleus* in North Africa has yet to be confirmed.

Sphingonotus vitreus brevipes La Greca, 1957

Mizda (Mellini 1955a, as *S. vitreus*); Hamadael-Hamra (La Greca 1957).

Sphingonotus brackensis Usmani, 2008

Brack (Al Shati) (Usmani 2008, 2008b).

Scintharista notabilis notabilis (Walker, 1870)

Uadi Dimar (Massa 1998).

Thalpomena dernensis (Werner, 1908)

Dernah (Werner 1908b, as *Sphingonotus dernensis*; Ramme 1951, as *T. libyana*; Massa 1998); Bengasi (Salfi 1925, as *Sphingonotus dernensis*); Porto Bardia (Salfi 1927a); Al Wasita 2.IX.2003, 2♂♂, R. Intile. Note: the short description of Werner (1908b) was improved by Salfi (1927a), who correctly ascribed this species to *Thalpomena* Saussure. However Dirsh (1949) did not read the paper by Salfi, omitting this species in his revision. Probably for this reason Ramme (1951: 403, note 1) described *Thalpomena libyana* on a couple of specimens collected on September 1947 at Derna, type locality of *T. dernensis*. Massa (1998) synonymized *Thalpomena libyana* Ramme 1951 with *Thalpomena dernensis* (Werner 1908): synonymy here confirmed after comparison with Ramme's specimens (Museum für Naturkunde, Berlin). New records are the only ones since 1947.

Dociostaurus maroccanus (Thunberg, 1815) (Fig. 5)

Tripoli (Werner 1908b); Tolmetta, Apollonia, Ghemines (Giglio-Tos 1923); Fuehat, Bengasi (Zanon 1924); Cirene (Salfi 1925); Barce (Beccari & Gerini 1983); 25 Km N Bengasi (Massa 1998); Tocrá lagoon 27.IV.2005, B. Massa, 2♂♂, 4♀♀, B. Massa.

Dociostaurus jagoi jagoi Soltani, 1978

Ain Sarah, Tadschura, Gherran, Bengasi (Werner 1908b, as *D. genei*); Bengasi (Salfi 1925, as *D. genei*); Bardia (Salfi 1927a, as *D. genei*); Ain Zara, Bu Kamesh (Salfi 1927b, as *D. genei*); Tobruk (Kruger 1929b, as *D. genei*); Tagiura (Jannone 1938, as *D. genei*); Leptis Magna, Saff Saff, Slonta, Dj. el Akhdar (Soltani 1978); Pisida (Massa 1998).

Ochrilidia geniculata (Bolivar, 1913)

Tobruk (Salfi 1924, 1931, as *Platypterna lybica*); Giarabub (Salfi 1927a, 1931, as *P. lybica*); Agedabia (Salfi 1927a, holotypus *Platypterna pruinosa agedabiae*); Hatiet el-Fredga (Capra 1929, as *P. lybica*); Bu Kamesh, Agedabia, Bengasi (Salfi 1931); Gialo (Salfi 1931, as *P. rothschildi*); Serdeles (Salfi 1935a); Tibesti (Chopard 1936); U. Sofeggin, esc-Sciuerel (La Greca 1969); Marmura, Nalut, Miaghi, Azizia, Castel Verde, Dj. Fezzan, El Manakh, Giado, Agheila-Agedabia, Mangub, Garian, Carradine, Gargarese, Leptis Magna, Dj. Soda, Sebha, Brak, Traghen, Tիրիհ (Jago 1977); Tobruk (holotypus di *Platypterna lybica* Salfi 1924), Bengasi-Gariunes, Auenat, Gebel es Soda, Tagiura (Massa 1998); Mahruqah, Qirah, Tamzawah, Zalwaz (Ajaili *et al.* 1989); Barca, Brega, Wadi Bregah, Bianchi (Tripoli), Khor Al Jifah, Wadi Gadafia, Wadi Targent, Al Awaynat, Al Barkat, Al Zighan, Brak, Edre, Ed Disah, El Gatroun, El Manakh, Ghat, Ghodwa, Jebel Fezzan, Jebel Soda, Sebha, Serdeles, Tibesti, Tիրիհ, Traghen, Tsawah, Zouilla (Usmani 2008); Hon Oasis 1937, 1♂, 3♀♀, H. Muche (Museum für Naturkunde, Berlin); Waw el Namous 20.IV.2005, 1♂, 1♀, B. Massa.

Note: the identification of species belonging to the Genus *Ochrilidia* Stål, 1873 generally needs male dissection and observation of epiphallus from above and in lateral view, as suggested by Jago (1977) and Mistshenko (1986). Salfi (1931) separated *O. lybica* (Salfi, 1931) from *O. geniculata* by its shorter tegmina, the subangular shape of the inner border of the mesosternal lobes, more cylindrical pronotum and generally stouter aspect; these are characters quite variable within the geographical range of *O. geniculata*, and thus not serving to separate these taxa. Epiphallus of specimens coming from Giarabub and Hatiet el Fredga, identified as *Platypterna lybica* by M. Salfi and F. Capra, lies within the variability of *O. geniculata*; in fact, following the terminology of Jago (1977), in lateral view the lobe "c" of the epiphallus is visible and is more or less at the same level as "b", whereas the lobe "d" is about two times the length of "c". For this reason Massa (1998) synonymized *Platypterna lybica* Salfi, 1924 with *Ochrilidia geniculata* (Bolivar, 1913), as already supposed by Jago (1977).

Additionally, Salfi (1931) himself considered *Ochrilidia pruinosa agedabiae* (Salfi, 1927) a synonym of *O. geniculata*; in fact, the epiphallus of the type of *O. pruinosa agedabiae* matches very well with that of the former: its antennal segments are clearly flattened, foveolae are ca 3 times longer than wide, with sharp borders, visible from above, and the ratio length/height of hind femurs is 4.45. Concerning the specimens identified by M. Salfi as *Platypterna rothschildi* (Bolivar, 1913) and *O. kraussi* (Bolivar, 1913), they lie also within *O. geniculata* variability; indeed, they are considered its synonyms by Jago (1977) and Mistshenko (1986).

Ochrilidia filicornis (Krauss, 1902)

Tripoli, Endschilda, Ain Sarah, Bengasi (Werner 1908b, as *P. tibialis*); Bengasi, palm grove of El Menestre (Giglio-Tos 1923, as *P. tibialis*); Bengasi (Salfi 1925, as *P. tibialis*); Libia (Jago 1977, as *O. tibialis*); Bengasi (Massa 1998); Aqar Atabah, Al Awaynat, Al Zighan, Brak, Ed Disah, Fungul, Ghat, Marhaba, Murzuk, Qattah, Qirah, Ququm, Samnu, Sebha, Tamanhant, Tamzawah, Tibesti, Traghen, Tsawah, Uadi Tanezzuft (Usmani 2008 as *O. tibialis*).

Note: following the key to species by Jago (1977), all *Ochrilidia*

with only weakly flattened antennal segments should belong to *O. tibialis* (Fieber 1853), but Mistshenko (1986) considers that at least seven species listed by Jago (1977) as synonyms of *O. tibialis* have to be considered as valid species; among them *O. filicornis*, a species widespread in North Africa and the Middle East (cf. also Harz 1975). *O. pruinosa* and *O. tibialis*, are probably localized only on some Greek islands and have to be excluded from the Libyan fauna (they lack flattened antennae, have foveolae with sharp borders and ratio length/height of hind femurs of as much as 3.8-4.2). Salfi (1927a) considered that *Platypterna tibialis* from Bengasi (palm grove of El Menestre) recorded by Giglio-Tos (1923), should belong to *P. lybica* (cf. *O. geniculata*), but eventually it was determined as *O. filicornis*, a species with antennal segments weakly flattened, thus more similar to *O. tibialis* than to *O. geniculata*.

Ochrilidia gracilis gracilis (Krauss, 1902)

Ain Zara, Bu Kamesh (Salfi 1927b, 1931, as *Platypterna gracilis*); Buema, Rebiana, El Giof, El Giululab, Tazerbo (Salfi 1934, as *Platypterna gracilis*); Sebha, Gat (Salfi 1935a, as *Platypterna gracilis*); Marada, Gialo (Salfi 1935b, as *Platypterna gracilis*); Tagiura (Jannone 1938, as *Platypterna gracilis*); Marmura, Ain Zara, Bianchi, Tagiura, Tripoli, Gargarese, Traghen (Jago 1977); Cufra, Mizda, Gat, Auenat, Buema (Massa 1998); Qirah, Ququm, Tamzawah (Ajaili *et al.* 1989); Aqar Atabah, Al Abyyad, Al Barkat, Al Hamarah, Ben Hareth, Beni Hilal, Bint Bayyah, Fungul, Garagra, Ghodwa, Khaliayf, Murzuk, Samnu, Sebha, Sidi Ali (Usmani 2008); Sebha 1937, 1♂, 1♀, H. Muche; Tripoli X.1931, 1♂, G. Hecht (Museum für Naturkunde, Berlin).

Ochrilidia harterti (Bolivar, 1913)

Brack, Qattah, Qirah, Ququm, Tamzawah (Ajaili *et al.* 1989); 150 km SE Sebha 19.IV.2005, 1♂, 1♀, B. Massa.

Note: according to Jago (1977) and Mistshenko (1986), this species is known from Saharan localities and some dry areas of North Africa (Algeria, Egypt); even if it has been recorded from Fezzan by Ajaili *et al.* (1989), Usmani (2008) does not include it within Fezzan Acrididae. It is present also in North Chad, thus the presence in Libya was expected.

Ochrilidia alshatiensis Usmani *et al.* 1991

Brack (Al Shati) (Usmani & Ajaili 1991); Ashkidah, Brack, Mahruqah, Qardah, Qirah, Ququm, Tamzawah, Tarut, Zahra, Zalwaz (Usmani 2008).

Note: according to Usmani & Ajaili (1991), this species is related to *O. popovi* and probably also to *O. acuta* and *O. gracilis*.

Ramburiella hispanica (Rambur, 1838)

Fuehat (Zanon 1924); Ain Zara (Salfi 1927b; Massa 1998); Leptis Magna (La Greca 1957).

Euchorthippus albolineatus albolineatus (Lucas, 1849)

Ain Sarah, Endschila (Werner 1908b, as *Chorthippus pulvinatus*); Ain Zara (Salfi 1927b, as *C. pulvinatus*; Massa 1998); 30 km SW Tripoli (Ragge & Reynolds 1984).

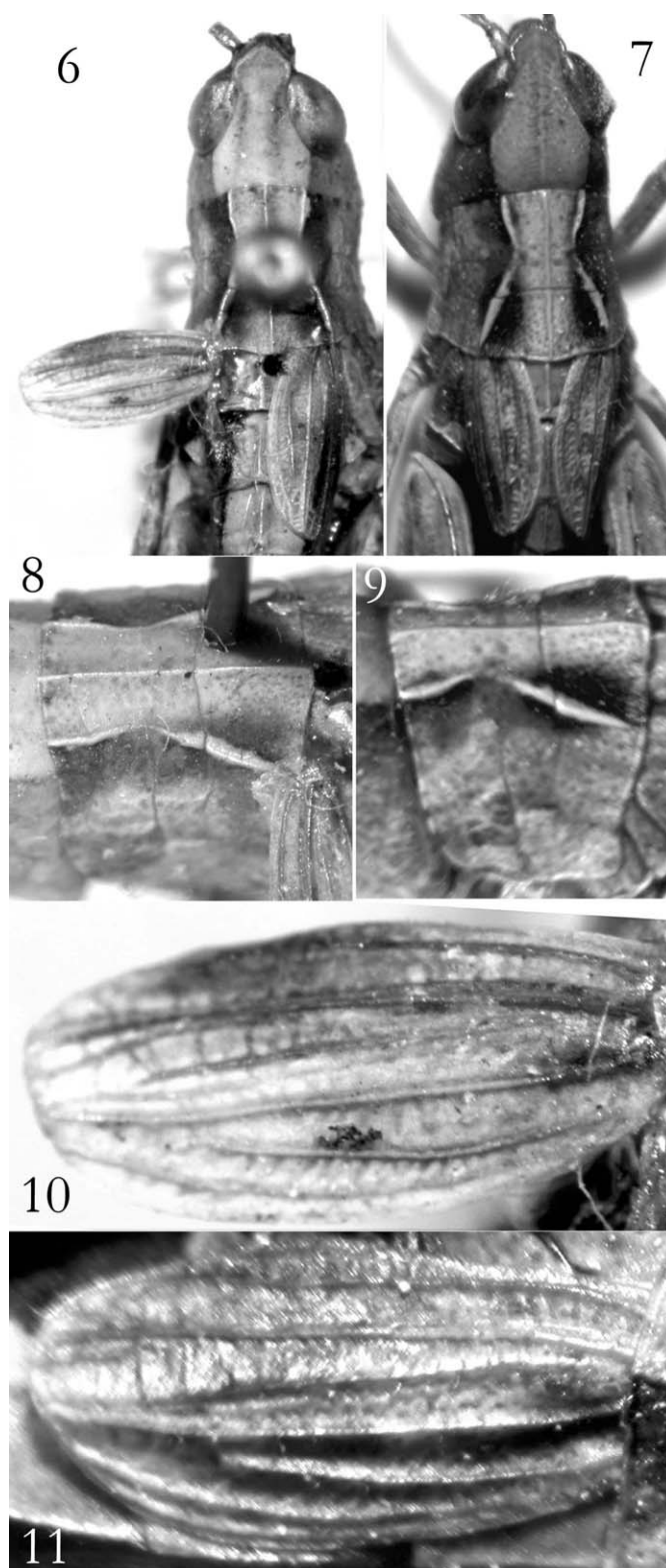
Omocestus africanus Harz, 1970

Ain Mara (Salfi 1927a, as *O. raymondi*); Agedabia, Homs (Massa 1998).

Omocestus fontanai Massa, 2004

Derna (Giglio-Tos 1923, as *Stenobothrus crassipes* ?); El Kouf (Massa 2004); Garian X.1931, G. Hecht, 1♀ (Museum für Naturkunde, Berlin).

Note: Giglio-Tos (1923) cited (dubiously) from Cyrenaica *Stenobothrus crassipes* (Charpentier 1825), a European species characterized by very short tegmina; Salfi (1930a) doubted this record, later reported by Dirsh (1965). Massa (1998) believed the specimen belonged to *Omocestus africanus*. After the finding of a new short-winged *Omocestus* in Libya (*O. fontanai*), it seems more



Figs 6-11. Comparison between females of *Omocestus fontanai* Massa (Museum für Naturkunde, Berlin) (Figs 6, 8, 10) and *Omocestus lopadusae* La Greca (Coll. B. Massa, University of Palermo) (Figs 7, 9, 11).

probable that *Stenobothrus crassipes* (*sensu* Giglio-Tos 1923) from Derna, actually was *Omocestus fontanai*.

Description of the female (Figs 6-11). The female specimen preserved in the Museum für Naturkunde of Berlin is labelled "*Omocestus squamipterus* n. sp. in litteris Ramme", but the German orthopterologist never did describe it. When I described *Omocestus fontanai* on a male from Cyrenaica (Libya), I compared it with the most related species, namely *O. lopadusae* La Greca, 1973, endemic to Lampedusa Is. (Sicilian Channel) (Massa 2004). Differences between females of *O. fontanai* and *O. lopadusae* are the following: in the former, fastigium foveolae show flat borders, in the latter sharp edges; the ratio between maximum and minimum distance of pronotum lateral keels in *O. fontanai* is 1.5, in *O. lopadusae* 1.6 (in the latter the X-shape of the pronotum is more marked); the ratio between prozona and metazona is 1.7 in *O. fontanai* and 1.4 in *O. lopadusae*; the ratio between length and width of tegmina is 2.0 in *O. fontanai* and 1.7 in *O. lopadusae*. In both species tegmina are not overlapped and do not exceed the second abdominal tergite; wings are rudimentary. *O. fontanai* lives from Cyrenaica to Tripolitania; probably its very small size and elusive habits make it very difficult to detect and for this reason so far only two specimens of this species are known, one male and one female.

Truxalis nasuta (L., 1758)

Homs (Rizzardi 1896, as *T. rosea*); Tocrá, Barka (Haimann 1882, as *Acrida unguiculata*); Tripoli, Gharian, Bengasi, Dernah (Werner 1908b, as *Acridella variabilis*); Ghemines (Giglio-Tos 1923, as *Acridella nasuta*); Fuehat (Zanon 1924, as *Acridella nasuta*); Tobruk (Salfi 1924, as *Acridella nasuta*); Giarabub (Salfi 1927a, as *Acridella unguiculata*); Bu Kamesh (Salfi 1927b, as *Acridella unguiculata*); Gulf of Bomba, Porto Bardia (Capra 1929, as *Acridella nasuta*); Gat, Traghen (Salfi 1935a, as *Acridella unguiculata*); Gialo (Salfi 1935b, as *Acridella unguiculata*); Tibesti (Chopard 1936); Mizda (Mellini 1955a); U. Caàm, Leptis Magna (La Greca 1957); Libya (Dirsh 1965); U. Sofeggin, U. Fruten (La Greca 1969); Misurata, Homs, Tripoli, Murzuk, 20 Km S Tripoli, Tagiura (Massa 1998); Idri, Mahruqah, Tamzawah, Tmassan (Ajaili *et al.* 1989); Castel Benito, Al Hamarah, Al Tanahmah, Awbari, Ben Hareth, Brak, Ghat, Ghodwa, Marhaba, Samnu, Sebha, Tamanhant, Tibesti, Traghen (Usmani 2008); Wadi el Sahel 28.VIII.2003, 1♂, R. Ientile; Tolmetta 24.IV.2005, 1♂, 1♀, B. Massa; Sebha 18.IV.2005, 1♂, B. Massa.

Eremogryllus hammadae Krauss, 1902

Tripolitania (Chopard 1943); Agheila, Agedabia, 60 km E Sirte, Ras Lanuf, Tagiura (Massa 1998).

Notopleura saharica Krauss, 1902

Gheddaia, Bin Ullid (Massa 1998).

Species inquirendae

The presence in Libya of the following species is not clearly confirmed for the reasons given.

Acinipe expansa (Brunner von Wattenwyl, 1882)

Usmani (2007, 2008) cites it from Ghat, Al Barkat (Fezzan). *Acinipe expansa* has been synonymized with *A. tibialis* (Fieber 1854) (Descamps & Mounassif 1972, Harz 1975, Biondi & Massa 1995), a Moroccan-Iberian species. However, the specimen depicted by Usmani (2007, Figs. 2E and 2H) belongs to the genus *Paracinipe* Descamps et Mounassif, 1972, as the clearly concave epiphallus and subgenital plate shape easily establish. In Libya there are present at least five other species of *Paracinipe* (*P. orientalis* (Werner, 1908) in Cyrenaica, *P. marmarica* (Salfi, 1924) and *P. baccettii* Massa, 1996 from Cyrenaica to Tripolitania, *P. adelaidae* Massa, 1996 in Tripolitania and *P. saharae* (Pictet & Saussure, 1891) in Fezzan);

the species recorded by Usmani (2007, 2008) could eventually belong to *P. saharae*.

Pamphagus elephas (Linnaeus, 1758)

The genus *Pamphagus* is distributed in northwest Africa (from Morocco to Tunisia), Sardinia and Sicily. According to Massa (1998), records by Zanon (1924) in Cyrenaica have to be referred to *Paracinipe orientalis*. However, three females from Ghat (Fezzan), following the key to species of Dirsh (1965), have been identified as *Pamphagus elephas* (L., 1758) by Usmani (2007, 2008). This genus has been revised by Descamps & Mounassif (1972) and Massa *et al.* (1993). According to these authors *P. elephas* covers an area of northcentral Algeria; this country also hosts *P. caprai* Massa, 1992 (W. Algeria and E. Morocco), *P. cristatus* Descamps et Mounassif, 1972 (E. Algeria and N. Tunisia) and another two species on the most inland areas of the South, i.e., *P. djelfensis* Vosseler, 1902 and *P. auresianus* Massa, 1992. In Tunisia are present another two species, *P. tunetanus* Vosseler, 1902 (North) and *P. meridionalis* Descamps et Mounassif, 1972 (South), the former has been recorded from Libya in the present paper; characters listed by Usmani (2008) (green, with scattered black dots, tegmina narrowly spatulate and uniformly brown) suggest that his specimens could also belong to *P. tunetanus* or to *P. meridionalis*.

Aiolopus obariensis Usmani, 2008

Usmani (2008, 2008a) separated this species from other *Aiolopus*, mainly upon a very extraordinary character: the right antenna normal and the left short, 4-5 segmented, with apical segment club-shaped. Antennal oligomery, sometimes asymmetric, is reported as teratology in Hemiptera (Costas *et al.* 1992). Generally asymmetry in Orthopteroidea may involve wings (*cf.* Palmer 1996, Pélabon & Hansen 2008), subgenital plate (Ingrisch 1999, who described a mantid characterized by the subgenital plate lacking one stylus), but in the shape of antennae it is unknown. Antennal segments indeed bear many sensilli receiving chemical messages from right and left and asymmetry seems biologically inconsequential. It is possible that the character of left antennae club-shaped is an abnormality of the five specimens examined, and is not present in the whole population; eventually, all specimens (found in the same locality and the same day at Obari, Wadi Haya, Fezzan) were determined as offspring of the same pair, which had this abnormality and transferred it to them.

Duroniella fracta (Krauss, 1890)

Usmani (2008) records this species from Qattah, without any other information; this species was previously recorded in North Africa as *Phloebea fracta*, after being considered *Duroniella lucasii*. *D. fracta*, indeed, is a species of Anatolia (type-locality: Ephesus), possible senior synonym of *D. laticornis* (Krauss, 1909; Willemse & Willemse 2008).

Oedipoda charpentieri Fieber, 1853

Usmani (2008), following characters used by Harz (1975), records this species from Al Awaynat (Fezzan). Although Défait (2006) found that wings of *O. charpentieri* may be blue, pink or red, he pointed out that characters separating it from *O. caerulea* and other related *Oedipoda*, are the cubital extension of the wing; dark band clearly exceeding the middle of the transparent extension. *O. charpentieri* has also been recorded from Algeria (Chopard 1943), but Défait (2006) considers that this record has to be confirmed, and possibly this species is absent in North Africa.

Vosseleriana korsakovi (Chopard, 1943)

Cited by Ajaili *et al.* (1989) from Brack, but not listed by Usmani (2008). Ajaili *et al.* (1989) report the species as previously recorded in Tripolitania by Dirsh (1961), but this author established only

the synonymy of the genus *Mistschenkoa* Bei-Bienko 1950 with *Vosseleriana* Uvarov 1924. This record needs confirmation.

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Appendix 1. Localities cited in the text

Note: Dj. = Djebel (sometimes it is written Gebel or Jebel) is a mountain range; O. (= Oued), U. (= Uadi) e W. (= Wadi) are different words to indicate characteristic beds of North African water rivers, generally dry.

- Abu Fakra (15 km SE Bengasi, Cyrenaica)
 Aqar Atabah (Fezzan)
 Agedabia (= Ajdabiya) (Cyrenaica)
 Agelat (Tripolitania)
 Agheila (Cyrenaica)
 Ain Doua (Oasis Cufra, Cyrenaica)
 Ain Mara (= Ayn Marah) (Cyrenaica)
 Ain Zara (also Ain Sarah) (= Zuwarah) (Tripolitania)
 Akakus (Fezzan)
 Al Abyad (Fezzan)
 Al Awaynat (Fezzan)
 Al Barkat or Barakat (Fezzan)
 Al Bayda (Cyrenaica)
 Al Breek (Fezzan)
 Al Garaya (Fezzan)
 Al Gharayfah (Fezzan)
 Al Hamarah (Fezzan)
 Al Qatrun or Gatrun (Fezzan)
 Al Sbitat (Fezzan)
 Al Shati (Fezzan)
 Al Tanahmah (Fezzan)
 Al Wasita (Dj. El Akhdar, Cyrenaica)
 Al Zighan (Fezzan)
 Anfang (Fezzan)
 Apollonia (Cyrenaica)
 Arkenu (Oasis Cufra, Cyrenaica)
 Arragabah (Fezzan)
 Ashkidah (Fezzan)
 Assisia (= Al Aziziyah or El Azizia o Azzizia) (Tripolitania)
 At Tmimi (Tmimi salt marsh) (Cyrenaica)
 Auenat (= Al Awaynat) (Oasis Cufra, Cyrenaica)
 Augila (Oasis Gialo, Cyrenaica)
 August (Fezzan)
 Awbari (Fezzan)
 Bani Hilal (Fezzan)
 Barce (= Merg or Mergi or the entire territory of Bengasi) (Cyrenaica)
 Bardia (Cyrenaica)
 Bendbeia (Tripolitania)
 Bengasi (also Berenice) (= Binghazi) (Cyrenaica)
 Ben Hareth (Fezzan)
 Benina Plain (Cyrenaica)
 Bersis (Cyrenaica)
 Bint Bayyah (Fezzan)
 Bin Ulid or Beni Ulid (Tripolitania)
 Bianchi (Tripolitania)
 Bir Hacheim (Cyrenaica)
 Bir Seifa (next to Gheddaia, Tripolitania)
 Bir Tar (40 km S Socna, Tripolitania)
 Bir Tesscia (Tripolitania)
 Bir Ziozan (Tripolitania)
 Brack (also Brach or Brak) (Fezzan)
 Brega (Cyrenaica)
 Bu el Gherab (Tripolitania)
 Buema (Oasis Cufra, Cyrenaica)
 Bu Gheilan (Tripolitania)
 Bu Hadi (Sirtica)
 Bu Kamèsh or Bucamèz, Bu Chemmasc, Bu Kammash (= Pisida) (Tripolitania)
 Ca di Gevlen (Tripolitania)
 Calauscio (Oasis Cufra, Cyrenaica)
 Carcura (Cyrenaica)
 Carradine or Corradini (Tripolitania)
 Castel Benito (Tripolitania)
 Castel Verde (Tripolitania)
 Chersa (Cyrenaica)
 Cirene (= Cyrene) (Cyrenaica)
 Cufra (= Al Kufrah or Kufra) (Cyrenaica)
 Dernah (also Derna) (= Darnah) (Cyrenaica)
 Dj. El Akhdar (= Al Jabal al Akhdar) (Cyrenaica)
 Dj. Fezzan (Fezzan)
 Dj. Gosseba (Tripolitania)
 Dj. Nafusah (Tripolitania)
 Dj. Teghrinna (= Tegrinna) (Tripolitania)
 Dj. T'kut (Tripolitania)
 Ed Disah (Fezzan)
 Edre (Fezzan)
 El Abiar (= Al Abyar) (Cyrenaica)
 El Barakat (Fezzan)
 El Fetejah (Cyrenaica)
 El Gatroun (Fezzan)
 El Giof (Oasis Cufra, Cyrenaica)
 El Giululab (Oasis Cufra, Cyrenaica)
 El Gheria (Tripolitania, 140 km S Mizda)
 El Hauanizi (Oasis Cufra, Cyrenaica)
 El Karsa (Cyrenaica)
 El Manakh (Fezzan)
 El Marj (Cyrenaica)
 El Rumia (Tripolitania)
 El Tag (Oasis Cufra, Cyrenaica)
 El Talaab (Oasis Cufra, Cyrenaica)
 El Teilib (Oasis Cufra, Cyrenaica)
 Endschila (= Engila) (Tripolitania)
 Esc-Sciuref (Tripolitania)
 Es Sahabi (Oasis Cufra, Cyrenaica)
 Fuehat (Cyrenaica)
 Fungul (Fezzan)
 Gabron (Fezzan)
 Garagra (Fezzan)
 Gargarese (Tripolitania)
 Garian or Gharian, Gorian, Gherran (= Ghariyan) (Tripolitania)
 Gariunes (Cyrenaica)
 Gasr Bu Hadi (20 km S Sirte, Sirtica)
 Gasr Garabulli or Garabul (= Al Garabulli) (Tripolitania)
 Gasr Garian (Tripolitania)
 Gat (= Ghat) (Fezzan)
 Gatrun (Fezzan)
 Gebel es Soda (Tripolitania)
 Gebel Hauash (Oasis Cufra, Cyrenaica)
 Gebel T'kut (Fezzan)
 Gebirge (next to Garian, Tripolitania)
 Germa lakes (Fezzan)
 Ghadames (= Gadames) (Tripolitania)

- Gheddaia or Gheddahia, Geddaia (130 km S Misurata, Tripolitania)
 Ghemines (= Qaminis) (Cyrenaica)
 Gheria el Garbia (Tripolitania)
 Ghèria esc-Scerghia (Tripolitania)
 Gherran (= Garian) (Tripolitania)
 Ghirza (= Chersa) (Fezzan)
 Ghodwa (Fezzan)
 Giado (Tripolitania)
 Gialo (Oasis Gialo, Cyrenaica)
 Giarabub (= Al Jaghbub) (Cyrenaica)
 Giardaba (Oasis Cufra, Cyrenaica)
 Giofra (Tripolitania)
 Giuliana (Cyrenaica)
 Gulf of Bomba (Cyrenaica)
 Hai el Fredga (Cyrenaica)
 Haj Hujail (Fezzan)
 Hamada el-Hàmra (Tripolitania)
 Hammera (Fezzan)
 Haret el Hafun (Oasis Cufra, Cyrenaica)
 Hatiet el-Fredga (Cyrenaica)
 Hatiet Melfa (Cyrenaica)
 Homs or Khoms (= Al Khums) (Tripolitania)
 Hon Oasis (Fezzan)
 Idri (Fezzan)
 Jarmak (Fezzan)
 Jebel el Hauaig (Oasis Cufra, Cyrenaica)
 Jebel Fezzan (Fezzan)
 Jefren (Tripolitania)
 Khalayf (Fezzan)
 Khor Al Jifah (Fezzan)
 Koëfia (Cyrenaica)
 Kouf (= Wadi Kouf o W. Kuf) (Cyrenaica)
 Latrun (Cyrenaica)
 Leptis Magna (= Lebda) (Tripolitania)
 Mahfu (Fezzan)
 Mahruqah or Maharuqah (Fezzan)
 Majdul (Fezzan)
 Makhaten (Fezzan)
 Mandara lake (Fezzan)
 Mangub (= Zuare) (Tripolitania)
 Mansurah (Fezzan)
 Marada (Cyrenaica)
 Marhaba (Fezzan)
 Marmura (Tripolitania)
 Marsa Brega (Cyrenaica)
 Maten Giofer (Ghof el Matar, Cyrenaica)
 Mathendusc (Fezzan)
 Mellaha (= Mell'aha) (Tripolitania)
 Merg (= Barce) (Cyrenaica)
 Meschia (Tripolitania)
 Mimuna (next to Garian, Tripolitania)
 Misquwin (Fezzan)
 Misurata (= Misratah) (Tripolitania)
 Mizda (= Mizdah) (Tripolitania)
 Mlaghi (Tripolitania)
 Msus (Cyrenaica)
 Murzuch or Murzuq (Fezzan)
 Nalut (Tripolitania)
 Nofilia (Tripolitania)
 Oasis El Talaab or Talab (Oasis Cufra, Cyrenaica)
 Obari (Fezzan)
 Pisida (= Bu Kamèsh, Bucamèz, Bu Chemmasc, Bu Kammash) (Tripolitania)
 Qardah (Fezzan)
 Qasr Bin Ghashir (Fezzan)
 Qattah (Fezzan)
 Qirah (Fezzan)
 Ququm (Fezzan)
 Ras el Hilal (Cyrenaica)
 Ras Lanuf (Sirtica)
 Rebiana (Oasis Cufra, Cyrenaica)
 Rus Hamra (N Marsa Brega, Cyrenaica)
 Sabrata or Sabratah (Tripolitania)
 Saff Saff (= Safsaf) (Cyrenaica)
 Safir (Cyrenaica)
 Samnu (Fezzan)
 Sarir (Cyrenaica)
 Scegga (Cyrenaica)
 Scemek or Scemeh (Tripolitania)
 Sebha or Sabha (Fezzan)
 Sebka El Gof (Oasis Cufra, Cyrenaica)
 Sebka Gurola (Fezzan)
 Sebkha Beni Ateyi (Fezzan)
 Sejanah (Cyrenaica)
 Serdeles (Fezzan)
 Shahhat (Cyrenaica)
 Sidi Ali (Fezzan)
 Sidi Benour (Tripolitania)
 Sirte or Sirt (Sirtica)
 Slonta (= Sluntah) (Cyrenaica)
 Socna (Sirtica)
 Tadschura or Tagiura, Tajura) (Tripolitania)
 Tanahmah (Fezzan)
 Tamanhant (Fezzan)
 Tamzawah (Fezzan)
 Tarut or Tarot (Fezzan)
 Tauorga or Tawargha (Sirtica)
 Tazerbo or Tazirbu (Oasis Cufra, Cyrenaica)
 Tecnis (Cyrenaica)
 Tegerhi (Fezzan)
 Teghrinna or Tighrinnah (Tripolitania)
 Tegrutin (Fezzan)
 Tesaua (E Murzuq, Fezzan)
 Tinaiat ben Galan (Tripolitania)
 Tirrhe or Tjirrhe (Fezzan)
 Tkerkibah (Fezzan)
 Tmassan (Fezzan)
 Tobruk or Tubruk (Marmarica, Cyrenaica)
 Tobra or Tokrah (= Al Aquriyah) (Cyrenaica)
 Tolmetta or Tolmeita, Tolemais, Ptolemais (= Addirsiah) (Cyrenaica)
 Traghen or Traghan (Fezzan)
 Tripoli (= Tarabulus) (Tripolitania)
 Tsawah (Fezzan)
 Tunin (Fezzan)
 Tuwash (Fezzan)
 Uadi Caàm (Tripolitania)
 Uadi Dimar (Sirtica)
 Uadi el-Beda (Tripolitania)
 Uadi Endeliba (Tripolitania)
 Uadi es Zemam Bu Ghoem-Hom (Sirtica)

Uadi Fruten (Tripolitania)
Uadi Gelela (Tripolitania)
Uadi Gerfen (Cyrenaica)
Uadi Giovani (Fezzan)
Uadi Kaàm (Tripolitania)
Uadi Marsit (Tripolitania)
Uadi Merdam or U. Merduma (= Al Mardum) (Sirtica)
Uadi Mimuna (Sirtica)
Uadi Sofeggin (Tripolitania)
Uadi Tamed or Wadi Thamet (= Graset Merboa) (Sirtica)
Uadi Tanezzuft (Fezzan)
Uadi Tihubar (Tripolitania)
Uadi Zuasa (Tripolitania)
Ubari (Fezzan)
Um El Abib (Fezzan)
Um el Araneb or Um Al Aranib (Fezzan)
Um el Ma (Fezzan)
Um Erzeni or Um Erzem (Cyrenaica)
Umgebung (Fezzan)
Uosca Valley-Djebel Soda (Tripolitania)
Wadi el Sahel (Cyrenaica)
Wadi Gadafia (Fezzan)
Wadi Haya (Fezzan)
Wadi Howa (Cyrenaica, Libyan desert)
Wadi Kouf or W. Kuf (Cyrenaica)
Wadi Targent (Fezzan)
Wanzarik (Fezzan)
Waw el Kebir (Fezzan)
Waw el Namous (Fezzan)
Zahra (Fezzan)
Zalwaz (Fezzan)
Zavia Mechili (Cyrenaica)
Zizaw (Fezzan)
Zouilla (Fezzan)
Zuwaylah (Fezzan)
Zuwayyah (Fezzan)
Zweila (Fezzan)
Zweyah (Fezzan)