

# New records of long-legged flies (Diptera, Dolichopodidae) from Morocco

Mohamed Nourti<sup>1</sup>, Igor Ya. Grichanov<sup>2</sup>, Kawtar Kettani<sup>1</sup>

<sup>1</sup>Faculté des Sciences, Université Abdelmalek Essaâdi  
Tetouan, Morocco. E-mail: [nourti.mohamed2@gmail.com](mailto:nourti.mohamed2@gmail.com)

<sup>2</sup>All-Russian Institute of Plant Protection  
Podbelskogo 3, 196608, St.Petersburg-Pushkin, Russia. E-mail: [grichanov@mail.ru](mailto:grichanov@mail.ru)

This paper provides new data on the distribution of 39 long-legged fly species (Diptera, Brachycera, Dolichopodidae) belonging to 19 genera from Morocco. Twelve species, *Gymnopternus assimilis* (Staeger, 1842), *Hercostomus apollo* (Loew, 1869), *Hercostomus morenae* (Strobl, 1899), *Medetera media* Parent, 1925, *Medetera pallipes* (Zetterstedt, 1843), *Medetera petrophiloides* Parent, 1925, *Medetera* aff. *roggii* Rampini et Canzoneri, 1979, *Micromorphus minusculus* Negrobov, 2000, *Sciapus* aff. *negrobovi* Naglis et Bartak, 2015, *Campsicnemus simplicissimus* Strobl, 1906, *Sympycnus pulicarius* (Fallén, 1823), and *Syntormon pilitibia* Grichanov, 2013 are newly added to the Moroccan insect fauna. In addition, available information on geographical distribution for each species is also included.

**Key words:** Dolichopodidae; Morocco; new records

## Introduction

Dolichopodidae (Diptera, Brachycera) is a large, diverse and cosmopolitan family of flies commonly known as long-legged flies, including 8,000 species in 250 genera (Grichanov, 2017).

Morocco is part of the Mediterranean Sea Basin, lying between the Atlantic Ocean, the Mediterranean Sea and Sahara desert. Its territory can be conditionally divided into 7 natural areas: the North (Rif), East of Morocco (EM), Atlantic Plains (AP), Middle Atlas (MA), High Atlas (HA), Anti Atlas (AA) and Sahara (Rankou et al. 2015; Kettani, Negrobov 2016). Apart from the southeast regions (pre-Saharan and desert areas), Morocco's climate and geography are very similar to the Iberian Peninsula.

The Moroccan fauna of Dolichopodidae is insufficiently investigated and rarely found in literary sources as the distribution of individual species is comparatively rare.

The first contribution to the fauna of Dolichopodidae of Morocco was made in 1805 by Fabricius, who listed in his first checklist of Diptera of Morocco one species, *Anhydrophorus cinereus* (Fabricius, 1805) (as *Scatophaga cinerea* Fabricius, 1805). Later, several authors described or found new species either for science or for Morocco, as those of Macquart (1842), Becker, Stein (1913), Parent (1924-1950), Séguy (1930-1953), Vaillant (1950-1956), Boumezzough, Vaillant (1986), Gatt (2003), Pârvu (2006-2008), Grichanov (2009-2010), Grichanov, Negrobov (2014) and recently Ebejer et al., 2019.

As for the recent bibliographic data relating to exhaustive compilations on Dolichopodidae known in Morocco, three significant publications listed an inventory of these insects on the basis of literature records. One is that of Dakki (1997) who established a checklist of 32 species for aquatic Dolichopodidae within his contribution in the study of the national biodiversity dedicated to the fauna of Morocco. The earlier one was established by Negrobov (1991) who has included 44 species known from the country; however, some old species records were lost. The latest compilation was realized by Kettani and Negrobov (2016) who have compiled a check-list of Moroccan long-legged flies including 63 species; however, some old and recent species records were again lost. Later 16 species new for the country have been reported (Ebejer et al. 2019). Several species have been probably mentioned by various authors in error from the territory or recorded by females only. Their presence in Moroccan fauna must be confirmed.

Preparing a chapter for the forthcoming Catalog of Diptera of Morocco, we have found 90 species of the family published in many references since 1805. Nevertheless, the total number of Moroccan species can reach to 300

species. For example, the fauna of neighbouring Spain contains nearly 200 and that of France – nearly 400 species (Naglis, Bartak, 2015; Grichanov, 2017).

Recent field work in different areas from Morocco has uncovered many species not previously known. The aim of this article is to contribute to a better knowledge of this fauna by providing new records for an up-to-date checklist.

## Material and methods

This study was based on entomological field investigations to collect new samples from a multitude of habitats mainly belonging to the Rif and to a limited degree to the Atlasic domain, comprising a total of 53 surveyed sites.

The Rif, extending in an arc from the Straits of Gibraltar to the valley of Moulouya, are a succession of coastal mountains belonging to the Alpine system, which culminate somewhere near its center at Jbel Tidighine (2456 m). Table 1 summarizes the main geographical and cartographical data of studied sites. The altitudes of the stations range between 0 and 2017 m. They cover a variety of habitats as forests, mountains, valleys, springs, streams, meadows, marshes, peat bogs, cultured fields and greenhouses, resulting from the diverse geomorphology and climate of the country.

The material referred to in this work comes from two main sources. The first part of the material presented in this work was captured by Nourti Mohamed between 2017 and 2019. The second part of the material is a large collection of specimens in alcohol, mostly hand swept from river banks and riparian vegetation by Kawtar Kettani and her students between 2010 and 2019. The material collected during joint field trips of all authors of this paper in July 2019 is also included. Two sites in the Rif Mountains have been visited (Figs 1, 2), the God's Bridge (or Pont de Dieu in French) at Akchour village (the Talassemtane National Park, 1 July) and the Lemtahane marsh at Amsemlil (the Bouhachem Natural Park, 4 July 2019). The specimens have been collected using entomological sweep nets (SN in the following list) and Malaise traps (MT), then transferred to bottles using aspirators or ecollectors (Černý, von Tschirnhaus, 2014) and stored in 70% of alcohol.

Material cited in this work is housed at the Laboratoire Ecologie, Systématique et Conservation de la Biodiversité, Faculté des Sciences, Université Abdelmalek Essaâdi, Tétouan, Morocco and the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia.

## Results

We founded 39 species belonging to 19 genera, including twelve species new for Morocco and two undescribed species. In the following list, the individual species are arranged alphabetically within each genus.

### Diaphorinae

#### *Chrysotus* Meigen, 1824

##### *Chrysotus* sp.

MATERIAL. 6♂, 9♀, Rif, Douar El Hama (forest), 35°23'05"N, 5°30'46"W, 338 m, 6-21.VI.2016 (MT), Coll. K. Kettani.

NOTES. The material examined belongs to an undescribed species that will be described and illustrated separately.

#### *Chrysotus suavis* Loew, 1857

MATERIAL. 1♂, Dayat Ifrane (lagoon), 33°32'59.762"N, 5°6'5.987"W, 1607 m, 2.IV.2017 (SN), Coll. Y. Fekrani; 2♀, Tahanout (River), 31°12'8.1"N, 7°33'55.749"W, 956 m, 25.III.2017 (SN), Coll. Y. Fekrani; 5♂, 6♀, Rif, Amsemlil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 4.VII.2019 (SN), Coll. M. Nourti.

REFERENCES. Grichanov, 2009, HA, Asni area (1100–1400 m)

TYPE LOCALITY: Germany: "Coln"; Austria: "Neusiedler See in Ungarn".

DISTRIBUTION. Palaearctic: Afghanistan, Algeria, Armenia, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, N China, Croatia, Czech Republic, Egypt, Estonia, Finland, France, Georgia, Germany, Greece (North Aegean), Hungary, Iraq, Iran, Israel, Italy, Kyrgyzstan, Latvia, Lithuania, Middle Asia, Mongolia, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia (Adygea, Alania, Altai Rep., Astrakhan, Blagoveshchensk, Buryatia, Irkutsk, Kabardino-Balkaria, Kamchatka, Khabarovsk, Krasnodar, Krasnoyarsk, Kursk, Leningrad, Lipetsk, Magadan, Pskov, Rostov, Ryazan, Sakhalin, Tatarstan, Voronezh, Yakutia), Serbia, Slovakia, Spain (Canary Is), Sweden, Switzerland, Turkey (Adiyaman, Antalya, Antakya, Artvin, Gaziantep, Kizildere, Sanliurfa), UK, Ukraine (Cherkasy, Kherson, Odessa).

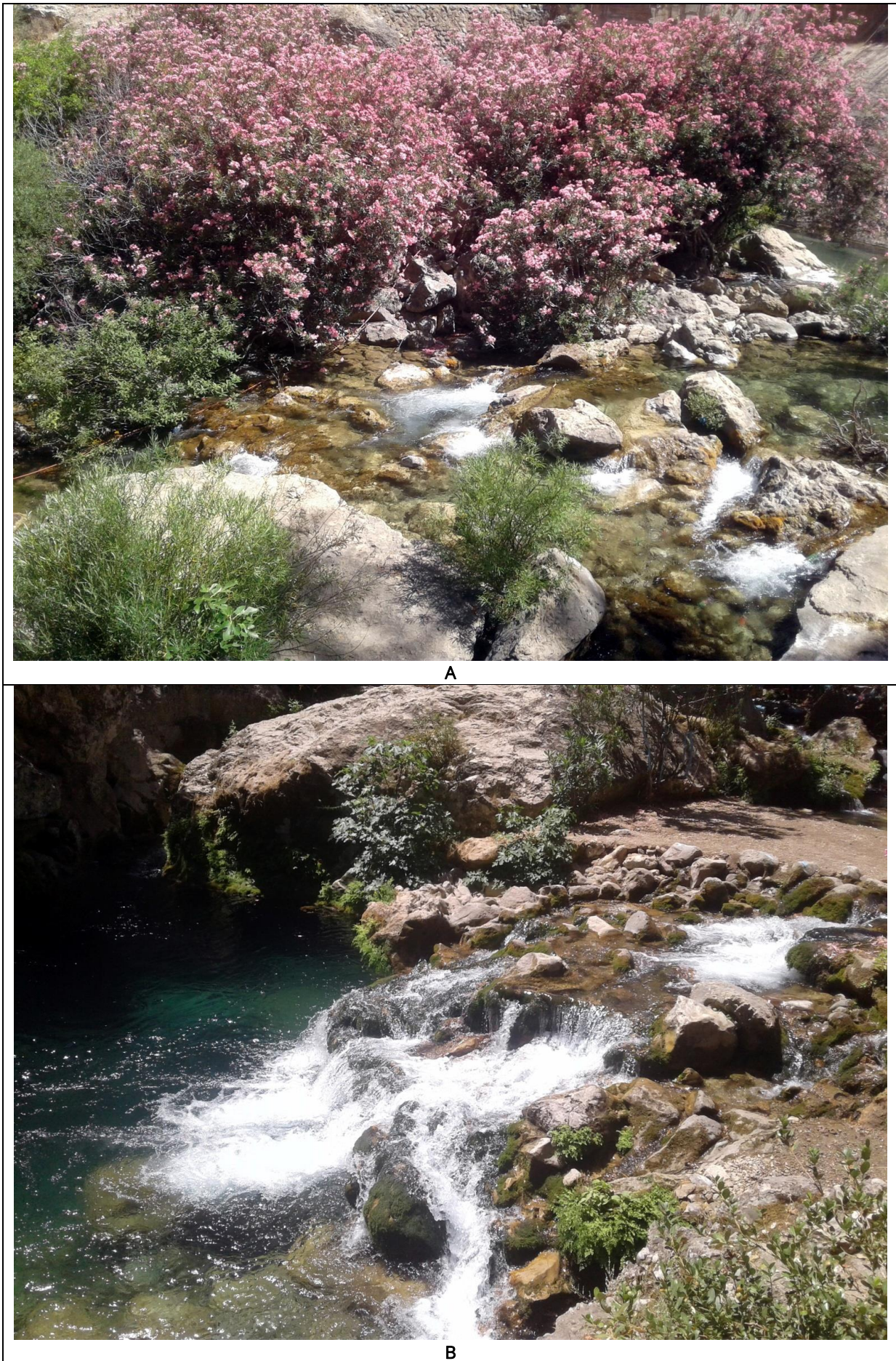


Fig. 1 (A-B). Oued Farda River at the God's Bridge, Talassemrane National Park, 1 July 2019



A



Fig. 2 (A-B). River Rehhal at the Lemtahane marsh, Bouhachem Natural Park, 4 July 2019

**Dolichopodinae*****Dolichopus* Latreille, 1796*****Dolichopus andalusiacus* Strobl, 1899**

MATERIAL. 1♂, Rif, Plage Stihat (beach), 35°20'34.543"N, 4°57'4.018"W, 0 m, 26.IV-26.V.2015 (MT), Coll. K. Kettani.

REFERENCES. Ebejer et al., 2019, AP, Loukkos marsh (2m).

TYPE LOCALITY. Spain: Algeciras.

DISTRIBUTION. Palaearctic: Algeria, France, Greece (Crete), Italy, Portugal, Spain, UK.

***Dolichopus griseipennis* Stannius, 1831**

MATERIAL. 1♂, Adrou, PPNB [Project of Natural Park of Bouhachem] (forest), 35°13'32.30"N, 5°19'24.35"W, 556 m, 14.VII-15.VIII.2013 (MT), Coll. K. Kettani.

REFERENCES. Parent, 1924, Rif, Tanger; Parent, 1927; Séguy, 1930, Rif, Tanger.

TYPE LOCALITY. France: Lyon.

DISTRIBUTION. Palaearctic: Algeria, ?Armenia, Azerbaijan, Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Georgia, Germany, Greece incl. Crete, Hungary, Iran, Ireland, Israel, Italy, N Kazakhstan, Lithuania, Luxembourg, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia (Adygea, Krasnodar, Moscow, "Siberia"), Serbia, Slovakia, Spain incl. Balearic Is., Sweden, Switzerland, Tunisia, Turkey (Sinop), UK; "Middle Asia".

***Dolichopus sabinus* Haliday, 1838**

MATERIAL. 1♂, Rif, Plage Stihat (beach), 35°20'34.543"N, 4°57'4.018"W, 4 m, 26.IV-26.V.2015 (MT), Coll. K. Kettani.

REFERENCES. Ebejer et al., 2019, Rif, Martil (9m), Oued Laou (2m).

TYPE LOCALITY. Ireland: Killarney, Tarbert.

DISTRIBUTION. Palaearctic: Abkhazia, Austria, Azerbaijan, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Latvia, Netherlands, Norway, Poland, Portugal, Romania, Russia (Astrakhan, Kabardino-Balkaria, Saratov), Slovakia, Spain, Sweden, Turkey (Antalya), UK, Ukraine; Afrotropical: Tanzania.

***Gymnopternus* Loew, 1857*****Gymnopternus assimilis* (Staeger, 1842)**

MATERIAL. 4♂, Rif, Amsemlil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 23.IV.2017 (SN), Coll. K. Kettani.

TYPE LOCALITY. Not given [Denmark].

DISTRIBUTION. Palaearctic: Austria, Belarus, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, the Netherlands, Poland, Russia (the Crimea, Karachai-Cherkessia, Leningrad, Moscow, Ryazan, Voronezh), Sweden, Switzerland, Turkey (Hakkari), the UK and the Ukraine (Kherson, Kyiv), Iran. First record for Morocco.

***Hercostomus* Loew, 1857*****Hercostomus apollo* (Loew, 1869)**

MATERIAL. 2♂, 2♀, Rif, Chefchaouen, Talassemrane (Fir forest) 35°21'23"N, 5°26'55"W, 1696 m, 7.VI-17.X.2014 (MT), Coll. K. Kettani; 1♂, 1♀, Adrou, PPNB [Project of Natural Park of Bouhachem] (forest), 35°13'32.30"N, 5°19'24.35"W, 556 m, 14.VII-15.VIII.2013, Coll. K. Kettani (MT); 2♂, 2♀, Rif, Amsemlil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 4.VII.2019 (SN), Coll. M. Nourti.

TYPE LOCALITY. "Parnass, Griechenland" [Greece].

DISTRIBUTION. Palaearctic: Armenia, Greece, Iran, Iraq, Tunisia, Turkey (Taurus [Mountains]), Ukraine. First record for Morocco.

***Hercostomus* aff. *exarticulatoides* Stackelberg, 1949**

MATERIAL. 2♂, 1♀, Rif, Akchour env., Pont de Dieu (river) 35°13'42"N, 5°10'31"W, 536 m, 1.VII.2019 (SN), Coll. M. Nourti.

NOTES. The material examined belongs probably to an undescribed species that will be described and illustrated separately. At present, *H. exarticulatoides* is known only from the type locality in Tajikistan (Rakhati, Gissar ridge).

***Hercostomus excipiens* Becker, 1907**

MATERIAL. 1♂, 1♀, Rif, Talembote (river) 35°14'51"N; 5°11'5"W, 440 m, 1.VI.2019 (SN), Coll. I. Grichanov.

REFERENCES. Parent, 1924, Rif, Tétouan; Parent, 1927; Séguy, 1930, Rif, Oued Judios (Tanger).

TYPE LOCALITY. Algeria: "Umgebung von Algier und Zaghouan".

DISTRIBUTION. Palaearctic: Spain, Algeria, Morocco.

***Hercostomus morenae* (Strobl, 1899)**

MATERIAL. 1♂, 4♀, Rif, Mnezla (marsh) 35°30'50,477"N, 5°48'18,374"W, 74 m, 3.I.2017 (SN), Coll. K. Kettani; 1♂, Chefchaouen, Talassemrane, 9.I.2015; 1♂, Oued Ametrasse (Bank of river), 35° 05' 01' ' N, 5° 05' 03' ' W, 841 m, 30.IV.2016 (SN), Coll. F.Z. Bahid & A. Adghir; 3♂, 3♀, Bassin Tahaddart (dune marshland), 35°34'46.756"N, 5°59'15.832"W, 0m 31.I.2017 (SN), Coll. K. Kettani.

TYPE LOCALITY. Spain: Sierra Morena.

DISTRIBUTION. Palaearctic: Spain. First record for Morocco.

***Ortochile* Berthold, 1827*****Ortochile nigrocaerulea* Latreille, 1779**

MATERIAL. 2♂, Rif, Douar El Hamma (forest), 35°23'05"N, 5°30'46"W, 338 m, 6.VI-21.VI.2016 (MT), Coll. K. Kettani; 2♂, 1♀, Triwa Bni Hassane (forest), 35°16'964"N, 5°21'9"W, 654 m 27.IV.2019 (SN), Coll. K. Kettani; 3♂, 5♀, Taida (riverbank) 35°21'12"N, 5°31'57"W, 501 m, 25.IV.2015 (SN), Coll. K. Kettani.

REFERENCES. Parent, 1924, Rif, Tanger, Cap Spartel, Tétouan, Beni-Hozmar; Parent, 1927, Rif, Tanger; Séguy, 1930, Rif, Oued Judios (Tanger); Grichanov, 2009, Rif, Ouezzane (300m).

TYPE LOCALITY. France: Paris.

DISTRIBUTION. Palaearctic: Algeria, Austria, Bulgaria, Croatia, ?Denmark, France, Greece incl. North Aegean Is., Hungary, Israel, Italy, Morocco, Poland, Portugal, Spain incl. Balearic Is., Sweden, Syria, Tunisia, Turkey (Aydin, Izmir), UK.

***Poecilobothrus* Mik, 1878*****Poecilobothrus appendiculatus* (Loew, 1859), comb. nov.**

= *Hercostomus appendiculatus* (Loew): Ebejer et al., 2019: 146

MATERIAL. 1♂, Rif, Perdicaris (park), 35°47'26.675"N, 5°51'12.938"W, 223 m, 16.V.2015 (SN), Coll. K. Kettani.

REFERENCES. Parent, 1924, Rif, Tanger, Cap Spartel; Ebejer et al., 2019, Rif, Oued Nakhla (200m), Moulay Abdessalam (965m), Dardara (730m), Cap Spartel (155m).

TYPE LOCALITY. Spain: Ferrol.

DISTRIBUTION. Palaearctic: Algeria, Czech, France, Morocco, Portugal, Spain, Tunisia.

**Hydrophorinae*****Hydrophorus* Fallén, 1823*****Hydrophorus balticus* (Meigen, 1824)**

MATERIAL. 1♂, MA, Mont Habri (forest), 33°21'36.55"N, 5°8'30.11"W, 2071 m, 2.IV.2017 (SN), Coll. Y. Fekrani.

REFERENCES. Vaillant 1956, HA, Djebel Toubkal, lac Tamhda (Anremer), Oukaimeden, Izourar; Boumezzough, Vaillant, 1986, HA, Djebel Toubkal (3100 m).

TYPE LOCALITY. Germany: Hamburg.

DISTRIBUTION. Palaearctic: Afghanistan, Algeria, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iran, Ireland, Israel, Italy, Mongolia, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia (Adygea, Alania, Baikal, Chechnya, Kabardino-Balkaria, Karachai-Cherkessia, Krasnodar, Leningrad, Moscow, Voronezh, Yakutia), Slovakia, Spain, Sweden, Switzerland, Turkey (Antalya, Aydin, Denizli, Isparta, Kars, Mugla, Rize), UK, Ukraine; Afrotropical: South Africa, St. Helena.

***Liancalus* Loew, 1857*****Liancalus virens* (Scopoli, 1763)**

MATERIAL. 1♂, Rif, Amsemil env. (peat bog), 35°15'614"N, 5°25'943"W, 1059 m, 23.IV.2017 (SN), Coll. K. Kettani.

REFERENCES. Vaillant, 1956, HA, Toubkal, Assif Tassouat (M'Goum), Aguelmous, Sidi Chamarouch, Imi N'Ifri; Boumezzough, Vaillant, 1986, HA, Tahanaout (750m), Adrar Anremer (2900m), AA, Djebel Siroua (3000m); Kettani & Negrobov, 2016, AP, S-Tifni - MNHNR (AP, S-Tifni).

TYPE LOCALITY. not given ["Carnioliae indigena", Slovenia].

DISTRIBUTION. Palaearctic: Abkhazia, Algeria, Austria, Azerbaijan, Belgium, Bulgaria, Cyprus, Czech, Denmark, Finland, France, Georgia; Germany, Golan Heights, Greece incl. Crete, Hungary, Iran, Ireland, Israel, West Bank, Italy, S Kazakhstan, Kyrgyzstan, Luxembourg, Morocco, Netherlands, Norway, Poland, Portugal incl. Madeira, Romania, Russia (Crimea, Krasnodar, Leningrad, "Siberia"), Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Tunisia, Turkey (Hakkari, Mugla), Turkmenistan, UK, Ukraine (Uzhgorod).

***Thinophilus* (*Schoenophilus*) *versutus* Haliday, 1851**

= *Schoenophilus versutus* (Haliday, 1851), in Parent, 1924, 1927

MATERIAL. 2♂, Rif, Oued Souk Lhad (river bank), 35°3'26"N, 5°4'10"W, 613 m, 30.IV.2016 (SN), leg. F.Z. Bahid & A. Adghir; 1♂, Rif, Larache, Dayat Tazia (pond), 35°20'52"N, 5°33'12"W, 733 m, 23.IV.2017 (SN), Coll. K. Kettani.

REFERENCES. Parent, 1924, Rif, Cap Spartel, Tétouan; Parent, 1927; Pârvu et al. 2006, AP, Merja Zerga.

TYPE LOCALITY. England.

DISTRIBUTION. Palaearctic: Algeria, Belgium, Bulgaria, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Morocco, Netherlands, Poland, Portugal, Romania, Russia, Sweden, Tunisia, Turkey (Antalya, Erzurum), UK, Ukraine.

### *Medeterinae*

#### *Medetera* Fischer von Waldheim, 1819

NOTES. Southern Palaearctic *Medetera* species are usually indistinguishable by females; therefore, some females collected are left unidentified.

#### *Medetera diadema* (Linnaeus, 1767)

MATERIAL. 1♂, Rif, Kitane (riverbank), 35°32'24.72"N, 5°20'23.58"W, 49 m, 4.VII.2015 (SN), Coll. K. Kettani; 1♂, Rif, Plage Stihat (beach), 35°20'34.543"N, 4°57'4.018"W, 26.IV-26.V.2015 (MT), Coll. K. Kettani.

TYPE LOCALITY. Germany: Lipsiae [= Leipzig].

REFERENCES. Parent, 1938 (no material provided); Séguy, 1953a (cf. *diadema*), AP, Rabat.

DISTRIBUTION. Palaearctic: Austria, Azerbaijan, Belarus, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Hungary, Iran, Ireland, Latvia, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russia (Krasnodar, Kursk, Krasnoyarsk, Leningrad, Lipetsk, Mordovia, Moscow, Pskov, Ryazan, Voronezh), Slovakia, Sweden, Switzerland, Turkey (Sultanice), UK, Ukraine.

#### *Medetera media* Parent, 1925

MATERIAL. 1♂, Rif, Tétouan, Faculty of Sciences (garden: on a tree trunk), 35°33'37"N, 5°21'51"W, 14 m, 3.VII.2019, Coll. I. Grichanov.

TYPE LOCALITY. Tunisia.

DISTRIBUTION. Palaearctic: Egypt, Iran, Kazakhstan, Tunisia, Turkmenistan. First record for Morocco.

#### *Medetera micacea* Loew, 1857

MATERIAL. 1♂, HA, Imilchil, Lac Tislit (lagoon), 32°19'44.33"N, 3°26'25.55"W, 2254 m, 29.VI.2017 (SN), Coll. Y. Fekrani & N.H. El Ouazzani; 1♀, Rif, Ketama, Issaguen (forest), 34°54'50.18"N, 4°34'41.35"W, 1547 m, 16.IV-16.V.2014 (MT), Coll. K. Kettani.

REFERENCES. Ebejer et al., 2019, Rif, Dardara (730m).

TYPE LOCALITY. Not given [Europe].

DISTRIBUTION. Palaearctic: Austria, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Denmark, Estonia, France, Germany, Greece, Hungary, Iran, Italy, Kazakhstan, Malta, Mongolia, Netherlands, Norway, Poland, Portugal, Romania, Russia (Adygea, Chechnya, Crimea, Krasnodar, Leningrad, Omsk, Voronezh, Yakutia), Slovakia, Spain, Sweden, UK, Ukraine (Cherkasy), Uzbekistan.

#### *Medetera pallipes* (Zetterstedt, 1843)

MATERIAL. 3♂, 3♀, Rif, Douar El Hamma (forest), 35°23'05"N, 5°30'46"W, 338 m, 6-21.VI.2016 (MT), Coll. K. Kettani.

TYPE LOCALITY. Scania, "in Ostrog ad Wadstena; Botnia orientali ad Johannis Ro prope Tornea" [Sweden; Denmark].

DISTRIBUTION. Palaearctic: Austria, Belgium, Czech, Denmark, Egypt, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iran, Israel, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia (Adygea, Chechnya, Crimea, Kabardino-Balkaria, Karelia, Krasnodar, Leningrad, Novgorod, Pskov, Ryazan, Stavropol, Voronezh), Slovakia, Spain, Switzerland, Sweden, Turkey (Antalya, Hakkari, Kars), UK, Ukraine (Kherson). First record for Morocco.

#### *Medetera petrophiloides* Parent, 1925

MATERIAL. 1♂, Rif, Ketama, Issaguen (forest), 34°54'50.18"N, 4°34'41.35"W, 1547 m, 16.IV-16.V.2014 (MT), Coll. K. Kettani.

TYPE LOCALITY. Belgium: Luc-S/Mer; France: Paris-Plage, Fermanville pres de Cherbourg.

DISTRIBUTION. Palaearctic: Belgium, Britain I., Bulgaria, Czech Republic, French mainland, Germany, Ireland, Portugal, South Russia, Slovakia, The Netherlands. First record for Morocco.

NOTES. Parent (1938) included Morocco into the distribution section for *M. petrophila* Kowarz, 1877 (no material was provided). It is very close to *M. petrophiloides*, differing reliably in fine structures of male genitalia. The presence of *M. petrophila* in Moroccan fauna must be confirmed.

#### *Medetera* aff. *roghii* Rampini et Canzoneri, 1979

MATERIAL. 1♂, Rif, Douar El Hamma (forest), 35°23'05"N, 5°30'46"W, 338 m, 6-21.VI.2016 (MT), Coll. K. Kettani.

TYPE LOCALITY. Spain: Menorca.

DISTRIBUTION. Palaearctic: Iran, Italy (Sicilia), Malta and Spain (Menorca). First record for Morocco.



***Thrypticus* Gerstacker, 1864*****Thrypticus bellus* Loew, 1869**

MATERIAL. 1♂, Rif, Jbel Bouhachem, Amsemlil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 4.VII.2019 (SN), Coll. I. Grichanov; 1♂, Rif, Tahaddart, Estuaire Oued Tahaddart (dune marshland), 35°34'46.756"N, 5°59'15.832"W, 0 m, 14.X.2017 (SN), Coll. K. Kettani; 2♂, Rif, Tetouan, Barrage 9 Avril, 20.IV.2019 (SN), Coll. K. Kettani; 1♂, Rif, Plage Stihat (beach), 35°20'34.543"N, 4°57'4.018"W, 0 m, 26.IV-26.V.2015 (MT), Coll. K. Kettani.

REFERENCES. Seguy, 1930, EM, Dayat Sidi Kacem.

TYPE LOCALITY. England: Kew.

DISTRIBUTION. Afrotropical: DR Congo, Kenya, Ethiopia, Senegal, South Africa, St. Helena, Tanzania. Palaearctic: Abkhazia, Armenia, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Czech, Denmark, Egypt, Finland, France, Germany, Greece, Hungary, Iran, Ireland, Israel, Golan Heights, Italy, Kazakhstan, Lithuania, Morocco, Netherlands, Poland, Portugal, Romania, Russia (Krasnoyarsk, Leningrad, Novosibirsk, Rostov, Vladivostok, Voronezh), Slovakia, Spain, Sweden, Switzerland, Turkey (Erzurum, Kars, Mugla), UK, Ukraine (Odessa).

**Neurigoninae*****Neurigona* Rondani, 1856*****Neurigona solodovnikovi* Grichanov, 2010**

= *Neurigona punctifera* Becker, 1907, in Kettani, Negrobov, 2016 (misidentification)

MATERIAL. 1♂, Perdicaris (park), 35°47'26.675"N, 5°51'12.938"W, 223 m, 16.V.2015 (SN), Coll. K. Kettani; 1♂, 1♀, Taria Bni Faghloom (forest), 34.93175°N, 5.11541°W, 894 m, 11.IV.2019 (MT), Coll. M. Ec-Charif; 7♂, 1♀, Chrafate (riverbank), 35°04'973"N, 5°06'567"W, 832 m, 2.V-16.VIII.2018 (MT), Coll. M. Nourti.

REFERENCES. Grichanov, 2010, AP, 40 km S Larache; Kettani, Negrobov, 2016, Rif, Ain Tissemlal (Azilane, 1255m).

TYPE LOCALITY. Morocco: 40 km S Larache.

DISTRIBUTION. Palaearctic: Morocco.

**Peloropecinae*****Chrysotimus* Loew, 1857*****Chrysotimus molliculoides* Parent, 1937**

MATERIAL. 1♀, Rif, Larache, Dayat Tazia (pond), 35°20'52"N, 5°33'12"W, 733 m, 12.V.2015 (SN), Coll. K. Kettani.

REFERENCES. Parent, 1937, MA, Ifrane (1600m).

TYPE LOCALITY. Morocco: Ifrane.

DISTRIBUTION. Palaearctic: Morocco.

***Micromorphus* Mik, 1878*****Micromorphus albipes* (Zetterstedt, 1843)**

MATERIAL. 1♂, Rif, Oued Souk Lhad (river bank), 35°3'26"N, 5°4'10"W, 613 m, 30.IV.2016 (SN), leg. F.Z. Bahid & A. Adghir; 1♂, EM, Figuig, Bouanane (riverbank), 32°2'5.05"N, 3°3'13.82"W, 855 m, 5.VI.2017 (SN), Coll. Y. Fekrani; 1♀, Rif, Tahaddart, Estuaire Oued Tahaddart (dune marshland), 35°34'46.756"N, 5°59'15.832"W, 0 m, 14.X.2017 (SN), Coll. K. Kettani; 1♂, 1♀, Rif, Tetouan, Barrage 9 Avril, 20.IV.2019 (SN), Coll. K. Kettani; 1♂, AA, Boudnib (desert), 31°57'26.59"N, 3°34'39.74"W, 951 m, 3.IV.2017 (SN), Coll. Y. Fekrani; 1♂, Rif, Tetouan, Kharouba, 35°33'12"N, 5°21'19"W, 8.V.2018 (SN), Coll. M. Nourti; 1♂, Rif, Plage Stihat (beach), 35°20'34.543"N, 4°57'4.018"W, 0 m, 26.IV-26.V.2015 (MT), Coll. K. Kettani; 1♂, Rif, Tanger, Ain Jdioui, 35°34'12"N, 5°55'12"W, 20.IV.2019 (SN), Coll. N.E. El Ouazzani.

REFERENCES. Parent, 1924, Rif, Beni-Hozmar (Tetouan); Parent, 1927, Rif, Tetouan.

TYPE LOCALITY. Sweden: Ostrogoths; Larketorp.

DISTRIBUTION. Palaearctic: Algeria, Austria, Azores, Belgium, Bulgaria, China, Croatia, Czech, Denmark, Egypt, France, Germany, Greece, Hungary, Ireland, Iraq, Israel, Italy, Mongolia, Morocco, Netherlands, Poland, Romania, Russia (Krasnodar, Leningrad), Slovakia, Spain, Sweden, Switzerland, Turkey (Korucuk, Kizildere, Mugla), UK, Ukraine (Kherson, Odessa), West Bank; Oriental: Nepal; Australasian: New Zealand; Nearctic: USA: MD, SC, FL; MEX; Neotropical: Mexico, Costa Rica, Panama, Dominica.

NOTES. The material examined belongs to *claripennis* (Strobl, 1899) variety described from Spain (Algeciras).

***Micromorphus minusculus* Negrobov, 2000**

MATERIAL. 1♂, EM, Figuig, Bouanane (riverbank), 32°2'5.05"N, 3°3'13.82"W, 855 m, 5.IV.2017 (SN), Coll. Y. Fekrani; 1♂, AA, Taroudant, Taliouine (agricultural field), 30°31'28.847"N, 7°55'14.779"W, 1014 m, 13.VIII.2017 (SN), Coll. Y. Fekrani.

TYPE LOCALITY. Ukraine: Odessa Prov., "Belgrad, Japug Lake" [=Bolgrad, Yalpug Lake].

DISTRIBUTION. Palaearctic: Tajikistan, Ukraine (Odessa). First record for Morocco.

## Rhaphiinae

### *Rhaphium* Meigen, 1803

#### *Rhaphium brevicorne* Curtis, 1835

= *Xiphandrium pectinatum* Becker, in Vaillant, 1956

MATERIAL. 2♂, Rif, Akchour env., Pont de Dieu, 35°13'42"N, 5°10'31"W, 536 m, 1.VII.2019, M. Nourti; 1♂, Rif, Larache, Dayat Tazia, (pond), 35°20'52"N, 5°33'12"W 733 m, 12.V.2015 (SN), Coll. K. Kettani; 1♂, My Abdesalam (forest), 35°18'462"N, 5°31'10.231"W, 1177 m, 26.VI.2017 (SN), Coll. K. Kettani.

REFERENCES. Vaillant, 1956, AP, Rabat, HA, Oukaimeden; Kettani, Negrobov, 2016, AP, Rabat.

TYPE LOCALITY. England: Isle of Wight.

DISTRIBUTION. Palaearctic: Algeria, Belgium, France incl. Corsica, Germany, Greece (North Aegean), Iraq, Ireland, Israel, Italy, Lebanon, Morocco, Netherlands, Portugal, Russia (Krasnodar), Spain incl. Canary Is., Sweden, Tajikistan, Turkey (Kizildere), UK.

#### *Rhaphium caliginosum* Meigen, 1824

= *Raphium lanceolatum* Loew, 1850, in Kazerani et al., 2013

MATERIAL. 1♂, Rif, Amsemliil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 4.VII.2019 (SN), Coll. M. Nourti; 1♂, Chefchaouen, Bni selmane, Dbani (meadow), 35°4'0.625"N, 5°0'34.282"W, 1046 m, 19.V.2018 (SN), Coll. M. Nourti.

REFERENCES. Parent, 1924, Rif, Cap Spartel; Kazerani et al. 2013 (no material provided).

TYPE LOCALITY. not given.

DISTRIBUTION. Palaearctic: Algeria, Armenia, Austria, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Denmark, Estonia, Finland, France, Germany, Greece, Israel, Golan Heights, Italy, Kazakhstan, Latvia, Morocco, Netherlands, Norway, Portugal, Romania, Russia (Adygea, Alania, Kabardino-Balkaria, Kaliningrad, Karachai-Cherkessia, Krasnodar, Krasnoyarsk, Kursk, Leningrad, Moscow, Murmansk, Pskov, Rostov, Stavropol, Tatarstan, Voronezh), Serbia, Sweden, Switzerland, Syria, Turkey (Burdur, Izmir), UK, Ukraine (Kherson, Odessa).

## Sciapodinae

### *Sciapus* Zeller, 1842

#### *Sciapus* aff. *negrobovi* Naglis et Bartak, 2015

MATERIAL. 7♂, Rif, Plage Stihat (beach), 35°20'34.543"N, 4°57'4.018"W, 0 m, 26.IV-26.V.2015 (MT), Coll. K. Kettani; 1♂, Rif, Kitane (riverbank), 35°32'24.72"N, 5°20'23.58"W, 49 m, 4.VII.2015 (SN), Coll. K. Kettani.

TYPE LOCALITY. Portugal, Valhelhas.

DISTRIBUTION. Palaearctic: Portugal. First record for Morocco.

NOTES. Hypopygium morphology is practically identical to Fig. 3 (Naglis et Bartak, 2015). Some fine differences we consider relating to individual variability or inaccuracy of the description. E.g., length ratio of fore tibia and basitarsus varies in our material. Male postabdomen is dark in our specimens. Hypopygium of *Sciapus negrobovi* was described as mainly yellow; however, this colour is almost impossible, if the abdomen is "metallic green, with tergites 2–5 with large yellow dorsolateral patch". CuAx ratio is 1.1 in *Sciapus negrobovi*, but 0.5–0.7 in our specimens.

## Sympycninae

### *Campsicnemus* Haliday in Walker, 1851

#### *Campsicnemus simplicissimus* Strobl, 1906

MATERIAL. 2♂, Rif, Plage Stihat (beach), 35°20'34.543"N, 4°57'4.018"W, 26.IV-26.V.2015 (MT), Coll. K. Kettani.

TYPE LOCALITY: Spain: Algeciras.

DISTRIBUTION. Palaearctic: Abkhazia, Bulgaria, France, Greece (North Aegean), Hungary, Italy, Israel, Portugal, Russia (Astrakhan, Karachai-Cherkessia, Krasnodar, Rostov), Spain, Switzerland, Tajikistan, Turkey (Antalya, Beysehir lake). First record for Morocco.

### *Sympycnus* Loew, 1857

#### *Sympycnus pulicarius* (Fallén, 1823)

MATERIAL. 5♂, 6♀, HA, Sidi Masali, Ain Taferaout (spring), 31°13'56,53"N, 7°58'53,59"W, 1237 m, 25.III.17 (SN), Coll. Y. Fekrani.

TYPE LOCALITY. not given [Sweden].

DISTRIBUTION. Nearctic: USA: California; Palaearctic: Andorra, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iran, Ireland, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Macedonia, Moldova, Mongolia, Netherlands, Norway, Poland, Portugal, Romania, Russia (Alania, Altai Rep., Altai Ter., Buryatia, Chechnya, Chelyabinsk, Crimea, Kabardino-Balkaria, Kaliningrad, Karachai-Cherkessia, Karelia, Khakassia, Krasnodar, Krasnoyarsk, Leningrad, Lipetsk, Moscow, Murmansk, Novgorod, Novosibirsk, Pskov, Stavropol, Sverdlovsk, Tambov, Tatarstan, Voronezh, Yakutia), Serbia, Slovakia, Spain incl. Canary Islands, Sweden, Switzerland, Tajikistan, Turkey (Aydin, Bolu, Mugla, Van), UK, Ukraine (Kherson), Uzbekistan. First record for Morocco.

### *Syntormon* Loew, 1857

NOTES. Southern Palaearctic *Syntormon* species are usually indistinguishable by females; therefore, some females collected are left unidentified.

### *Syntormon denticulatus* (Zetterstedt, 1843)

= *Syntormon pumilus* Parent, 1925 (nec Meigen, 1824; misidentification), in Pârvu et al., 2006

MATERIAL. 1♂, Rif, Plage Stihat (beach), 35°20'34.543"N, 4°57'4.018"W, 4m 26.IV-26.VI.2016 (MT), Coll. K. Kettani; 1♂, Amelay (meadow), 35°11'44"N, 5°18'36"W 294 m, 2.V.2018, (SN), Coll. M. Nourti; 1♂, Taliouine, (agricultural field), 30°31'28.847"N, 7°55'14.779"W 1014 m, 2.IX.2017 (SN), Coll. Y. Fekrani; 1♂, Tétouan, M'Diq, Koudiat Taifour (forest), 35°40'28.706"N, 5°19'1.841"W, 100 m, 31.V-14.VI.2018 (MT), Coll. M. Nourti; 1♂, Rif, Amsemlil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 4.VII.2019 (SN), Coll. M. Nourti; Rif, Larache, Dayat Tazia, 35°20'52"N, 5°33'12"W, 733 m, 23.IV.2017; 1♂, Rif, Oued Souk Lhad (river bank), 35°3'26"N, 5°4'10"W, 613 m, 30.IV.2016 (SN), leg. F.Z. Bahid & A. Adghir; 1♂, Rif, Amsemlil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 23. IV. 2017 (SN), Coll. K. Kettani; 1♂, Taliouine (agricultural field), 30°31'28.847"N, 7°55'14.779"W, 1014 m, 2.IX.2017 (SN), Coll. Y. Fekrani; 1♂, HA, Sidi Masali, Ain Taferaout (spring), 31°13'56,53"N, 7°58'53,59"W, 1237 m, 31.XII.2017 (SN), Coll. Y. Fekrani.

REFERENCES. Parent, 1924, Rif, Tétouan; Parent, 1927, Rif, Tétouan; Séguy, 1930, Rif, Tanger; Pârvu et al. 2006, AA, Lac Edehby, Ouarzazate.

TYPE LOCALITY. Sweden: Scania.

DISTRIBUTION. Palaearctic: Abkhazia, Afghanistan, Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Finland, France, Germany, Greece, Iran, Israel, Italy, Kyrgyzstan, Morocco, Norway, Poland, Portugal, Romania, Russia (Adygea, Alania, Chechnya, Kabardino-Balkaria, Karelia, Leningrad, Moscow, Murmansk, Stavropol), Sweden, Switzerland, Tajikistan, Turkey (Erzurum, Mugla, Van), UK, Ukraine.

### *Syntormon miki* Strobl, 1899

MATERIAL. 1♂, Rif, Akchour env., Pont de Dieu, 35°13'42"N, 5°10'31"W, 536 m, 1.VII.2019, M. Nourti; 1♂, My Abdesalam, (forest), 35°18'462"N, 5°31'10.231"W, 1177 m, 26.VI.2017 (SN), Coll. K. Kettani.

REFERENCES. Parent, 1927, "Maroc".

TYPE LOCALITY. Spain: Algeciras.

DISTRIBUTION. Palaearctic: Bulgaria, Czech, France incl. Corsica, Greece incl. Crete, Ireland, ?Israel, Italy, Morocco, Poland, Portugal, Spain, "Yugoslavia", Sweden, Tunisia, UK.

### *Syntormon pallipes* (Fabricius, 1794)

MATERIAL. 3♀, Rif, Oued Souk Lhad (river bank), 35°3'26"N, 5°4'10"W, 613 m, 30.IV.2016 (SN), leg. F.Z. Bahid & A. Adghir; 2♂, Chefchaouen, Talassemtane (Forest), 35° 10' 19.648' ' N, 5° 19' 7.521' ' W, 339 m 9.I.2015 (SN), Coll. K. Kettani; 1♀, Perdicaris (park), 35°47'26.675"N, 5°51'12.938"W, 223 m, 16.V.2015 (SN), Coll. K. Kettani; 14♂, 9♀, Rif, Amsemlil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 4.VII.2019 (SN), Coll. M. Nourti.

NOTES. Both *pallipes* and *pseudospicatus* phenotypes are present in Morocco.

REFERENCES. Parent, 1924, Rif, Cap Spartel, Tétouan, Xauen; Parent, 1927, Rif, Cap Spartel.

TYPE LOCALITY. Germany.

DISTRIBUTION. Palaearctic: Abkhazia, Afghanistan, Algeria, Armenia, Austria, Azerbaijan, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Czech, Denmark, Egypt, Estonia, Finland, France, Georgia, Germany, Greece incl. Crete, Hungary, Iceland, Iran, Iraq, Ireland, Israel, Italy, Jordan, Kyrgyzstan, Latvia, Morocco, Netherlands, Norway, Poland, Portugal incl. Madeira, Azores, Romania, Russia (Adygea, Alania, Chechnya, Crimea, Kabardino-Balkaria, Karachai-Cherkessia, Krasnodar, Leningrad, Murmansk, Rostov, Voronezh), Serbia, Slovakia, Spain, Sweden, Switzerland, Tajikistan, Tunisia, Turkey (Adiyaman, Ankara, Antalya, Burdur, Denizli, Hakkari, Isparta, Korucuk, Mugla, Van), UK, Ukraine (Kherson, Odessa), Uzbekistan; Oriental: China; Afrotropical: Madagascar, Tanzania, Yemen, St Helena (?introduced).

### *Syntormon pilitibia* Grichanov, 2013

MATERIAL. 1♂, Rif, Amsemlil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 4.VII.2019 (SN), Coll. M. Nourti.

TYPE LOCALITY. Israel: Menahamiya.

DISTRIBUTION. Palaearctic: Israel. First record for Morocco.

***Syntormon zelleri* (Loew, 1850)**

MATERIAL. 1♂, Rif, Akchour env., Pont de Dieu, 35°13'42"N, 5°10'31"W, 536 m, 1.VII.2019, M. Nourti; 3♂, 2♀, Rif, Amsemilil env. (peat bog), 35°15'614"N, 5°25'943"W, 1067 m, 4.VII.2019 (SN), Coll. M. Nourti; 1♂, Rif, Amsemilil env. (peat bog), 35°15'614"N, 5°25'943"W, 1059 m, 23.IV.2017 (SN), Coll. K. Kettani.

REFERENCES. Vaillant, 1956, HA, Oukaimeden, Izourar; Pârvu et al. 2006, AP, Merja Zerga.

TYPE LOCALITY. Italy: "Sicilien".

DISTRIBUTION. Palaearctic: Abkhazia, Austria, Azerbaijan, Belgium, Czech, France, Germany, Greece incl. Crete, Hungary, Iran, Ireland, Italy, Netherlands, Portugal, Romania, Russia (Chechnya, Krasnodar), Slovakia, Spain, Switzerland, Turkey (Afyonkarahisar, Usak), UK, "Middle Asia".

***Teuchophorus* Loew, 1857*****Teuchophorus* sp.**

MATERIAL. 1♂, Rif, Chefchaouen, Oued Souk Lhad (river bank), 35.057222°N, 5.069444°W, 820 m, 30.IV.2016 (SN), leg. F.Z. Bahid & A. Adghir.

NOTES. The material examined belongs to an undescribed species that will be described and illustrated separately.

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