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Posted on 10/02/2021

DOI: <https://doi.org/10.3897/arphapreprints.e64247>

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 Magdi El-Hawagry,  Hathal Al Dhafer,  Mahmoud Abdel-Dayem,  Martin Hauser

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The family Stratiomyidae in Egypt and Saudi Arabia (Diptera: Stratiomyoidea)

Magdi El-Hawagry[‡], Hathaï Mohammed Al Dhafer[§], Mahmoud Abdel-Dayem[§], Martin Hauser^l

[‡] Entomology Department, Faculty of Science, Cairo University, Giza, Egypt

[§] King Saud University, College of Food and Agriculture Sciences, Riyadh, Saudi Arabia

^l California Department of Food & Agriculture, Sacramento, United States of America

Corresponding author: Magdi El-Hawagry (elhawagry@gmail.com)

Abstract

Background

This study systematically catalogues all known taxa of the family Stratiomyidae in Egypt and Saudi Arabia. It is one in a series of planned studies aiming to catalogue the whole order in both countries.

New information

Twenty species belonging to seven genera and three subfamilies (Pachygastrinae, Stratiomyinae and Nemotelinae) are treated. One of these genera, *Oplodontha*, and two species, *Oplodontha pulchriceps* Loew and *Oxycera turcica* Üstüner & Hasbenli, are recorded herein for the first time from Saudi Arabia. A lectotype for *Nemotelus matrouhensis* Mohammad et al., 2009 is designated. An updated classification, synonymies, type localities, world and local distributions, dates of collection and some colored photographs are provided.

Keywords

Soldier-flies, local distribution, dates of collection, new records

Introduction

The Stratiomyidae is a lower brachycerous Dipteran family, including more than 2650 species classified in 375 genera and 12 subfamilies worldwide ([Woodley 2001](#)). Flies of the family Stratiomyidae, commonly known as soldier-flies, are small to large, ranging from 2 to 28 mm in length, highly varied in shape and coloration, with wings hyaline to variously

patterned or infuscated, and some species likely mimic wasps and bees in their flight and body color (Hauser 2008, Hauser et al. 2017b). These flies can be easily distinguished as adults by the following characters: radial veins grouped together, ending before tip of the wing; costal vein (C) usually ending well before wing apex and discal cell (d) short, usually forming distinct short, often squarish cell at middle of the wing (Marshall et al. 2017).

Adult soldier flies can be found sitting on foliage in sunny locations in damp forest habitats, near water or boggy areas, and some flies can be found frequenting flowers, particularly those of the subfamily Stratiomyinae and some of the subfamily Clitellariinae (James 1981, Khaghaninia et al. 2015, Hauser et al. 2017b).

Immature stages of soldier flies can be found in a variety of habitats. Larvae of the subfamilies Beridinae, Clitellariinae and Sarginae, which are not represented in Egypt or Saudi Arabia, are usually associated with decaying organic matter as leaf litter and rotting fruits. However, larvae of the subfamilies Nemotelinae and Stratiomyinae are aquatic, occurring in slow moving or standing water in rivers, ponds, seepage areas and other transient water sources, with those of the genus *Nemotelus* can be remarkably tolerate to high levels of salinity. Larvae of the subfamily Pachygastrinae can be found under bark of fallen trees (Rozkošný 1983, Hauser 2008, Hauser et al. 2017b).

The family is divided into 12 subfamilies, seven of which are recorded in the Palaearctic Region with about 430 species (Woodley 2001). Of these, only three subfamilies (Pachygastrinae, Stratiomyinae and Nemotelinae) have been represented in Saudi Arabia and/or Egypt by seven genera comprising 20 species. One of these genera, *Oplodontha*, and two species, *Oxycera turcica* Üstüner & Hasbenli and *Oplodontha pulchriceps* Loew, are recorded herein for the first time from Saudi Arabia. This is not surprising as no previous faunistic or systematic studies on the Stratiomyidae have been carried out in Saudi Arabia, and only two species have been recorded from Saudi Arabia amid two comprehensive checklists of the Saudi Arabian Diptera: El-Hawagry et al. (2017) [*Aspidacantha atra* Kertész] and Abu-Zoherah et al. (1993) [*Stratiomys deserticolor* Lindner]. We think the overall number of Saudi Arabian taxa treated in the present study is still low and does not represent the real fauna of Stratiomyidae in this country, and an extensive faunistic and systematic study on the Saudi Arabian Stratiomyidae is required. On the other hand, some previous studies have been carried out in Egypt to list the Stratiomyidae species (Steyskal and El-Bialy 1967) or to study the fauna and/or taxonomy of the family (Lindner 1930, Badrawy 2006, Mohammad et al. 2009), in addition to some miscellaneous studies which described some new species from Egypt (Olivier 1811, Becker 1902, Wiedemann 1830, Lindner 1925, Lindner 1930, Lindner 1937, Lindner 1974).

Egypt and Saudi Arabia are two neighboring countries in the Middle East, separated by the Gulf of Aqaba and the Red Sea (Fig. 1). Egypt is a transcontinental country as its majority is located in the northeastern corner of Africa, while its northeastern extremity, Sinai Peninsula, is located in the southwestern corner of Asia. On the other hand, Saudi Arabia is wholly located in the southwestern corner of Asia. Both Egypt and Saudi Arabia are biogeographically located at the junction of the Palaearctic and the Afrotropical Regions. The faunal affiliation of the two countries is mainly Palaearctic. Exceptions are Gebel Elba,

the southeastern triangle of Egypt and the southwestern part of Saudi Arabia, south to the Tropic of Cancer, which are considered as having an Afrotropical faunal affiliation (Wallace 1876, Hölzel 1998, El-Hawagry and Gilbert 2014, El-Hawagry et al. 2017).

This study is one in a series of taxonomic studies on different Egyptian and Saudi Arabian dipteran taxa aiming to catalogue the whole order Diptera in the two countries (El-Hawagry 2015, Al Dhafer and El-Hawagry 2016, El-Hawagry 2017, El-Hawagry 2018, El-Hawagry et al. 2018, El-Hawagry and Al Dhafer 2019, El-Hawagry et al. 2019, El-Hawagry and Gilbert 2019, El-Hawagry et al. 2020b, El-Hawagry et al. 2020a, El-Hawagry et al. 2021, El-Hawagry and El-Azab 2019).

Materials and methods

Data sources. Data of the present study are obtained from three main sources: 1. Specimens preserved in the Egyptian and Saudi Arabian insect collections and museums, namely: Efflatoun Bey's collection, Cairo University, Egypt (EFC); Collection of Entomological Society of Egypt (ESEC) and King Saud University Museum of Arthropods, Saudi Arabia (KSMA). 2. Previous studies on the Stratiomyidae in Egypt and Saudi Arabia. 3. Specimens collected by the authors and their co-workers especially from Saudi Arabia using both malaise traps and aerial nets. A great deal of faunistic and taxonomic information, including type species, type localities, Old World synonymies, world and local distributions, and collection dates were obtained from relevant literature as well. These sources are listed in the following subsections.

Study area. Egypt and Saudi Arabia, the study area, are two neighboring countries in the Middle East, separated by the Red Sea and Gulf of Aqaba. They constitute a part of the Great Desert Belt, mainly with an arid desert climate characterized by hot summer and a mild winter (Alsharhan et al. 2001, Nasser et al. 2019).

Ecologists divide Egypt into eight ecological zones: the Coastal Strip, Lower Nile Valley & Delta, Upper Nile Valley, Fayoum, Eastern Desert, Western Desert, Sinai and Gebel Elba (Fig. 1, El-Hawagry and Gilbert 2014). These ecological zones are adopted in the present study in the sections of localities and dates of collection. However, Saudi Arabia is not divided into ecological zones, so ecologists usually adopt the administrative divisions instead. These divisions (also called emirates, regions or provinces) are adopted in the present study, namely: Makkah, Riyadh, Eastern Province, Asir, Jazan, Al-Madinah, Al-Qaseem, Tabuk, Hail, Najran, Al-Jawf, Al-Baha and Northern Frontier (El-Hawagry and Al Dhafer 2019).

Classification. The classification and arrangement of taxa in the present study basically follows that used in Woodley (2001) and subsequent updates by Hauser et al. (2017a).

World distribution. Sources of world distribution of each stratiomyid species are given between square brackets at the end of the list of countries.

Local distribution and dates of collection. Localities within each Egyptian ecological zone or Saudi Arabian administrative region are arranged alphabetically and written after a colon following each zone or region followed by the dates of collection between parentheses, for example, "Coastal Strip: Abu-Kir, Cleopatra, Dekhela (April to September)" and "Tabuk: Tabuk City (May)". Sources for this distribution are given between square brackets at the end of the section. Coordinates of all Egyptian and Saudi Arabian localities of the family Stratiomyidae are listed (Table 1). Distribution maps of species are created using SimpleMappr (Shorthouse 2010).

Abbreviations used:

- **AF**, Afrotropical
- **CSCA**, California State Collection of Arthropods, California, Sacramento, USA
- **EFC**, Efflatoun Bey's collection, Department of Entomology, Faculty of Science, Cairo University, Egypt
- **ESEC**, Collection of Entomological Society of Egypt, Cairo, Egypt
- **KSMA**, King Saud University Museum of Arthropods, Riyadh, Saudi Arabia
- **MCCB**, Museum of Community College, Al-Baha University, Saudi Arabia
- **OR**, Oriental
- **PA**, Palearctic

The Catalogue

Family Stratiomyidae

Subfamily Stratiomyiinae

Genus *Aspidacantha* Kertész, 1916

- GBIF <https://www.gbif.org/species/1578168>

Nomenclature:

Aspidacantha Kertész, 1916: 154. Type species: *Aspidacantha atra* Kertész, by original designation.

Aspidacantha atra Kertész, 1916

- GBIF <https://www.gbif.org/species/1578171>

Nomenclature:

Aspidacantha atra Kertész, 1916: 155. Type locality: Eritrea (Assab) [Assab belongs now to Eritrea not to Ethiopia as written in world catalogues].

Materials

- a. scientificName: *Aspidacantha atra*; taxonID: <https://www.gbif.org/species/1578171>; country: Egypt; locality: Hurghada; decimalLatitude: 27.23370; decimalLongitude: 33.8256; samplingProtocol: Light trap; eventDate: 9/11-22/1994; sex: 1 female; lifeStage: Adult; recordedBy: H. Pohl; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: CSCA
- b. scientificName: *Aspidacantha atra*; taxonID: <https://www.gbif.org/species/1578171>; country: Saudi Arabia; locality: Raydah; decimalLatitude: 18.20525; decimalLongitude: 42.4101; samplingProtocol: Sweeping; eventDate: 06-07-2014; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- c. scientificName: *Aspidacantha atra*; taxonID: <https://www.gbif.org/species/1578171>; country: Saudi Arabia; locality: Raydah; decimalLatitude: 18.201583; decimalLongitude: 42.4089; samplingProtocol: Light trap; eventDate: 02-21-2014; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- d. scientificName: *Aspidacantha atra*; taxonID: <https://www.gbif.org/species/1578171>; country: Saudi Arabia; locality: Raydah; decimalLatitude: 18.201583; decimalLongitude: 42.4089; samplingProtocol: Light trap; eventDate: 07-31-2015; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- e. scientificName: *Aspidacantha atra*; taxonID: <https://www.gbif.org/species/1578171>; country: Saudi Arabia; locality: Raydah; decimalLatitude: 18.20525; decimalLongitude: 42.4102; samplingProtocol: Sweeping; eventDate: 09-05-2015; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- f. scientificName: *Aspidacantha atra*; taxonID: <https://www.gbif.org/species/1578171>; country: Saudi Arabia; locality: Raydah; decimalLatitude: 18.201583; decimalLongitude: 42.4089; samplingProtocol: Light trap; eventDate: 09-05-2015; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- g. scientificName: *Aspidacantha atra*; taxonID: <https://www.gbif.org/species/1578171>; country: Saudi Arabia; locality: Raydah; decimalLatitude: 18.201583; decimalLongitude: 42.4089; samplingProtocol: Malaise trap; eventDate: 09-05-2015; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- h. scientificName: *Aspidacantha atra*; taxonID: <https://www.gbif.org/species/1578171>; country: Saudi Arabia; locality: Raydah; decimalLatitude: 18.204417; decimalLongitude: 42.4124; samplingProtocol: Malaise trap; eventDate: 02-20-2014; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- i. scientificName: *Aspidacantha atra*; taxonID: <https://www.gbif.org/species/1578171>; country: Saudi Arabia; locality: Raydah; decimalLatitude: 18.20525; decimalLongitude: 42.4101; samplingProtocol: Malaise trap; eventDate: 06-07-2014; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA

Distribution: AF: Democratic Republic of Congo, Eritrea, Ethiopia, Saudi Arabia [as "south western part"], Tanzania, Uganda, United Arab Emirates, Zimbabwe. PA: Egypt,

Israel, Russia, Turkmenistan. [Sources: Lindner (1936), Woodley (2001), Hauser (2008) and El-Hawagry et al. (2017)]

Local distribution and dates of collection (Fig. 2): EGYPT: Eastern Desert: Hurghada (September). Western Desert: Siwa Oasis (August). [Sources: Lindner (1930) and museum material]. SAUDI ARABIA: Asir: Raydah Nature Reserve (February to December). [Sources: El-Hawagry et al. (2017) and collected material]

Genus *Sternobrithes* Loew, 1857

- GBIF <https://www.gbif.org/species/1576881>

Nomenclature:

Sternobrithes Loew, 1857: 264. Type species *Sternobrithes tumidus* Loew, by monotypy.

Sternobrithes sp.

- GBIF <https://www.gbif.org/species/1576881>

Materials

- scientificName: *Sternobrithes* sp.; taxonID: <https://www.gbif.org/species/1576881>;
country: Saudi Arabia; locality: Shada; decimalLatitude: 19.8429; decimalLongitude: 41.3115; samplingProtocol: Malaise trap; eventDate: 11-15-2015; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- scientificName: *Sternobrithes* sp.; taxonID: <https://www.gbif.org/species/1576881>;
country: Saudi Arabia; locality: Shada; decimalLatitude: 19.8429; decimalLongitude: 41.3115; samplingProtocol: Malaise trap; eventDate: 05-05-2015; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- scientificName: *Sternobrithes* sp.; taxonID: <https://www.gbif.org/species/1576881>;
country: Saudi Arabia; locality: Shada; decimalLatitude: 19.8388; decimalLongitude: 41.3101; samplingProtocol: Malaise trap; eventDate: 11-15-2015; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- scientificName: *Sternobrithes* sp.; taxonID: <https://www.gbif.org/species/1576881>;
country: Saudi Arabia; locality: Shada; decimalLatitude: 19.8388; decimalLongitude: 41.3101; samplingProtocol: Light trap; eventDate: 09-02-2015; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA

Distribution: The genus *Sternobrithes* is widely distributed all over the African continent (Botswana, Burundi, Cameroon, Cape Verde Islands, Democratic Republic of the Congo, Ethiopia, Ghana, Guinea, Ivory Coast, Kenya, Liberia, Malawi, Mozambique, Namibia, Nigeria, Senegal, Sierra Leone, Somalia, South Africa, Tanzania, Togo, Uganda and Zimbabwe).

Distribution of *Sternobrithes* sp.: AF: Kenya, Saudi Arabia [as “south western part”], Yemen.

Local distribution and dates of collection (Fig. 2): SAUDI ARABIA: Al-Baha: Jabal Shada al-A'la Nature Reserve (May to November). Asir: Raydah Nature Reserve (June). [Sources: El-Hawagry et al. (2017) and collected material]

Notes: El-Hawagry et al. (2017) reported this species as *Sternobrithes* sp., and further research indicated that this is an undescribed species (Fig. 3). Because we don't have a male specimen available, we are not yet describing this species here. According to the generic key in Hauser et al. (2017b) the difference between *Argyrobrithes* and *Sternobrithes* is the color of the last antennal segment, but further studies indicate that *Argyrobrithes* is characterized by the dichoptic male eyes and a very long last antennal segment. The two genera are widely distributed through Africa and the Oriental region and a more thorough revision is needed to clarify the limits of the genera and which species should be included in each genus. Material of this undescribed species are known from Yemen and Kenya.

Subfamily Stratiomyinae

Tribe Oxycerini

Genus *Oxycera* Meigen, 1803

- GBIF <https://www.gbif.org/species/1577931>

Nomenclature:

Oxycera Meigen, 1803: 265. Type species: *Musca hypoleon* Linnaeus [= *Musca trilineata* Linnaeus], by designation of Latreille (1810).

Oxycera orientalis (Lindner, 1974)

- GBIF <https://www.gbif.org/species/5078177>

Nomenclature:

Heraclina orientalis Lindner, 1974: 103. Type locality: Egypt (Sinai Mountains: Wadi Watir) [Wadi Watir is located in Sinai, Egypt, not in Israel as given in world catalogues].

Material

- scientificName: *Oxycera orientalis*; taxonID: <https://www.gbif.org/species/5078177>;
country: Egypt; locality: Wadi Watir; decimalLatitude: 29.02147; decimalLongitude: 34.6731; samplingProtocol: Not given; eventDate: 09-06-1941; sex: 1 male; lifeStage: Adult; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Egypt. [Sources: Furth (1983), Woodley (2001) and Badrawy (2006)]

Local distribution and dates of collection (Fig. 4): EGYPT: Sinai: Wadi El-Lega, Wadi Watir (Ain Fortaga) (September to November). [Sources: original description (Lindner 1974) and museum material]

***Oxycera turcica* Üstüner & Hasbenli, 2005**

- GBIF <https://www.gbif.org/species/5078139>

Nomenclature:

Oxycera turcica Üstüner & Hasbenli, 2005: 163. Type locality: Turkey (Sivas: Sarkisla, Karacaören Village).

Material

- scientificName: *Oxycera turcica*; taxonID: <https://www.gbif.org/species/5078139>; country: Saudi Arabia; locality: Al-Mekhwa; decimalLatitude: 19.798133; decimalLongitude: 41.4107; samplingProtocol: Malaise trap; eventDate: 03-15-2012; lifeStage: Adult; recordedBy: El-Hawagry; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: MCCB

Distribution: PA: Saudi Arabia, Turkey. [Sources: Woodley (2011) and collected material]

Local distribution and dates of collection (Fig. 4): SAUDI ARABIA: Al-Baha: Al-Mekhwa (March). [Source: collected material]

Notes: This species is recorded herein for the first time from Saudi Arabia.

Tribe Stratiomyini

Genus *Odontomyia* Meigen, 1803

- GBIF <https://www.gbif.org/species/1580809>

Nomenclature:

Odontomyia Meigen, 1803: 265. Type species: *Musca hydroleon* Linnaeus, by designation of Westwood (1840).

***Odontomyia angulata* (Panzer, 1798)**

- GBIF <https://www.gbif.org/species/1581104>

Nomenclature:

Stratiomys angulata Panzer, 1798: 19. Type locality: Germany (Nürnberg).

Stratiomys vulpina Panzer, 1798: 24. Type locality: Germany (Nürnberg).

Stratiomys hydropota Meigen, 1822: 147. Type locality: Europe.

Odontomyia latifaciata Macquart, 1834: 248. Type locality: France.

Stratiomys brevicornis Loew, 1840: 25. Type locality: Poland (Poznań).

Stratiomys brevicornis Loew, 1840: 557. Type locality: Poland (Poznań). Preoccupied, primary homonym of *Stratiomys brevicornis* Loew, 1840.

Stratiomys ruficornis Zetterstedt, 1842: 139. Type locality: Sweden (Gotland: Ejsta). Preoccupied, primary homonym of *Stratiomyia ruficornis* Macquart, 1838.

Odontomyia hydrophila Loew, 1846: 486. Type locality: Turkey (Makri) and Italy (Sicily: Siracusa).

Eulalia latifasciata Kertész, 1908: 74. Unjustified emendation of *Odontomyia latifaciata* Macquart.

Distribution: PA: Afghanistan, Albania, Algeria, Austria, Belgium, Bulgaria, China, Czech Republic, Denmark, Egypt, England, Estonia, Finland, France, Germany, Greece, Hungary, Iran, Israel, Italy including Sardinia, Kazakhstan, Morocco, Netherlands, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Turkey, UAE, former Yugoslavia. [Sources: Woodley (2001), Mason et al. (2009), Hauser (2014) and Yimlahi et al. (2017)]

Local distribution and dates of collection: Unknown.

Notes: This species was listed by Steyskal and El-Bialy (1967), Woodley (2001) and Badrawy (2006) as recorded from Egypt, but no specimens have been collected or preserved in Egyptian museums to confirm these records.

Odontomyia megacephala Olivier, 1811

- GBIF <https://www.gbif.org/species/7863197>

Nomenclature:

Odontomyia megacephala Olivier, 1811: 432. Type locality: Egypt (borders of the Nile [as "bords du Nil"]).

Materials

- scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Moweileh; decimalLatitude: 30.3924; decimalLongitude: 34.1412; samplingProtocol: Not given; eventDate: Sept.1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Kosseima; decimalLatitude: 30.90307; decimalLongitude: 34.3836; samplingProtocol: Not given; eventDate: 09-10-1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Kharga Oasis; decimalLatitude: 25.25;

- decimalLongitude: 30.5833; samplingProtocol: Not given; eventDate: Oct.1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: ESEC
- d. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Fayoum; decimalLatitude: 29.32061; decimalLongitude: 30.818; samplingProtocol: Not given; eventDate: Sept.1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: ESEC
- e. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Alexandria; decimalLatitude: 31.2129; decimalLongitude: 29.9726; samplingProtocol: Not given; eventDate: 07-04-1920; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- f. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Nuzha; decimalLatitude: 31.2001; decimalLongitude: 29.9436; samplingProtocol: Not given; eventDate: 05-07-1921; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- g. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Nuzha; decimalLatitude: 31.2001; decimalLongitude: 29.9436; samplingProtocol: Not given; eventDate: 07-18-1921; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- h. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Cleopatra; decimalLatitude: 31.22021; decimalLongitude: 29.9348; samplingProtocol: Not given; eventDate: 07-10-1921; sex: 2 females; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- i. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Cleopatra; decimalLatitude: 31.22021; decimalLongitude: 29.9348; samplingProtocol: Not given; eventDate: 07-22-1921; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- j. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Cleopatra; decimalLatitude: 31.22021; decimalLongitude: 29.9348; samplingProtocol: Not given; eventDate: 08-01-1921; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- k. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Fayed; decimalLatitude: 30.32382; decimalLongitude: 32.3008; samplingProtocol: Not given; eventDate: 09-24-1925; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- l. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Fayed; decimalLatitude: 30.32382; decimalLongitude: 32.3008; samplingProtocol: Not given; eventDate: 10-20-1925; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- m. scientificName: *Odontomyia megacephala*; taxonID: <https://www.gbif.org/species/7863197>; country: Egypt; locality: Wadi El-Natroun; decimalLatitude: 30.3814;

decimalLongitude: 30.3441; samplingProtocol: Not given; eventDate: 08-06-1929; sex: 2 females; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Egypt. [Sources: Lindner (1936), Woodley (2001) and Badrawy (2006)]

Local distribution and dates of collection (Fig. 5): EGYPT: Coastal Strip: Alexandria, Cleopatra, Mariout, Max, Nuzha (May and August). Eastern Desert: Fayed (September). Fayoum: Fayoum City (September). Lower Nile Valley: El-Baragil (April). Sinai: Kosseimah, Moweileh (September). Western Desert: Kharga Oasis, Wadi El-Natroun (August to October). [Sources: original description (Olivier 1811), Badrawy (2006) and museum material]

Odontomyia xanthopus Bezzi, 1906

- GBIF <https://www.gbif.org/species/1581000>

Nomenclature:

Odontomyia xanthopus Bezzi, 1906: 225. Type locality: Eritrea (Adi Ugri) [Adi Ugri belongs now to Eritrea not to Ethiopia as written in world catalogues].

Material

- scientificName: *Odontomyia xanthopus*; taxonID: <https://www.gbif.org/species/1581000>; country: Egypt; locality: Gebel Ela; decimalLatitude: 22.2008; decimalLongitude: 36.3331; samplingProtocol: Not given; eventDate: Apr.1928; sex: 1 male, 3 females; lifeStage: Adult; recordedBy: M.Tewfik; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: AF: Eritrea, Malawi, Oman, Yemen. PA: Egypt, Israel. [Sources: original description (Bezzi 1906), Woodley (2001) and collected material from Yemen and Oman]

Local distribution and dates of collection (Fig. 5): EGYPT: Gebel Elba: ? (April). Sinai: El-Tour, Wadi Hebran (May to July). [Source: Lindner (1930), Lindner (1974) and museum material]

Genus Oplodontha Rondani, 1863

- GBIF <https://www.gbif.org/species/1577328>

Nomenclature:

Oplodontha Rondani, 1863: 78. Type species: *Stratiomys viridula* Fabricius, by original designation.

Oplodontha minuta Fabricius, 1794

- GBIF <https://www.gbif.org/species/1577386>

Nomenclature:

Stratiomys minuta Fabricius, 1794: 268. Type locality: India (Tranquebar).

Nemotelus pusillus Fabricius, 1794: 271. Type locality: India (Tranquebar).

Musca minutor Turton, 1801: 631. New name for *Stratiomys minuta* Fabricius, 1794.

Musca minor Turton, 1801: 655. New name for *Nemotelus pusillus* Fabricius, 1794.

Oxycera indica Brunetti, 1907: 119. Type locality: India (Uttar Pradesh: Bareilly).

Odontomyia incompleta Brunetti, 1907: 128. Nomen nudum.

Odontomyia ochracea Brunetti, 1907: 129. Type locality: India (Calcutta).

Odontomyia submutica Brunetti, 1907: 130. Type locality: India (Siliguri, Calcutta and Tollygunge).

Eulalia oasina Lindner, 1925: 150. Type locality: Egypt (Khârga Oasis and Dakhla Oasis).

Materials

- scientificName: *Oplodontha minuta*; taxonID: <https://www.gbif.org/species/1577386>; country: Egypt; locality: Dakhla Oasis; decimalLatitude: 25.5; decimalLongitude: 29.1667; samplingProtocol: Not given; eventDate: 05-13-2018; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- scientificName: *Oplodontha minuta*; taxonID: <https://www.gbif.org/species/1577386>; country: Egypt; locality: Ein Moussa; decimalLatitude: 29.8667; decimalLongitude: 32.65; samplingProtocol: Not given; eventDate: 09-20-1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- scientificName: as *Eulalia oasina*; taxonID: <https://www.gbif.org/species/1577386>; country: Egypt; locality: Kharga Oasis; decimalLatitude: 25.25; decimalLongitude: 30.5833; samplingProtocol: Not given; eventDate: 05-10-1918; sex: 1 male; lifeStage: Adult; recordedBy: Storey; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- scientificName: as *Eulalia oasina*; taxonID: <https://www.gbif.org/species/1577386>; country: Egypt; locality: Kharga Oasis; decimalLatitude: 25.25; decimalLongitude: 30.5833; samplingProtocol: Not given; eventDate: 06-12-1918; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: AF: Socotra Island, United Arab Emirates, Yemen. OR: India, Sri Lanka. PA: Afghanistan, Egypt, Israel. [Sources: original description of *O. oasina* (Lindner 1925), Woodley (2001) and Tkoč and Rozkošný (2014)]

Local distribution and dates of collection (Fig. 6): EGYPT: Eastern Desert: Ein Moussa (September). Western Desert: Dakhla Oasis, Kharga Oasis (May and June). [Sources: Lindner (1925), Lindner (1930) and museum material]

Oplodontha pulchriceps Loew, 1858

- GBIF <https://www.gbif.org/species/1577339>

Nomenclature:

Odontomyia pulchriceps Loew, 1858: 335. Type locality: South Africa (Cape of Good Hope).

Odontomyia pulchriceps Loew, 1860: 80. Type locality: South Africa (Cape of Good Hope). Preoccupied, primary homonym of *Odontomyia pulchriceps* Loew, 1858.

Hoplodonta madagascariensis Lindner, 1936: 42. Type locality: Madagascar (Bekily).

Materials

- scientificName: *Oplodontha pulchriceps*; taxonID: <https://www.gbif.org/species/1577339>; country: Saudi Arabia; locality: Jazan; decimalLatitude: 16.9595; decimalLongitude: 42.8348; samplingProtocol: Malaise trap; eventDate: 05-11-2018; sex: 1 male; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- scientificName: *Oplodontha pulchriceps*; taxonID: <https://www.gbif.org/species/1577339>; country: Saudi Arabia; locality: Dawmat Al-Jandal; decimalLatitude: 29.809552; decimalLongitude: 39.8749; samplingProtocol: Malaise trap; eventDate: 05-26-2018; sex: 1 male; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA
- scientificName: *Oplodontha pulchriceps*; taxonID: <https://www.gbif.org/species/1577339>; country: Saudi Arabia; locality: Hassan Ameen farm; decimalLatitude: 28.36661; decimalLongitude: 36.6297; samplingProtocol: Sweeping; eventDate: 05-27-2018; sex: 1 female; lifeStage: Adult; recordedBy: Aldhafer H.M. et al.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: KSMA

Distribution: AF: Democratic Republic of Congo, Lesotho, Madagascar, Mozambique, Saudi Arabia [as “south western part”], South Africa, United Arab Emirates. PA: Israel, Saudi Arabia [Jawf and Tabouk]. [Sources: Woodley (2001), Hauser (2008) and collected material]

Local distribution and dates of collection (Fig. 6): SAUDI ARABIA: Al-Jawf: Dawmat Al-Jandal (May). Jazan: Jazan (May). Tabouk: Hassan Ameen farm (May). [Source: collected material]

Notes: This species (Fig. 7) with its genus, *Oplodontha*, are recorded herein for the first time from Saudi Arabia. It looks similar to *O. minuta* Fabricius; however, this case requires more clarification in a future study.

Genus *Stratiomys* Geoffroy, 1762

- GBIF <https://www.gbif.org/species/1501902>

Nomenclature:

Stratiomys Geoffroy, 1762: 449, 475. Type species: *Musca chamaeleon* Linnaeus, by designation of I.C.Z.N. (1957).

Stratiomys cenisia Meigen, 1822

- GBIF <https://www.gbif.org/species/1577708>

Nomenclature:

Stratiomys cenisia Meigen, 1822: 136. Type locality: France (Mont Cenis).

Stratiomys flaviventris Loew, 1846: 464. Type locality: Italy (Sicily: Siracusa).

Stratiomyia ahnger Pleske, 1901: 364. Type locality: "Transcaspian Region" [probably = Turkmenistan].

Stratiomyia cypria Pleske, 1902: 413. Type locality: Cyprus (Lárnax).

Stratiomyia kervillei Villeneuve, 1911: 4. Type locality: Syria (near "lac de Homs").

Stratiomys hispanica ssp. *planes* James, 1941: 18. Type locality: Iran (Curum, 100 km from Bouchir).

Distribution: PA: Algeria, Armenia, Austria, Bulgaria, Cyprus, Czech Republic, Egypt, France, Germany, Hungary, Iran, Israel, Italy, Kazakhstan, Morocco, Poland, Romania, Russia, Slovakia, Spain, Syria, Tunisia, Turkey, Turkmenistan, Ukraine, former Yugoslavia. [Sources: Woodley (2001) and Yimlahi et al. (2017)]

Local distribution and dates of collection: Unknown.

Notes: This species was listed by Woodley (2001), Badrawy (2006) and Yimlahi et al. (2017) as recorded from Egypt, but no specimens have been collected or preserved in Egyptian museums to verify these records.

Stratiomys deserticolor Lindner, 1930

- GBIF <https://www.gbif.org/species/4293811>

Nomenclature:

Stratiomyia segnis form *deserticolor* Lindner, 1930: 27. Type locality: Egypt (Siwa Oasis).

Materials

- a. scientificName: *Stratiomys deserticolor*; taxonID: <https://www.gbif.org/species/4293811>; country: Egypt; locality: Kharga Oasis; decimalLatitude: 25.2500; decimalLongitude: 30.5833; samplingProtocol: Not given; eventDate: 08-12-1926; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- b. scientificName: *Stratiomys deserticolor*; taxonID: <https://www.gbif.org/species/4293811>; country: Egypt; locality: Mariout; decimalLatitude: 31.0172; decimalLongitude: 29.76; samplingProtocol: Not given; eventDate: Jul-1934; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Egypt, Saudi Arabia. [Sources: original description (Lindner 1930), Abu-Zoherah et al. (1993) and Woodley (2001)]

Local distribution and dates of collection (Fig. 8): EGYPT: Coastal Strip: Mariout (July). Western Desert: Kharga Oasis, Siwa Oasis (February to August) [Sources: Original description (Lindner 1930) and museum material]. SAUDI ARABIA: localities and dates unknown. [Sources: Abu-Zoherah et al. (1993)]

Stratiomys longicornis (Scopoli, 1763)

- GBIF <https://www.gbif.org/species/1577660>

Nomenclature:

Hirtea longicornis Scopoli, 1763: 367. Type locality: "Carniola" [= Slovenija?].

Musca tenebricus Harris, 1778: 45. Type locality: England.

Stratiomys strigata Fabricius, 1781: 417. Type locality: Italy.

Stratiomys tomentosa Schrank, 1803: 94. Type locality: Germany (Ingolstadt).

Stratiomys villosa Meigen, 1804: 124. Type locality: Europe.

Stratiomys nubeculosa Meigen, 1804: 125. Type locality: Europe.

Stratiomys thoracica Fabricius, 1805: 79. Type locality: France.

Stratiomys hirtuosa Meigen, 1830: 347. Type locality: Europe.

Stratiomys anubis Wiedemann, 1830: 60. Type locality: Egypt.

Stratiomyia flavifrons Macquart, 1838: 179. Type locality: "Mesopotamie" [= Iraq].

Stratiomys strigata var. *pallida* Loew, 1840: 25. Type locality: Poland (Poznań).

Stratiomys strigata var. *pallida* Loew, 1840: 557. Type locality: Poland (Poznań). Preoccupied, primary homonym of *Stratiomys strigata* var. *pallida* Loew, 1840.

Stratiomys lambessiana Bigot, 1879: 212. Type locality: Algeria (Lambessa).

Stratiomys flavolimbata Costa, 1893: 21. Type locality: Tunisia.

Stratiomyia pleskei Wagner, 1903: 108. Type locality: Uzbekistan (Fergana).

Stratiomyia segnis Becker, 1906: 8. Type locality: Tunisia (vicinity of Tunis).

Hirtea efflatouni Lindner, 1925: 148. Type locality: Egypt (Giza).

Stratiomyia (Hirtea) surcoufi Ségué, 1930: 63. Type locality: Algeria (Touggourt).

Hirtea surcoufi Ségué, 1932: 125. Type locality: Algeria (Touggourt). Preoccupied, secondary homonym of *Stratiomyia surcoufi* Ségué, 1930.

Stratiomyia longicornis ssp. *palaestinensis* Lindner, 1937: 64. Type locality: Israel (Upper-Galilee, Kfar-Giladi).

Stratiomyia (Hirtea) longicornis ssp. *flavoscutellata* Lindner, 1940: 24. Type locality: China (Shanxi Province: "Ta-tong-fou"). Preoccupied, primary homonym of *Stratiomyia flavoscutellata* Wulp, 1885.

Materials

- a. scientificName: *Stratiomys longicornis*; taxonID: <https://www.gbif.org/species/1577660>; country: Egypt; locality: Siala; decimalLatitude: 31.20849; decimalLongitude: 29.8805; samplingProtocol: Not given; eventDate: Nov.1913; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- b. scientificName: *Stratiomys longicornis*; taxonID: <https://www.gbif.org/species/1577660>; country: Egypt; locality: Fayed; decimalLatitude: 30.32382; decimalLongitude: 32.3008; samplingProtocol: Not given; eventDate: Oct.1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- c. scientificName: *Stratiomys longicornis*; taxonID: <https://www.gbif.org/species/1577660>; country: Egypt; locality: Marg; decimalLatitude: 31.0667; decimalLongitude: 30.2167; samplingProtocol: Not given; eventDate: 03-24-1918; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- d. scientificName: *Stratiomys longicornis*; taxonID: <https://www.gbif.org/species/1577660>; country: Egypt; locality: Kosseima; decimalLatitude: 30.90307; decimalLongitude: 34.3836; samplingProtocol: Not given; eventDate: Aug.1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- e. scientificName: *Stratiomys longicornis*; taxonID: <https://www.gbif.org/species/1577660>; country: Egypt; locality: Moweileh; decimalLatitude: 30.3924; decimalLongitude: 34.1412; samplingProtocol: Not given; eventDate: 08-21-1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- f. scientificName: *Stratiomys longicornis*; taxonID: <https://www.gbif.org/species/1577660>; country: Egypt; locality: Helwan; decimalLatitude: 29.8500; decimalLongitude: 31.3333; samplingProtocol: Not given; eventDate: 11-25-1913; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- g. scientificName: *Stratiomys longicornis*; taxonID: <https://www.gbif.org/species/1577660>; country: Egypt; locality: Benha; decimalLatitude: 30.46572; decimalLongitude: 31.18121; samplingProtocol: Not given; eventDate: 05-09-1918; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC

- h. scientificName: *Stratiomys longicornis*; taxonID: <https://www.gbif.org/species/1577660>; country: Egypt; locality: Gezeira; decimalLatitude: 30.04596; decimalLongitude: 31.22435; samplingProtocol: Not given; eventDate: 09-21-1917; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- i. scientificName: *Stratiomys longicornis*; taxonID: <https://www.gbif.org/species/1577660>; country: Egypt; locality: Kharga Oasis; decimalLatitude: 25.25; decimalLongitude: 30.5833; samplingProtocol: Not given; eventDate: 01-03-1914; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC

Distribution: PA: Afghanistan, Albania, Algeria, Armenia, Austria, Azerbaijan, Belgium, Bulgaria, China, Cyprus, Czech Republic, Denmark, Egypt, England, France, Germany, Greece, Hungary, Iran, Israel, Italy including Sardinia, Korea, Lithuania, Malta, Mongolia, Morocco, Netherlands, Poland, Portugal, Romania, Russia, Scotland, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Turkey, former Yugoslavia. [Sources: Woodley (2001), Mason et al. (2009) and Yimlahi et al. (2017)]

Local distribution and dates of collection (Fig. 8): EGYPT: Coastal Strip: El-Siala, Cleopatra, Dekhela, Nuzha (April to November). Eastern Desert: Fayed (October). Fayoum: Fayoum City, Nazla, Sanhur (April, May and September). Lower Nile Valley and Delta: Abu-Rawash, Benha, Faraskour, Gezeira, Giza, Helwan, Kerdassa, Marg, Sandoub, Shubra (March to November). Sinai: El-Arish, Kosseimah, Moweileh (April and August). Western Desert: Kharga Oasis, Siwa Oasis (January and May). [Sources: Lindner (1925) and museum material]

***Stratiomys singularior* (Harris, 1776)**

- GBIF <https://www.gbif.org/species/4293822>

Nomenclature:

Musca singularior Harris, 1778: 45. Type locality: England.

Stratiomys furcata Fabricius, 1794: 264. Type locality: Germany.

Stratiomys panthaleon Fallén, 1817: 7. Type locality: Sweden.

Stratiomys riparia Meigen, 1822: 138. Type locality: Europe.

Stratiomys paludosa Siebke, 1863: 149. Type locality: Norway (Dovre Mountains: Jerkin). Preoccupied, primary homonym of *Stratiomys paludosa* Schummel in Gravenhorst, 1837.

Materials

- a. scientificName: *Stratiomys singularior*; taxonID: <https://www.gbif.org/species/4293822>; country: Egypt; locality: Fayoum; decimalLatitude: 29.32061; decimalLongitude: 30.818; samplingProtocol: Not given; eventDate: 03-01-1947; sex: 1 male; lifeStage: Adult; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

- b. scientificName: *Stratiomys singularior*; taxonID: <https://www.gbif.org/species/4293822>; country: Egypt; locality: Girza; decimalLatitude: 29.49968; decimalLongitude: 31.0738; samplingProtocol: Not given; eventDate: 04-09-1950; sex: 2 males; lifeStage: Adult; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- c. scientificName: *Stratiomys singularior*; taxonID: <https://www.gbif.org/species/4293822>; country: Egypt; locality: Abu-Zaabal; decimalLatitude: 30.24098; decimalLongitude: 31.35211; samplingProtocol: Not given; eventDate: 03-19-1950; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Armenia, Austria, Belgium, Bulgaria, China, Czech Republic, Denmark, Egypt, England, Estonia, Finland, France, Germany, Hungary, Iran, Ireland, Italy, Kazakhstan, Lithuania, Mongolia, Netherlands, Norway, Poland, Romania, Russia, Slovakia, Spain, Sweden, Switzerland, Ukraine, former Yugoslavia. [Sources: Woodley (2001) and Badrawy (2006)]

Local distribution and dates of collection (Fig. 9): EGYPT: Fayoum: Fayoum City, Girza (March and April). Lower Nile Valley & Delta: Abu-Zaabal (March). [Source: Badrawy (2006) and museum material]

Subfamily Nemotelinae

Genus *Nemotelus* Geoffroy, 1762

- GBIF <https://www.gbif.org/species/1501964>

Nomenclature:

Nemotelus Geoffroy, 1762: 450, 542. Type species: *Musca pantherina* Linnaeus, by designation of I.C.Z.N. (1957).

Subgenus *Nemotelus* Geoffroy, 1762

Nemotelus (Nemotelus) anchora Loew, 1846

- GBIF <https://www.gbif.org/species/1578822>

Nomenclature:

Nemotelus anchora Loew, 1846: 429. Type locality: Italy (Sicily: Siracusa).

Nemotelus siculus Jaennicke, 1866: 224. Type locality: Italy (Sicily).

Nemotelus persicus Pleske in Lindner, 1937: 137. Type locality: Iran (Irak-Adzhemi: Buyun Village).

Material

- a. scientificName: *Nemotelus anchora*; taxonID: <https://www.gbif.org/species/1578822>; country: Egypt; locality: Fayoum; decimalLatitude: 29.32061; decimalLongitude: 30.818;

samplingProtocol: Not given; eventDate: 03-01-1947; sex: 32 males, 5 females; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Algeria, Egypt, Iran, Israel, Italy including Sicily and Sardinia, Malta, Russia, Tunisia. [Sources: Woodley (2001), Mason et al. (2009) and Mohammad et al. (2009)]

Local distribution and dates of collection (Fig. 9): EGYPT: Fayoum: ? (March). [Source: Mohammad et al. (2009)]

***Nemotelus (Nemotelus) candidus* Becker, 1906**

- GBIF <https://www.gbif.org/species/1578675>

Nomenclature:

Nemotelus candidus Becker, 1906: 4. Type locality: Algeria (Biskra: Hammam-Salahin).

Material

- a. scientificName: *Nemotelus candidus*; taxonID: <https://www.gbif.org/species/1578675>; country: Egypt; locality: Wadi El-Natroun; decimalLatitude: 30.3814; decimalLongitude: 30.3441; samplingProtocol: Not given; eventDate: 08-06-1929; sex: 4 males, 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Algeria, Egypt. [Sources: Woodley (2001) and Mohammad et al. (2009)]

Local distribution and dates of collection (Fig. 10): EGYPT: Coastal Strip: Dekhela (May and September). Western Desert: Wadi El-Natroun (August). [Source: Mohammad et al. (2009)]

***Nemotelus (Nemotelus) dentatus* Becker, 1902**

- GBIF <https://www.gbif.org/species/1578829>

Nomenclature:

Nemotelus dentatus Becker, 1902: 7. Type localities: Egypt (Birket Qaroun, Damietta and Alexandria).

Materials

- a. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Maadi; decimalLatitude: 29.95772; decimalLongitude: 31.2505; samplingProtocol: Not given; eventDate: 06-05-1916; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- b. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Helwan; decimalLatitude: 29.8500; decimalLongitude: 31.3333;

- samplingProtocol: Not given; eventDate: 02-11-1924; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: ESEC
- c. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Helwan; decimalLatitude: 29.8500; decimalLongitude: 31.3333; samplingProtocol: Not given; eventDate: 02-12-1924; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: ESEC
- d. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Fayoum; decimalLatitude: 29.32061; decimalLongitude: 30.818; samplingProtocol: Not given; eventDate: 03-01-1947; sex: 2 males, 2 females; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- e. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Marg; decimalLatitude: 31.0667; decimalLongitude: 30.2167; samplingProtocol: Not given; eventDate: 04-01-1923; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- f. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Helwan; decimalLatitude: 29.8500; decimalLongitude: 31.3333; samplingProtocol: Not given; eventDate: 04-02-1939; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- g. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Kharga Oasis; decimalLatitude: 25.2500; decimalLongitude: 30.5833; samplingProtocol: Not given; eventDate: 03-13-1932; sex: 2 males; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- h. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Mirsa Matrouh; decimalLatitude: 29.5696; decimalLongitude: 26.4194; samplingProtocol: Not given; eventDate: 05-08-1935; sex: 2 males; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- i. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Ismaila; decimalLatitude: 30.32382; decimalLongitude: 32.3008; samplingProtocol: Not given; eventDate: 04-07-1924; sex: 2 males, 2 females; lifeStage: Adult; recordedBy: Tewfik; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- j. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Ismaila; decimalLatitude: 30.32382; decimalLongitude: 32.3008; samplingProtocol: Not given; eventDate: 10-14-1926; sex: 2 females; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- k. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Ismaila; decimalLatitude: 30.32382; decimalLongitude: 32.3008; samplingProtocol: Not given; eventDate: 10-14-1926; sex: 2 males; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- l. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Dekhela; decimalLatitude: 31.12098; decimalLongitude: 29.8157;

- samplingProtocol: Not given; eventDate: May-April 1923; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- m. scientificName: *Nemotelus dentatus*; taxonID: <https://www.gbif.org/species/1578829>; country: Egypt; locality: Abu-Zaabal; decimalLatitude: 30.24098; decimalLongitude: 31.3521; samplingProtocol: Not given; eventDate: 03-19-1950; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Egypt. [Source: Woodley (2001)]

Local distribution and dates of collection (Fig. 10): EGYPT: Coastal Strip: Alexandria, Dekhela, Mariout, Mersa Matrouh (March to May). Eastern Desert: Ismailia, El-Kantara (April, May & October). Fayoum: Birket Qaroun, El-Athar [(April & May). Lower Nile Valley and Delta: Abu-Zaabal, Damietta, El-Alag to Marg, El-Gabal El-Asfar, Ezbet El-Nakhl, Helwan, Maadi (February to April & November). Western Desert: Kharga Oasis, Wadi El-Natroun (March). [Sources: original description Becker (1902), Lindner (1925), Mohammad et al. (2009) and museum material]

Nemotelus (Nemotelus) marinus Becker, 1902

- GBIF <https://www.gbif.org/species/1578792>

Nomenclature:

Nemotelus marinus Becker, 1902: 9. Type locality: Egypt (Suez, at the seashore).

Materials

- scientificName: *Nemotelus marinus*; taxonID: <https://www.gbif.org/species/1578792>; country: Egypt; locality: Fayed; decimalLatitude: 30.32382; decimalLongitude: 32.3008; samplingProtocol: Not given; eventDate: 09-24-1925; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- scientificName: *Nemotelus marinus*; taxonID: <https://www.gbif.org/species/1578792>; country: Egypt; locality: Wadi Hoff; decimalLatitude: 29.8821; decimalLongitude: 31.311; samplingProtocol: Not given; eventDate: 08-09-1927; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- scientificName: *Nemotelus marinus*; taxonID: <https://www.gbif.org/species/1578792>; country: Egypt; locality: Wadi El-Natroun; decimalLatitude: 30.3814; decimalLongitude: 30.3441; samplingProtocol: Not given; eventDate: 08-06-1929; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Egypt. [Source: original description (Woodley (2001))]

Local distribution and dates of collection (Fig. 11): EGYPT: Eastern Desert: El-Ferdan, Fayed, Ismailia, Suez, Wadi Hoff (April to October). Western Desert: Wadi El

Natroun (August). [Sources: original description (Becker 1902), Mohammad et al. (2009) and museum material]

***Nemotelus (Nemotelus) matrouhensis* Mohammad et al., 2009**

Nomenclature:

Nemotelus matrouhensis Mohammad, Fadl, Gadalla & Badrawy, 2009: 103. Type locality: Egypt (Mersa Matrouh).

Material

Lectotype:

- a. scientificName: *Nemotelus matrouhensis*; country: Egypt; locality: Mersa Matrouh; decimalLatitude: 29.5696; decimalLongitude: 26.4194; samplingProtocol: Not given; eventDate: July & Aug. 1931; sex: male; lifeStage: Adult; recordedBy: H.C.E & M.T.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Egypt. [Source: Woodley (2001)]

Local distribution and dates of collection (Fig. 11): EGYPT: Coastal Strip: Mersa Matrouh (July and August). [Source: original description (Mohammad et al. (2009))]

Notes: Mohammad et al. (2009) published this species and inaccurately cited 13 males and 8 females as "holotype". They didn't explicitly select a single specimen as holotype, so all cited specimens are considered as syntypes and a lectotype should be designated. Because the illustration of the male genitalia was made from an intact specimen and did not show all the important structures, we are providing an illustration of dissected genitalia (Fig. 12) and a habitus photograph of the specimen (Fig. 13). When one of us (MH) requested a specimen, we were told that this would be a paratype, but because the specimen had no identification or type label at all, a red label was generated and attached to this specimen. This label reads: Paratype /*Nemotelus matrouhensis*/det. Haitham Badrawy, 2009. But now it is clear that none of the specimens had identification labels and also that this was not a paratype, but a syntype. The male genitalia resemble *N. crenatus* Egger, 1859 and *N. obscuripes* Loew, 1871. Lectotype designation: A male specimen in EFC is herein designated as lectotype and is labeled: Mersa Matruh, July & Aug. 1931 (leg. H.C.E. & M.T.), with a red lectotype label. Paralectotypes: 12 males and 8 females, same data.

***Nemotelus (Nemotelus) niloticus* Olivier, 1811**

- GBIF <https://www.gbif.org/species/1578794>

Nomenclature:

Nemotelus niloticus Olivier, 1811: 183. Type locality: Egypt.

Nemotelus fasciatus Olivier, 1811: 183. Type locality: Egypt ("bords du Nil & des canaux qui en dérivent"). Preoccupied by *Nemotelus fasciatus* Geoffroy in Fourcroy, 1785.

Nemotelus albifacies Becker, 1902: 9. Type locality: Egypt (Alexandria).

Nemotelus oasis Becker, 1906: 6. Type locality: Algeria (Biskra).

Nemotelus theodori Lindner, 1974: 95. Type locality: Israel (Arava Valley: Hazeva).

Nemotelus duofasciatus Woodley 2001. Replacement name for *N. fasciatus* Olivier, 1811.

Materials

- a. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Fayoum City; decimalLatitude: 29.32061; decimalLongitude: 30.818; samplingProtocol: Not given; eventDate: 05-12-1918; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- b. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Beheira; decimalLatitude: 30.62189; decimalLongitude: 30.48755; samplingProtocol: Not given; eventDate: Apr. 1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- c. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Damietta; decimalLatitude: 31.34595; decimalLongitude: 31.6317; samplingProtocol: Not given; eventDate: 05-11-1918; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- d. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Quisna; decimalLatitude: 30.53514; decimalLongitude: 31.1117; samplingProtocol: Not given; eventDate: Mar. 1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- e. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Mariout; decimalLatitude: 31.0172; decimalLongitude: 29.76; samplingProtocol: Not given; eventDate: 07-09-1927; sex: 1 female; lifeStage: Adult; recordedBy: Tewfik; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- f. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Mariout (Mallaha); decimalLatitude: 31.0172; decimalLongitude: 29.76; samplingProtocol: Not given; eventDate: 06-16-1929; sex: 4 males, 11 females; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- g. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Fayoum City; decimalLatitude: 29.32061; decimalLongitude: 30.818; samplingProtocol: Not given; eventDate: 04-23-1943; sex: 2 males; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- h. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Fayoum City; decimalLatitude: 29.32061; decimalLongitude:

- 30.818; samplingProtocol: Not given; eventDate: 04-20-1945; sex: 2 females; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
- i. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Giza-Fayoum Road; decimalLatitude: 29.5564; decimalLongitude: 30.8869; samplingProtocol: Not given; eventDate: 04-14-1947; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
 - j. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Helwan; decimalLatitude: 29.8500; decimalLongitude: 31.3333; samplingProtocol: Not given; eventDate: 04-08-1934; sex: 1 male; lifeStage: Adult; recordedBy: Farag; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
 - k. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Helwan; decimalLatitude: 29.8500; decimalLongitude: 31.3333; samplingProtocol: Not given; eventDate: 04-14-1934; sex: 1 female; lifeStage: Adult; recordedBy: Farag; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
 - l. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Helwan; decimalLatitude: 29.8500; decimalLongitude: 31.3333; samplingProtocol: Not given; eventDate: 04-24-1934; sex: 1 female; lifeStage: Adult; recordedBy: Farag; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
 - m. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: WadiHoff; decimalLatitude: 29.8821; decimalLongitude: 31.311; samplingProtocol: Not given; eventDate: 04-04-1930; sex: 1 female; lifeStage: Adult; recordedBy: Farag; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
 - n. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Ramleh; decimalLatitude: 31.2279; decimalLongitude: 29.976; samplingProtocol: Not given; eventDate: 09-17-1921; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
 - o. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Dekhela; decimalLatitude: 31.12098; decimalLongitude: 29.8156; samplingProtocol: Not given; eventDate: 06-24-1926; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
 - p. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Dekhela; decimalLatitude: 31.12098; decimalLongitude: 29.8156; samplingProtocol: Not given; eventDate: 06-24-1926; sex: 1 female; lifeStage: Adult; recordedBy: H.C.E & M.T.; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
 - q. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Dekhela; decimalLatitude: 31.12098; decimalLongitude: 29.8156; samplingProtocol: Not given; eventDate: 06-18-1929; sex: 1 male; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; datelIdentified: 2020-2021; institutionCode: EFC
 - r. scientificName: *Nemotelus niloticus*; taxonID: <https://www.gbif.org/species/1578794>; country: Egypt; locality: Ismaila; decimalLatitude: 30.32382; decimalLongitude: 32.3008;

samplingProtocol: Not given; eventDate: 10-14-1926; sex: 1 male; lifeStage: Adult;
 recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified:
 2020-2021; institutionCode: EFC

Distribution: AF: United Arab Emirates. PA: Algeria, Egypt, Israel, Italy (Sardinia), Tunisia. [Sources: Woodley (2001), Mason et al. (2009) and Hauser (2008)]

Local distribution and dates of collection (Fig. 14): EGYPT: Coastal Strip: Alexandria, Dekhela, Mariout (Mallaha), Ramleh (May to September). Eastern Desert: Fayed, Ismailia, Wadi Hoff (April, May & October). Fayoum: Fayoum City, Giza-Fayoum Road (April and May). Lower Nile Valley and Delta: Beheira, Damietta, Helwan, Quisna, Sherbin (March to September). Sinai: Zaranik Protectorate (April). [Sources: Mohammad et al. (2009), original description of *N. albifacies* (Becker 1902) and museum material]

***Nemotelus (Nemotelus) notatus* Zetterstedt, 1842**

- GBIF <https://www.gbif.org/species/1578742>

Nomenclature:

Nemotelus notatus Zetterstedt, 1842: 148. Type locality: Denmark (Copenhagen).

Nemotelus brachystomus Loew, 1846: 443. Type locality: Croatia (as "Dalmatien").

Nemotelus leucorhynchus A. Costa, 1884: 61. Type locality: Italy (Sardinia: Stagno di Calari).

Nemotelus nigroaeneus Verhoeff, 1891: 3. Type locality: Germany (Insel Norderney).

Nemotelus punctiventris Becker, 1902: 8. Type locality: Egypt (Alexandria).

Nemotelus brachystomus form *aegyptiacus* Lindner, 1925: 146. Type locality: Egypt (Alexandria: Nuzha, Cleopatra, Moharrem Bey, and Aboukir).

Nemotelus nigroaeneus ab. *portalis* Szilády, 1932: 33. Type locality: Germany (Borkum).

Nemotelus balearicus Lindner, 1937: 121. Type locality: Spain (Balearic Islands).

Nemotelus zernyi Lindner, 1937: 147. Type locality: Spain (Andalucía: Algeciras).

Materials

- scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>;
 country: Egypt; locality: Tanta; decimalLatitude: 30.75725; decimalLongitude: 30.9898;
 samplingProtocol: Not given; eventDate: 05-11-1918; lifeStage: Adult; recordedBy:
 Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021;
 institutionCode: ESEC
- scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>;
 country: Egypt; locality: Khusus; decimalLatitude: 30.15957; decimalLongitude: 31.3125;
 samplingProtocol: Not given; eventDate: Apr.1918; lifeStage: Adult; recordedBy:
 Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021;
 institutionCode: ESEC

- c. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Alag; decimalLatitude: 30.18009; decimalLongitude: 31.3521; samplingProtocol: Not given; eventDate: Nov. 1924; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- d. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Marg; decimalLatitude: 31.0667; decimalLongitude: 30.2167; samplingProtocol: Not given; eventDate: Mar. 1918; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- e. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: El-Mahareeq (Kharga); decimalLatitude: 25.618206; decimalLongitude: 30.6468; samplingProtocol: Not given; eventDate: Feb. 1914; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- f. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Beni Sweif; decimalLatitude: 29.07788; decimalLongitude: 31.10713; samplingProtocol: Not given; eventDate: 02-14-1914; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- g. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Kharga Oasis; decimalLatitude: 25.25; decimalLongitude: 30.5833; samplingProtocol: Not given; eventDate: Feb. 1914; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- h. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Kharga Oasis; decimalLatitude: 25.25; decimalLongitude: 30.5833; samplingProtocol: Not given; eventDate: 03-10-1924; lifeStage: Adult; recordedBy: Priesner; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: ESEC
- i. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Cleopatra; decimalLatitude: 31.22021; decimalLongitude: 29.9348; samplingProtocol: Not given; eventDate: 07-12-1921; sex: 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- j. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Dekhela; decimalLatitude: 31.12098; decimalLongitude: 29.8156; samplingProtocol: Not given; eventDate: 06-24-1926; sex: 1 male; lifeStage: Adult; recordedBy: H.C.E & M.T.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- k. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Dekhela; decimalLatitude: 31.12098; decimalLongitude: 29.8156; samplingProtocol: Not given; eventDate: 05-24-1925; sex: 3 males, 5 females; lifeStage: Adult; recordedBy: H.C.E & M.T.; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- l. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Dekhela; decimalLatitude: 31.12098; decimalLongitude: 29.8156; samplingProtocol: Not given; eventDate: 07-09-1927; sex: 1 male, 1 female; lifeStage: Adult; recordedBy: Efflatoun; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

- m. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Fayed; decimalLatitude: 30.32382; decimalLongitude: 32.3008; samplingProtocol: Not given; eventDate: 07-24-1924; sex: 1 female; lifeStage: Adult; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- n. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Helwan; decimalLatitude: 29.8500; decimalLongitude: 31.3333; samplingProtocol: Not given; eventDate: 04-08-1934; sex: ?; lifeStage: Adult; recordedBy: Farag; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC
- o. scientificName: *Nemotelus notatus*; taxonID: <https://www.gbif.org/species/1578742>; country: Egypt; locality: Wadi Hoff; decimalLatitude: 29.8821; decimalLongitude: 31.311; samplingProtocol: Not given; eventDate: 06-09-1927; sex: ?; lifeStage: Adult; recordedBy: Tewfik; identifiedBy: M. El-Hawagry & M. Hauser; dateIdentified: 2020-2021; institutionCode: EFC

Distribution: PA: Albania, Austria, Azerbaijan, Belgium, Bulgaria, Croatia, Cyprus, Denmark, Egypt, England, Finland, France, Germany, Greece, Hungary, Iran, Ireland, Israel, Italy including Sardinia, Netherlands, Norway, Poland, Roumania, Russia, Spain, Sweden, Turkey, former Yugoslavia. [Sources: Woodley (2001), Üstüner and Hasbenli (2005), Mason et al. (2009) and Khaghaninia et al. (2015)]

Local distribution and dates of collection (Fig. 14): EGYPT: Coastal Strip: Abu-Kir, Cleopatra, Dekhela, Mariout, Moharram Bey, Nubar Bey, Nuzha, Ramleh (April to September). Eastern Desert: Ismailia, Wadi Hoff (May to July). Lower Nile Valley and Delta: Beni Sweif, Damietta, El-Alag, Helwan, El-Marg, Khusous, Tanta (February to May and November). Sinai: Zaranik Protectorate (April). Western Desert: Kharga Oasis (February and March). [Sources: original description of *N. b. aegyptiacus* (Lindner 1925), Mohammad et al. (2009) and museum material]

Acknowledgements

The authors extend their appreciation to the Deanship of Scientific Research at King Saud University for funding this work through research group No [RG-1437-009].

We are grateful to Dr Neal Evenhuis, Bishop Museum, Honolulu, Hawaii, USA and Dr Mohammed Gamal El-Den Nasser, Entomology Department, Faculty of Science, Ain Shams University, Cairo, Egypt for providing critical assistance throughout this study. We thank Haitham Badrawy for the loan of a *Nemotelus matrouhensis* specimen. We are also grateful to the research team in KSMA for collecting, mounting and photographing specimens.

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Figure 1.
A satellite map of Egypt and Saudi Arabia.

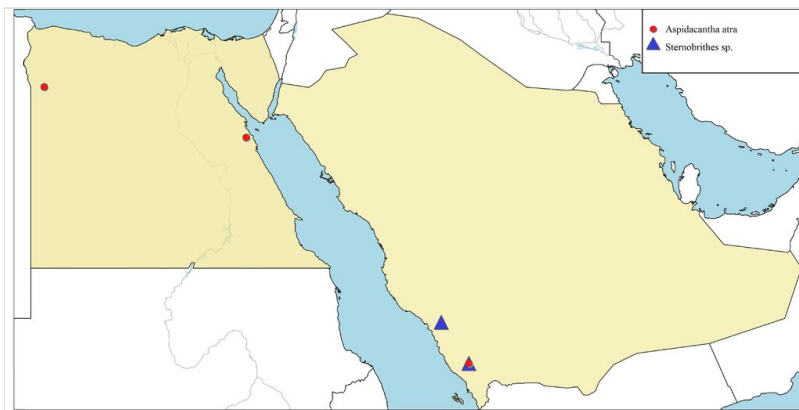


Figure 2.

Distribution map of *Aspidacantha atra* Kertész and *Sternobrithes* sp.

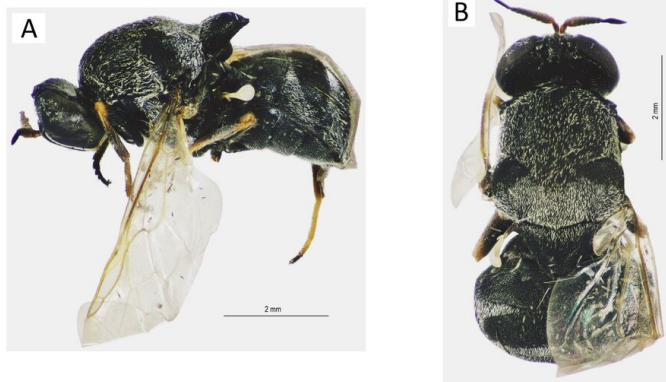


Figure 3.

Sternobrithes sp.: **A** female habitus, lateral **B** same, dorsal.

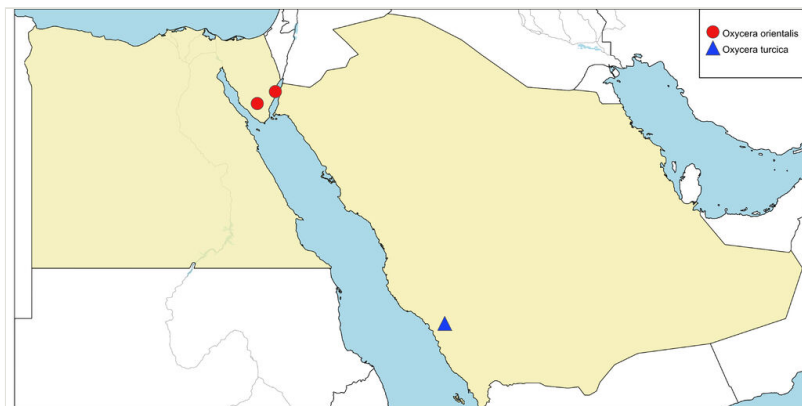


Figure 4.

Distribution map of *Oxycera orientalis* (Lindner) and *Oxycera turcica* Üstüner & Hasbenli.

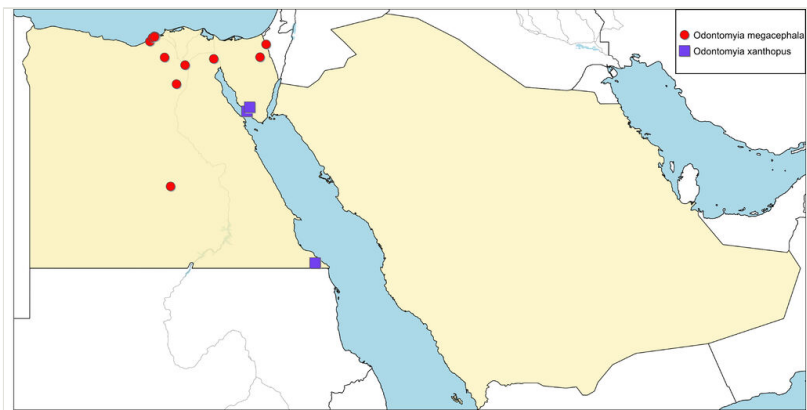


Figure 5.
Distribution map of *Odontomyia megacephala* Olivier and *Odontomyia xanthopus* Bezzi.

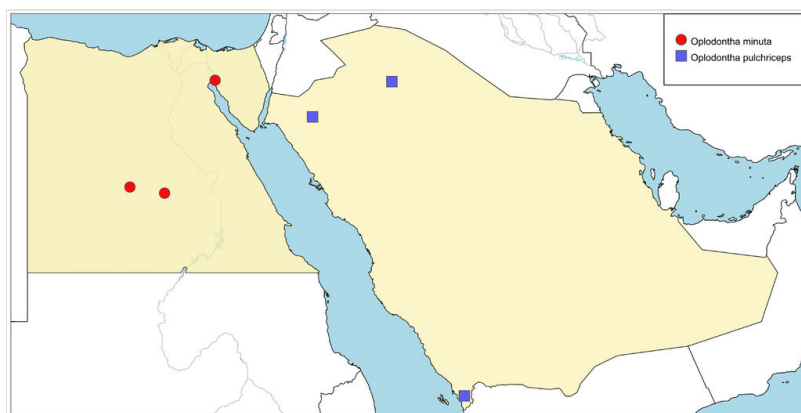


Figure 6.
Distribution map of *Oplodontha minuta* Fabricius and *Oplodontha pulchriceps* Loew.

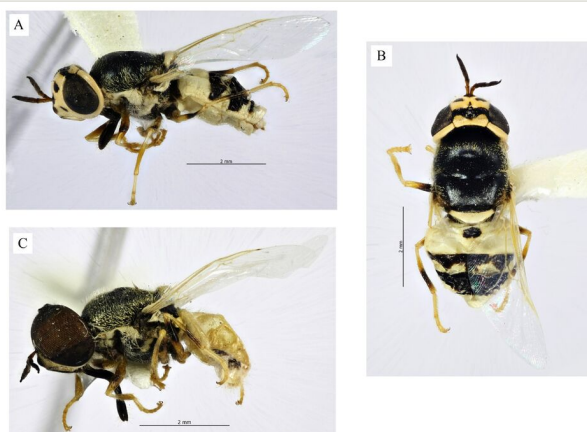


Figure 7.

Oplodontha pulchriceps Loew: **A** female habitus, lateral **B** same, dorsal **C** male habitus, lateral.

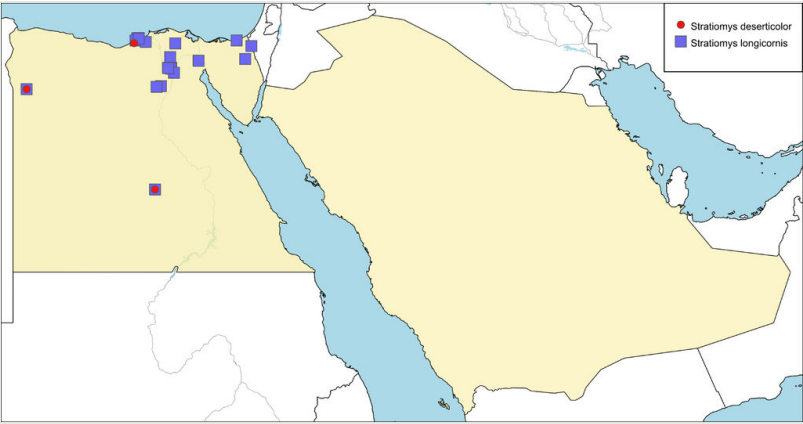


Figure 8.
Distribution map of *Stratiomys deserticolor* Lindner and *Stratiomys longicornis* (Scopoli).



Figure 9.

Distribution map of *Stratiomys singularior* (Harris) and *Nemotelus anchora* Loew.

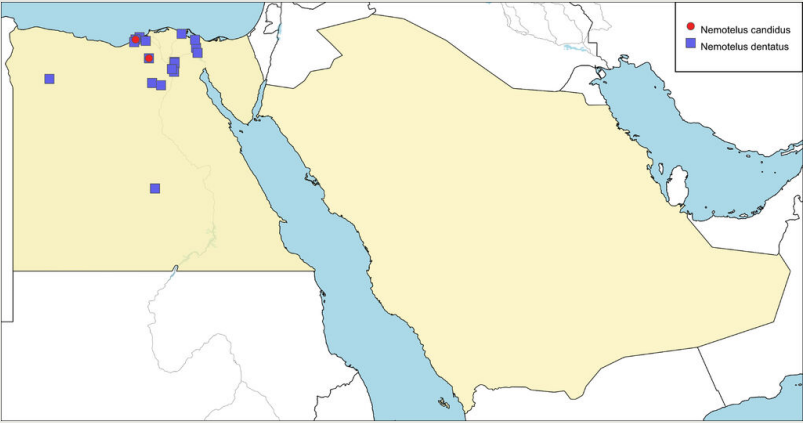


Figure 10.
Distribution map of *Nemotelus candidus* Becker and *Nemotelus dentatus* Becker.

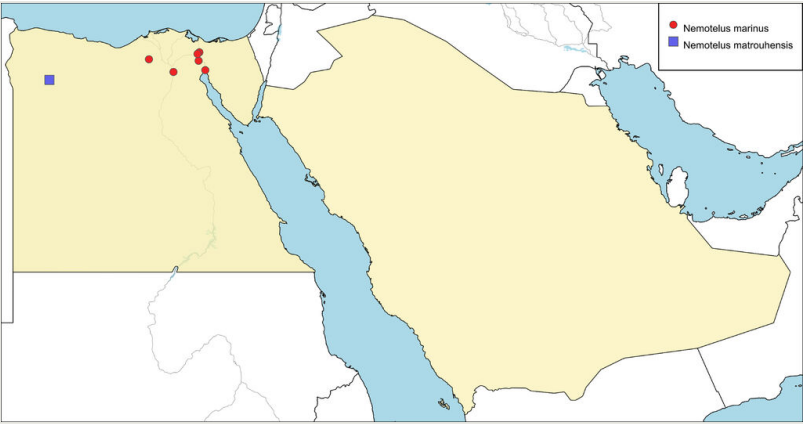


Figure 11.
Distribution map of *Nemotelus marinus* Becker and *Nemotelus matrouhensis* Mohammad et al.

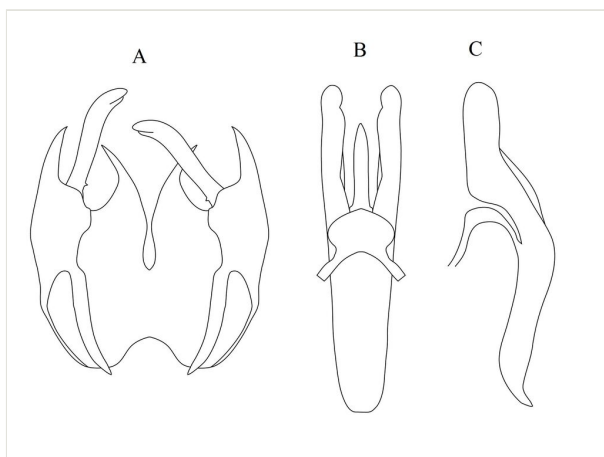
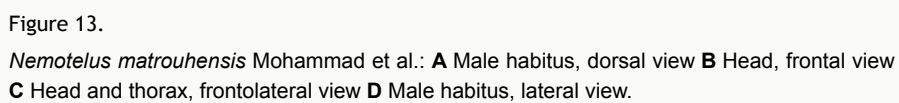


Figure 12.

Nemotelus matrouhensis Mohammad et al.: **A** Male terminalia, dorsal view **B** Phallic complex, dorsal view **C** same, lateral view.



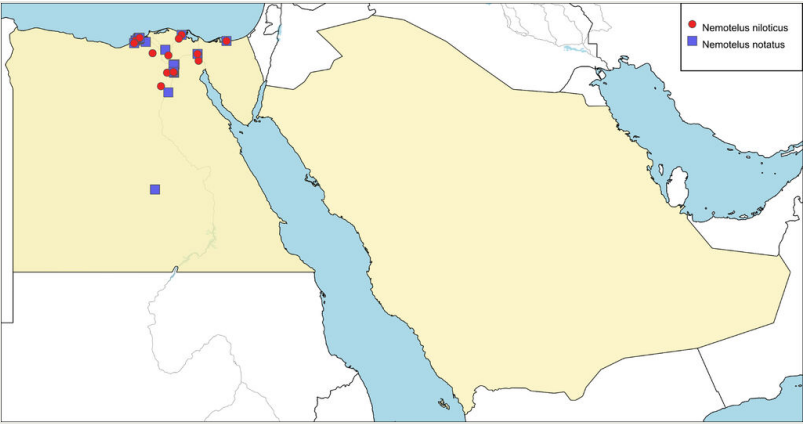


Figure 14.
Distribution map of *Nemotelus niloticus* Olivier and *Nemotelus notatus* Zetterstedt.

Table 1.

A gazetteer of Egyptian and Saudi Arabian localities of the family Stratiomyidae.

Country	Locality	Governorate	Ecological zone or Region	Latitude (N)	Longitude (E)
Egypt	Abu-Kir	Alexandria	Coastal Strip	31.22429	33.8256
	Abu-Rawash	Giza	Lower Nile Valley & Delta	30.0438	42.4101
	Abu-Zaabal	Al-Qalyubia	Lower Nile Valley & Delta	30.24098	42.4089
	Alexandria	Alexandria	Coastal Strip	31.2129	42.4089
	Behaira	Behaira	Lower Nile Valley & Delta	30.62189	42.4102
	Benha	Al-Qalyubia	Lower Nile Valley & Delta	30.46572	42.4089
	Beni Sweif	Beni Sweif	Lower Nile Valley & Delta	29.07788	42.4089
	Birket Qaroun	Fayoum	Fayoum	29.40879	42.4124
	Cleopatra	Alexandria	Coastal Strip	31.22022	42.4101
	Dakhla Oasis	New Valley	Western Desert	25.5000	41.3115
	Damietta	Damietta	Lower Nile Valley & Delta	31.34595	41.3115
	Dekhela	Alexandria	Coastal Strip	31.12098	41.3101
	Ein Moussa	South Sinai	Sinai	29.8667	41.3101
	El-Alag	Al-Qalyubia	Lower Nile Valley & Delta	30.18009	42.8348
	El-Arish	North Sinai	Sinai	31.1244	39.8749
	El-Baragil	Giza	Lower Nile Valley & Delta	30.07673	41.4107
	El-Ferdan	Ismailia	Eastern Desert	30.65760	36.6297
	El-Gebel El-Asfar	Al-Qalyubia	Lower Nile Valley & Delta	29.1689	34.1412
	El-Kantara	Ismailia	Eastern Desert	30.79392	34.3836
	El-Marg	Al-Qalyubia	Lower Nile Valley & Delta	31.0667	30.5833
	El-Siala	Alexandria	Coastal Strip	31.20849	30.8180
	El-Tour	South Sinai	Sinai	28.24024	29.1667
	Ezbet El-Nakhl	Al-Qalyubia	Lower Nile Valley & Delta	31.1111	32.6500
	Fayed	Ismailia	Eastern Desert	30.32382	29.8805
	Fayoum	Fayoum	Fayoum	29.32061	32.3008
	Gebel Elba	Red Sea	Gebel Elba	22.2008	30.2167

Gezeira	Cairo	Lower Nile Valley & Delta	30.04596	34.3836
Girza	Fayoum	Fayoum	29.49968	34.1412
Giza	Giza	Lower Nile Valley & Delta	30.01350	31.3333
Giza-Fayoum Road	Giza	Western Desert	29.85176	31.18121
Helwan	Cairo	Lower Nile Valley & Delta	29.8500	31.22435
Hurghada	Red Sea	Eastern Desert	27.2337	30.5833
Ismailia	Ismailia	Eastern Desert	30.59428	30.8180
Kerdassa	Giza	Lower Nile Valley & Delta	30.0297	30.48755
Kharga Oasis	New Valley	Western Desert	25.2500	31.6317
Khosous	Cairo	Lower Nile Valley & Delta	30.15957	31.1117
Kosseimah	North Sinai	Sinai	30.90307	30.9898
Maadi	Cairo	Lower Nile Valley & Delta	29.95772	31.3125
Mariout	Alexandria	Coastal Strip	31.0172	31.3531
Max	Alexandria	Coastal Strip	31.1636	30.2167
Mersa Matrouh	Matrouh	Coastal Strip	29.5696	30.6468
Moharram Bey	Alexandria	Coastal Strip	31.17796	31.10713
Moweileh	South Sinai	Sinai	30.3924	30.5833
Nazla	Fayoum	Fayoum	29.29792	30.5833
Nubar Bey	Alexandria	Coastal Strip	31.18079	31.2505
Nuzha (Alex.)	Alexandria	Coastal Strip	31.2001	31.3333
Qisna	Menofiya	Lower Nile Valley & Delta	30.53514	31.3333
Ramleh	Alexandria	Coastal Strip	31.2279	30.8180
Sandoub	Dakahlyia	Lower Nile Valley & Delta	31.00782	30.2167
Sherbin	Dakahlyia	Lower Nile Valley & Delta	31.19461	31.3333
Shubra	Al-Qalyoubia	Lower Nile Valley & Delta	30.1012	30.5833
Siwa Oasis	Matrouh	Western Desert	29.20427	26.4194
Suez	Suez	Eastern Desert	29.95278	32.3008
Tanta	Gharbia	Lower Nile Valley & Delta	30.75725	32.3008
Wadi El-Lega	South Sinai	Sinai	28.5469	32.3008
Wadi El-Natroun	Behaira	Western Desert	30.3814	29.8157

Saudi Arabia	Wadi Hebran	South Sinai	Sinai	28.40225	31.3521
	Wadi Hoff	Cairo	Eastern Desert	29.8821	32.3008
	Wadi Watir	South Sinai	Sinai	29.02147	31.3110
	Zaranik	North Sinai	Sinai	31.10345	30.3441
	Al-Mekhwa	Al-Mekhwa	Al-Baha	19.798133	30.3441
	Dawmat Al-Jandal	Dawmat Al-Gandal	Al-Jwaf	29.809552	30.8180
	Hassan Ameen farm	Tabouk	Tabouk	28.36661	26.4194
	Jabal Shada al-A'la Nature Reserve	Al-Mekhwa	Al-Baha	19.8429	29.7600
	Jazan	Jazan	Jazan	16.9595	29.7600
	Raydah Nature Reserve	Abha	Asir	18.20525	30.8180