

Lepidoptera of Egypt Part III: Revision of Family Sphingidae (Bombycoidea)

Abdelfattah Mabrouk Amer Salem^{1,2}

¹Inter African Phytosanitary Council, African Union, Yaounde, Cameroon

²Faculty of Science, Department of Entomology, Cairo University, Giza, Egypt

Email address:

abdelfattahsalem@ymail.com

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Abstract: Sphingidae, Hawk moths, sphinx moths, bee moths or hummingbird moths; are belonging to the Superfamily Bombycoidea, with about 1400 species recorded around worldwide. It is best represented in the tropics, but species are found in every region. They are moderate to large in size and are distinguished among moths for their agile and sustained flying ability, similar enough to that of hummingbirds as to be reliably mistaken for them. Their narrow wings and streamlined abdomens are adaptations for rapid flight. In Egypt, there is no revision since 2005, the 1st study done in 1985 and during ~~last~~ this study the family Sphingidae classified under superfamily Sphingoidea, during this study seven species under seven genera were recorded. Then, in 2005 Sphingidae was revised again and nine species under seven genera were recorded. Meanwhile during this study after the complete revision for this family was done and Sphingidae was transferred from superfamily Sphingoidea into superfamily Bombysoidea. Up to date in Egypt Sphingidae is not rich family of Lepidoptera, it is only present with 12 species belonging to 7 Genera under 2 subfamilies. 1st Subfamily (Sphinginae) represented by 3 species under 2 genera only; while the 2nd subfamily (Macroglossinae) represented by 9 species under 5 genera. The rich genus is *Hyles* and represented by 4 species. *Acherontia styx* (Westwood, 1848) is recorded as new record to the Egyptian fauna.

Keywords: Lepidoptera, Bombycoidea, Sphingidae, Sphinginae, Macroglossinae, Egypt

1. Introduction

The Sphingidae or Hawk moths, family Sphingidae (also called sphinx moths, bee moths and hummingbird moths) moth belong to the Superfamily Bombycoidea, about 1400 species are recorded around worldwide [10, 20]. Tropical regions of the New World, Africa and Asia have the most biodiversity. There are three subfamilies: Smerinthinae, Sphinginae, and Macroglossinae (sometimes only two subfamilies are used). [5, 22] The family comprises the monobasic superfamily Sphingoidea, in the section Cossina, subsection Bombycina, of the division Ditrysia. Adults medium size to very large (23 to 200 mm wingspan), with head vertex scaling mostly normal but sometimes roughened; haustellum usually very long, to 30 cm (rarely vestigial); labial palpi mostly upcurved (sometimes porrect), with small third segment; maxillary palpi small; antennae mostly clavate or lamellate and thickened; body very robust (sometimes with longer hair-like setae); some genera with long needle-

like spines on hind tibiae (e.g., *Oxyambulyx* species from Southeast Asia). Wings elongated and usually with acute apex; hindwings usually elongated but basally rounded, and much smaller than forewings. Maculation varied but many with shades of brown and gray, often with few markings, but also very colorful species; some with hyaline wings and mimicking wasps. Adults nocturnal or crepuscular but some a diurnal. [13, 18] Larvae are leaf feeders, usually with a posterior tail-like scoli; many larvae extremely large. Host plants recorded in numerous plant families. A few are economic. Among the largest species in the family are females of *Clanis titan* Rothschild & Jordan, of Southeast Asia, and *Coequosa triangularis* Donovan, of Australia, both also with massive bodies, while the smallest is *Sphingonaepiopsis obscurus* Mabille, from Madagascar [5].

2. Materials and Methods

The data presented is collected from collected specimens, insect collections [The main five reference insect collections in Egypt: Collection of Ministry of Agriculture, Plant Protection Research Institute (PPRI); Collection of Faculty of Science, Cairo University (CUC); Collection of Faculty of Science, Ein Shams University (ESUC); Collection of El Alfieri, Al Azhar University, Faculty of Agriculture (ALUC) and Collection of Egyptian Entomological Society (EESC)], Natural museums [Data from the Collections of International Museums (BMNH, London; USNM, Smithsonian, USA; ZI, Leningrad; MNHU, Berlin; MNHN, Paris,...etc.)], published papers and thesis in Egypt and all published checklists and monographs of Lepidoptera concerning the Egyptian fauna. Larval host-plants are taken from the literature, collections (data under each specimen) and during collecting specimens. The Geographic names of sites are according to official maps. More The nomenclature of all systematic categories is based on the new classification.

The collected specimens covered most Egyptian regions. Dry mounts of some specimens representing each species were pinned to help in the identification.

3. Results

The hawk moths of Egypt has been extensively studied. In this study all species known from Egypt up to date were listed. A total of 765 specimens of hawk moths from different Egyptian localities were examined during this study. All references and species data saved in different international museums also collected. The new list of complete update taxonomic data was identified and allocated as follows:

List of Sphingidae in Egypt

Family Sphingidae Latreille, [1802]

Subfamily: Sphinginae Latreille [1802]

Tribe: Acherontiini Boisduval, 1875

1. *Acherontia* Laspeyres, 1809

1. *Acherontia atropos* (Linnaeus, 1758)

2. *Acherontia styx* (Westwood, 1848)

2. *Agrius* Hübner, [1819]

2. *Agrius convolvuli* (Linnaeus, 1758)

Subfamily: Macroglossinae Harris, 1839

Tribe: Macroglossini Harris, 1839

Subtribe1: Macroglossina Harris, 1839

3. *Daphnis* Hübner, [1819]

4. *Daphnis nerii* (Linnaeus, 1758)

4. *Macroglossum* Scopoli, 1777

5. *Macroglossum stellatarum* (Linnaeus, 1758)

Subtribe2: Choerocampina Grote & Robinson, 1865

5. *Hyles* Hübner, [1819]

6. *Hyles euphorbiae* (Linnaeus, 1758)

7. *Hyles lineata* (Fabricius, 1775)

8. *Hyles livornica* (Esper, 1780)

9. *Hyles tithymali deserticola* (Staudinger, 1901)

6. *Hippotion* Hübner, [1819]

10. *Hippotion celerio* (Linnaeus, 1758)

7. *Theretra* Hübner, [1819]

11. *Theretra alecto cretica* (Boisduval, 1827)

12. *Theretra oldenlandiae* (Fabricius, 1775)

Subfamily: Sphinginae Latreille [1802]

Tribe: Acherontiini Boisduval, 1875

1. *Acherontia* Laspeyres, 1809

1. *Acherontia atropos* (Linnaeus, 1758) [1-4, 6, 9, 14-17, 21, 22, 24-26, 28]

Acherontia solani Oken, 1815

Acherontia sculda Kirby, 1877

Acherontia atropos conjuncta Tutt, 1904

Acherontia atropos extensa Tutt, 1904

Acherontia atropos flavescens Tutt, 1904

Acherontia atropos imperfecta Tutt, 1904

Acherontia atropos intermedia Tutt, 1904

Acherontia atropos obsoleta Tutt, 1904

Acherontia atropos suffusa Tutt, 1904

Acherontia atropos variegata Tutt, 1904

Acherontia atropos virgata Tutt, 1904

Acherontia atropos violacea Lambillion, 1905

Acherontia atropos charon Closs, 1910

Acherontia atropos diluta Closs, 1911

Acherontia atropos obscurata Closs, 1917

Acherontia atropos myosotis Schawerda, 1919

Acherontia atropos confluent Dannehl, 1925

Acherontia atropos moira Dannehl, 1925

Acherontia atropos pulverata Cockayne, 1953

Acherontia atropos radiata Cockayne, 1953

Acherontia atropos griseofasciata Lempke, 1959

Type species: *Sphinx atropos* Linnaeus, 1758

Common name: death's head hawk moth.

Wingspan: 90-120 mm.

Host records: Potatoes, aubergines, tomatoes, *Capsicum*, tobacco, *Solanum* sp., *Datura*, olives, also wild Solanaceae, *Lantana camara*.

Geographical records: Algeria, Angola, Austria, Belgium, Benin, Botswana, Bulgaria, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Comoros, Congo, DR Congo, Cote D'Ivoire, Djibouti, England, Equatorial Guinea, Eritrea, Ethiopia, France, Gabon, Gambia, Germany, Ghana, Greece, Guinea, Iceland, Iran, Iraq, Israel, Italy, Ireland, Jordan, Kenya, Kuwait, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Norway, Oman, Palestine, Portugal, Rwanda, Russia, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Somalia, Saudi Arabia, South Africa, Spain, Sudan, São Tome & Principe, Sweden, Switzerland, Syria, Tanzania, Tunisia, Turkey, Uganda, Ukraine, Yemen, Zambia, Zimbabwe [32].

Distribution in Egypt: Coastal Strip, Lower Egypt, Upper Egypt, Eastern Desert, Sinai, Gebel Elba, Fayoum.

Type locality: Europe.

2. *Acherontia styx* (Westwood, 1848) (new record in Egypt)

Sphinx styx Westwood, 1847 TL. East Indies.

Acherontia ariel Boisduval, 1875

Acherontia pseudatropos Röber, 1933

Acherontia styx interrupta Closs, 1911

Acherontia styx obsoleta Schmidt, 1914

Acherontia styx crathis Rothschild & Jordan, 1903

Acherontia styx septentrionalis-chinensis Pavlov, 1932

Type species: *Sphinx styx* Westwood, 1848

Common name: Small death's head hawk moth, Lesser death's head hawk moth, Eastern death's head hawk moth.

Wingspan: 80-120 mm.

Host records: Potatoes, aubergines, tomatoes, *Capsicum*, tobacco, *Solanum* sp., *Datura* sp., olives, *Nicotiana*, *Physaliastrum*, *Solanum*, [31, 33].

Geographical records: China, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, South Korea, Syria, Thailand, Turkey, United Arab Emirates.

Distribution in Egypt: Lower Egypt

Type locality: East Indies

2. *Agrius* Hübner, [1819]

3. *Agrius convolvuli* (Linnaeus, 1758) [1-4, 6, 15-17, 21-25, 28]

Sphinx convolvuli Linnaeus 1758

Sphinx abadonna Fabricius, 1798

Sphinx patatas Ménétériés, 1857

Sphinx roseafasciata Koch, 1865

Sphinx pseudoconvolvuli Schaufuss, 1870

Protoparce distans Butler, 1876

Protoparce orientalis Butler, 1876

Agrius batatae (Christ, 1882)

Agrius alicia (Neuberger, 1899)

Agrius nigricans (Cannaviello, 1900)

Agrius convolvuli fuscognata Tutt, 1904

Agrius convolvuli grisea Tutt, 1904.

Agrius convolvuli ichangensis Tutt, 1904

Agrius convolvuli intermedia Tutt, 1904

Agrius convolvuli javanensis Tutt, 1904

Agrius convolvuli major Tutt, 1904

Agrius convolvuli minor Tutt, 1904

Agrius convolvuli obscura Tutt, 1904

Agrius convolvuli suffusa Tutt, 1904

Agrius convolvuli tahitiensis Tutt, 1904

Agrius convolvuli unicolor Tutt, 1904

Agrius convolvuli variegata Tutt, 1904

Agrius virgata Tutt, 1904

Protoparce convolvuli fasciata Pillich, 1909

Protoparce convolvuli indica Skell, 1913

Agrius marshallensis (Clark, 1922)

Herse convolvuli peitaihoensis Clark, 1922, TL: China (N): [Shandong.] Pei-tai-ho [Beidaihe]

Agrius convolvuli aksuensis O. Bang-Haas, 1927

Herse convolvuli extincta Gehlen, 1928

Herse convolvuli posticoconflua Bryk, 1946

Type species: *Sphinx convolvuli* Linnaeus, 1758

Common name: Sweet Potato moth.

Wingspan: 85-130 mm.

Host records: *Merremia umbellata*, *Convolvulus arvensis*, *Convolvulus sepium*, *Convolvulus tricolor*, *Convolvulus major*, *Impatiens nolitangere*, *Lactuca sativa*, *Tabebuia*

pallida, *Ipomoea batatas*, *Urena lobata*.

Geographical Records: Algeria, Angola, Australia, Austria, Belgium, Botswana, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Comoros, Congo, DR Congo, Cote D'Ivoire, Czech Republic, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, France, Gabon, Gambia, Germany, Ghana, Greece, Guinea-Bissau, Hungary, India, Ireland, Iran, Iraq, Italy, Israel, Japan, Jordan, Kenya, Libya, Madagascar, Malawi, Mali, Mauritius, Morocco, Namibia, Nigeria, Norway, Oman, Palestine, Poland, Réunion, Rwanda, Saudi Arabia, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, São Tome & Príncipe, Sweden, Switzerland, Tanzania, Tunisia, Uganda, United Arab Emirates, Yemen, Zambia, Zimbabwe [30, 32].

Distribution in Egypt: Lower Egypt, Upper Egypt, Sinai, Fayoum.

Type locality: Europe

Subfamily: Macroglossinae

Tribe: Macroglossini

Subtribe1: Macroglossina Harris, 1839

3. *Daphnis* Hübner, [1819]

4. *Daphnis nerii* (Linnaeus, 1758) [1-4, 6, 15-17, 22, 24, 27]

Sphinx nerii Linnaeus 1758

Daphnis nerii infernelutea Saalmüller, 1884

Daphnis nerii confluens Closs, 1912

Daphnis nigra Schmidt, 1914

Daphnis nerii nigra Schmidt, 1914

Deilephila nerii bipartita Gehlen, 1934

Type species *Sphinx nerii* Linnaeus, 1758

Common name: Oleander Hawk Moth

Wingspan: 90-120 mm.

Host records: *Nerium oleander*, *Vinca* sp., *Gradenia* sp., *Picrolema kleiniana*, cocoa, *Cinchona*, *Carissa* sp., *Adenium obesum*, *Rauwolfia caffra*, *Mitragyna stipulosa*, *Apodytes dimidiata*, *Bambusa*, *Burttavya nyasica*, *Clarantherus roseus*, *Mangifera indica*, *Picalima nitida*, *Tabernaemontana divaricata*, *Thevetia peruviana*, *Voacanga thouarsii*.

Geographical Records: Afghanistan, Algeria, Angola, Austria, Belgium, Bulgaria, Burkina Faso, Cameroon, Cape Verde, Central African Republic, China, Comoros, Congo, DR Congo, Cote D'Ivoire, Crete, Croatia, Cyprus, England, Equatorial Guinea, Ethiopia, Finland, France, Gabon, Gambia, Germany, Ghana, Greece, Guinea Bissau, Hungary, India, Iran, Iraq, Ireland, Israel, Italy, Jordan, Kenya, Lesotho, Libya, Madagascar, Malawi, Mali, Malta, Mauritius, Morocco, Nigeria, Norway, Oman, Pakistan, Palestine, Poland, Saudi Arabia, Seychelles, Sierra Leone, South Africa, Spain, Sudan, Syria, Sweden, Saudi Arabia, Sao Tome and Principe, Tanzania, Thailand, Tunisia, Turkey, Uganda, United Arab Emirates, Vietnam, Yemen, Zambia, Zimbabwe [30, 32].

Distribution in Egypt: Coastal Strip, Lower Egypt, Upper Egypt, Sinai, Fayoum.

Type locality: Europe

4. *Macroglossum* Scopoli, 1777

5. *Macroglossum stellatarum* (Linnaeus, 1758) [1-4, 6-8, 12, 17, 22]

Sphinx stellatarum Linnaeus, 1758, TL: Europe

Sphinx flavida Retzius, 1783

Macroglossa nigra Cosmovici, 1892

Macroglossum stellatarum subnubila Schultz, 1904

Macroglossum stellatarum fasciata Rebel, 1910

Macroglossum stellatarum convergens Constantini, 1916

Macroglossum stellatarum approximata (Lempke, 1959)

Macroglossum stellatarum clausa (Lempke, 1959)

Macroglossum stellatarum candidum Eitschberger, 1971

Macroglossum stellatarum minor (Vilarrubia, 1974)

Type Species: *Sphinx stellatarum* Linnaeus, 1758

Common name: Hummingbird hawkmoth.

Wingspan: 40--45mm.

Host records: *Galium* spp., *Rubia* spp., *Epilobium*, *Centranthus*, *Stellaria* and other Rubiaceae.

Geographical Records: Algeria, Austria, Belgium, Denmark, Finland, France, Gambia, Germany, Greece, India, Iran, Iraq, Israel, Italy, Japan, Jordan, Korea, Mali, Morocco, Netherlands, Oman, Palestine, Poland, Russia, Saudi Arabia, Spain, Switzerland, United Arab Emirates, Yemen.

Distribution in Egypt: Coastal Strip, Lower Egypt, Upper Egypt, Western Desert, Sinai, Fayoum.

Type locality: Europe

Subtribe2: Choerocampina Grote & Robinson, 1865

5. *Hyles* Hübner, [1819]

6. *Hyles euphorbiae* (Linnaeus, 1758) [1, 13, 28]

Sphinx euphorbiae Linnaeus, 1758

Sphinx esulae Hüfnagel, 1766

Deilephila esulae Boisduval, 1834

Deilephila paralias Nickerl, 1837

Deilephila euphorbiae grentzenbergi Staudinger

Celerio euphorbiae vandalousica Ribbe, 1910

Celerio euphorbiae etrusca Verity, 1911

Celerio euphorbiae strasillai Stauder, 1921

Celerio euphorbiae rothschildi Stauder, 1928

Celerio euphorbiae subiacensis Dannehl, 1929

Celerio euphorbiae dolomiticola Stauder, 1930

Celerio euphorbiae filapjewi O. Bang-Haas, 1936

Hyles euphorbiae lucida Derzhavets, 1980

Common name: Spurge hawk moth

Wingspan: 55-75 mm.

Host records: Herbaceous species of *Euphorbia*, *Rumex*, *Polygonum*, *Vitis*, *Mercurialis*, *Polygonum aviculare*.

Geographical Records: Afghanistan, Algeria, Armenia, Austria, Canada, Cape Verde, China, Czech Republic, England, France, Germany, Greece, India, Italy, Japan, Pakistan, Poland, Romania, Saudi Arabia, Spain, Sweden, Switzerland, Tunisia, Turkey, United Arab Emirate, Yemen.

Distribution in Egypt: Coastal Stripe, Lower Egypt, Upper Egypt, Western Desert, Sinai, Gebel Elba.

Type Locality: France.

7. *Hyles lineata* (Fabricius, 1775) [1, 2, 6, 7, 17, 25, 27]

Celerio lineata Fabricius, 1758; TL. America

Sphinx daucus Cramer, [1777]; TL. Jamaica

Deilephila lineata Godman & Salvin, 1881

Hyles lineatoides (Gehlen, 1934)

Hyles florilega (Kernbach, 1962)

Type species: *Celerio lineata* Fabricius, 1758

Common name: White-lined sphinx.

Wingspan: 75-90 mm.

Host records: Grapes, cotton, olives, sweet potatoes and various other field crops.

Geographical Records: Algeria, Argentina, Austria, Canada, England, Germany, Jamaica, Peru, Spain, Tunisia, USA.

Distribution in Egypt: Coastal Strip, Lower Egypt, Upper Egypt, Eastern Desert, Western Desert, Sinai, Gebel Elba, Fayoum.

Type Locality: America.

8. *Hyles livornica* (Esper, 1780) [1-4, 7, 12-16, 21, 22, 25-28].

Sphinx livornica Esper, 1780; TL. Germany

Sphinx livornica Esper, 1780; TL. Italy, Livorno

Celerio tatsienluica Oberthür, 1916

Hyles renneri Eitschberger, Danner & Surholt, 1998

Phinx koechlini Fuessly, 1781

Celerio lineata obscurata Niepelt, 1922

Celerio lineata saharae Gehlen, 1932

Celerio livornica perlimbata Abbayes, 1932

Celerio lineata malgassica Denso, 1944

Type Species: *Sphinx livornica* Esper, 1780

Common name: Striped hawk moth, Old World lined sphinx.

Wingspan: 60-85mm.

Host records: *Rumex* spp., *Polygonum* spp., *Asphodelus* spp., *Vitis* spp., *Fuchsia* spp., *Galium* spp., *Zygophyllum fabago*, *Pelargonium* spp., *Asparagus* spp., strawberries, *Acacia* spp., *Boerhavia elegans*, *Bulbine asphodeloides*, *Aloe striata*, *Antirrhinum* spp., *Rhazya stricta*, *Eremurus*, *Fragaria* spp., *Oldenlandia* spp., *Plantago* spp., *Valeriana* spp., *Prunus* spp.

Geographical Records: Algeria, Angola, Austria, Botswana, Bulgaria, Burkina Faso, Cameroon, Cape Verde, China, Comoros, Eritrea, Ethiopia, France, Gabon, Gambia, Germany, Greece, Guinea, India, Iran, Iraq, Italy, Japan, Jordan, Kenya, Lesotho, Libya, Madagascar, Mali, Morocco, Namibia, Nigeria, Norway, Oman, Pakistan, Palestine, Rwanda, Saudi Arabia, Somalia, Spain, South Africa, Sudan, Sweden, Switzerland, Tanzania, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, Western Sahara, Yemen, Zimbabwe [32].

Distribution in Egypt: Coastal Strip, Lower Egypt, Upper Egypt, Eastern Desert, Western Desert, Sinai, Gebel Elba, Fayoum

Type Locality: Italy, Livorno

Type Specimens:

Lectotype: Female (MWNH)

Paralectotype: 1male & 3females, (MWNH)

9. *Hyles tithymali deserticola* (Staudinger, 1901) [21].

Wingspan: 60-75mm.

Host plant: Euphorbiaceae, *Euphorbia* sp.

Geographical Records: Algeria, Western Sahara, Malta, Tunisia, Morocco, Spain, Austria

Distribution in Egypt: Coastal Strip (Mersa Matrouh)

Type Locality: Algeria, Maur. Desert arenos (Biskra)

Type Specimens:

Syntypes: Male & Female (CPM)

6. *Hippotion* Hübner, [1819]

10. *Hippotion celerio* (Linnaeus, 1758) [1-4, 8, 14, 22-24, 27, 28]

Sphinx celerio Linnaeus, 1758

Chaerocampa celerio (Linnaeus, 1758)

Sphinx tisiphone Linnaeus, 1758

Phalaena inquilinus Harris, 1776

Elpenor phoenix Oken, 1815

Hippotion ocys Hübner, [1819]

Deilephila celerio augustii (Trimoulet, 1858)

Deilephila albolineata Montrouzier, 1864

Hippotion celerio brunnea Tutt, 1904

Hippotion celerio pallida Tutt, 1904

Hippotion celerio unicolor Tutt, 1904

Hippotion celerio sieberti (Closs, 1910)

Hippotion celerio rosea (Closs, 1911)

Hippotion celerio luecki Closs, 1912

Hippotion celerio pallida Tutt, 1904

Type Species: *Sphinx celerio* Linnaeus, 1758

Common name: Silver-striped hawk moth, Vine Hawk Moth, Grape Hawk Moth.

Wingspan: 60-80 mm.

Host records: *Vitis* spp., *Parthenocissus* spp., cotton, sweet potatoes, *Colocasia*, *Caladium*, grapes, *Galium* spp., *Fuchsia* spp., *Epilobium* spp., *Beta* spp., *Rumex abyssinicus*, *Ampelopsis* spp., *Boerhavia elegans*, *Cissus cirrhora*, *Acacia karoo*, *Acacia caffra*, *Impatiens*, *Vigna*, *Ipomoea* spp.

Geographical Records: Algeria, Angola, Australia, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, DR Congo, Cote D'Ivoire, Cyprus, Djibouti, England, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Germany, Ghana, Greece, India, Iran, Iraq, Ireland, Italy, Jordan, Kenya, Lesotho, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Oman, Poland, Portugal, Rwanda, Reunion, Saudi Arabia, Seychelles, Sierra Leone, Somalia, South Africa, Spain, Sudan, Sweden, Tanzania, Tunisia, Uganda, United Arab Emirates, Yemen, Zambia, Zimbabwe [32]

Distribution in Egypt: Coastal Strip, Lower Egypt, Upper Egypt, Eastern Desert, Western Desert, Sinai, Gebel Elba, Fayoum

Type Locality: Europe

7. *Theretra* Hübner, [1819]

11. *Theretra Alecto cretica* (Boisduval, 1827) [1, 2, 8, 12, 14, 19, 22-25]

Sphinx alecto Linnaeus, 1758, TL: India

Sphinx alecto Linnaeus, 1758.

Sphinx cretica Boisduval, 1827

Theretra freyeri Kirby, 1892

Theretra alecto transcaspica O. Bang-Haas, 1927

Theretra alecto intermissa Gehlen, 1941

Type species: *Sphinx alecto* Linnaeus, 1758

Common name: Levant hawkmoth

Wingspan: 80--100mm.

Host records: grapes and other Vitaceae, tea, *Vitis* spp. and *Parthenocissus* spp., *Gossypium* spp., Leeaceae, Actinidiaceae, Dilleniaceae, Rubiaceae.

Geographical Records: Afghanistan, Armenia, Bulgaria, China, Cyprus, Greece, India, Iran, Iraq, Israel, Jordan, Lebanon, Malaysia, Pakistan, Palestine, Romania, Sri Lanka, Syria, Taiwan, Turkey

Distribution in Egypt: Lower Egypt, Upper Egypt, Western Desert, Sinai, Fayoum

Type locality: India

12. *Theretra oldenlandiae* (Fabricius, 1775) [19, 31]

Sphinx oldenlandiae Fabricius, 1775

Sphinx drancus Cramer, 1777

Deilephila argentata Stevens, 1828

Chaerocampa sobria Walker, 1856

Chaerocampa puellaris Butler, 1876

Deilephila proxima Austaut, 1892

Theretra olivacens Mell, 1922

Theretra oldenlandiae fuscata Gehlen, 1941

Theretra oldenlandiae olivascens Inoue, 1973

Type species: *Sphinx oldenlandiae* Fabricius, 1775

Common name: White-banded hunter hawkmoth

Wingspan: 62-70 mm.

Geographical Records: Australia, Borneo, China, Hong Kong, Korea, India, Indonesia, Japan, Java, Malaysia, Nepal, Pakistan, Philippines, Russia, Sri Lanka, Thailand [32]

Distribution in Egypt: Lower Egypt

Type Locality: India

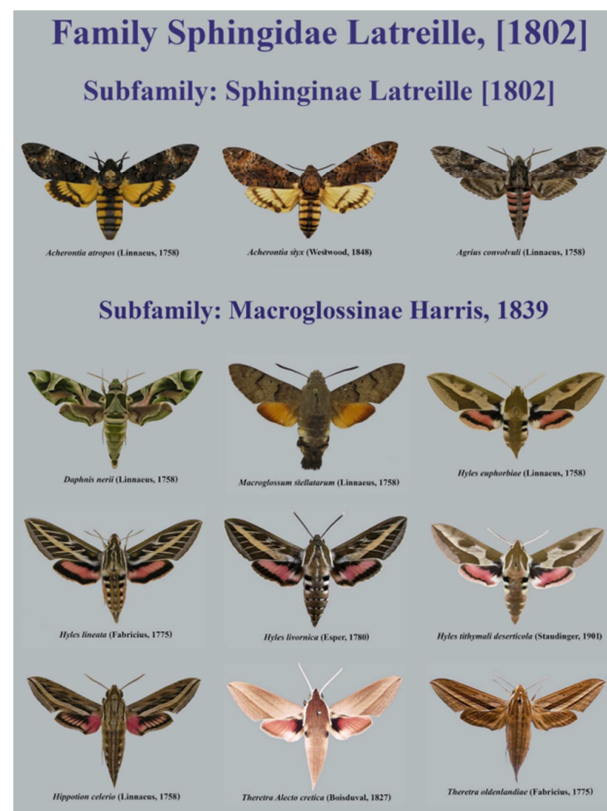


Figure 1. Sphingidae of Egypt.

4. Conclusion

Family Sphingidae is updated in Egypt into 12 species, most of these species are common everywhere in Egypt except only one species (*Theretra oldenlandiae*) is rare and found only in Lower Egypt (Cairo). All the taxonomic positions are reviewed and all the names and synonymies are corrected. *Herse convolvuli* to *Agrius convolvuli*; *Deilephila livornica* to *Hyles livornica*; *Chaerocampa celerio* to *Hippotion celerio*. After revised all collections, and examined all collected specimens the total number of species increased from 7 species into 12 species.

References

- [1] Abdel Fattah M. Amer (2005): Ecological and Taxonomical studies of some Lepidoptera from Egypt with special References to family Noctuidae. Ph.D. Thesis, Department of Entomology, Faculty of Science, Cairo University.
- [2] Abd EL-Fattah M. Amer, Marguerite A. Rizk and Aida K. Iskandar (2006): Impact of Environment on the Diversity of Lepidopterous insects in three Egyptian Governorates. CATRINA (2006), 1 (1): 81-88.
- [3] Ahmet Omer Kocak and Muhabbet Kemal (2009): Diversity of the Lepidoptera in the World (DLW); Lepidoptera in Africa (LAF). Cesa Publications of African Lepidoptera nr. 25.
- [4] Akkuzu H.; Ayberk H. and Inac S. (2007): Hawk moths (Lepidoptera: Sphingidae) of Turkey and their zoogeographical distribution. Journal of Environmental Biology. 28 (4) 723-730 (2007).
- [5] Angelo BortolinI, Filippo Fabiano, Alessandra Sforzi and Luca Bartolozzi (1998): A contribution to the knowledge of the Sphingidae of North India (Insecta, Lepidoptera) Nachr. entomol. Ver. Apollo, N. F. 19 (2): 141-148.
- [6] Badr, M. A.; Oshaibah, A. A.; El-Nabawi, A.; Al-Gamal, M. M. (1985): Classification of some species of the family Sphingidae – Lepidoptera in Egypt. Annals of Agricultural Science, Moshtohor.
- [7] El- Saeady, A. A.; S. M. El-Awady; M. A. Mahmoud; M. A. Badr and M. M. M. E. Megahed (2011): Survey of the most Lepidopterous moths attracted to a light-trap at to regions in Egypt. J. Plant Prot. and Path., Mansoura Univ., Vol. 2 (11): 947–956.
- [8] Erdem Seven (2020): A survey on sphingidae (lepidoptera) species of south eastern Turkey with new distributional records. Cumhuriyet Sci. J., 41 (1) (2020) 319-326.
- [9] Günter C. Müller, Vasiliy Kravchenko, Chuang Li', Ulf Eitschberger, Axel Hausmann Michael A. Miller, Olga Orlova, Reuven Ortal, Wolfgang Speidel & Thomas Witü (2005): The Hawk Moths of Israel: Distribution, Phenology and Ecology (Lepidoptera, Sphingidae) Atalanta (Juli 2005) 36 (1/2): 222-236.
- [10] Hamilton C. A., St Laurent R. A., Dexter K., Kitching, I. J., Breinholt J. W, Zwick A., Timmermans M. J. T. N., Barber J. R. and Kawahara A. Y. (2019): Phylogenomics resolves major relationships and reveals significant diversification rate shifts in the evolution of silk moths and relatives. Hamilton et al. BMC Evolutionary Biology (2019) 19: 182.
- [11] Lehmann L. & Saldaitis A. 2006. Beitrag zur Nachtfalter-Fauna des Sinai (Lepidoptera). - Esperiana 12: 205–209, pls. 23, 24.
- [12] Lewandowski S. & Lewandowski-Krenz K. (2014): Contribution to the Lepidoptera fauna of Egypt (Lepidoptera). Part 1: Families Hesperidae, Pieridae, Lycaenidae, Nymphalidae, Sphingidae, Lasiocampidae, and Erebidae: subfamilies Lymantriinae and Arctiinae. - News from the Entomological Society Apollo 34 (4): 175-184.
- [13] Malcolm J. Scoble (2004): Sphingidae of the World: An Annotated and Illustrated Revisionary Checklist (Lepidoptera: Sphingidae).
- [14] Müller G., Kravchenko, V., Chunang, L. I., Eitschberger, U, Miller M., Orlova O., Speidel W., Witt T. (2005a): The Sphingidae of Jordan: Distribution, Phenology and Ecology. Atalanta. 36 (1/2): 209-220.
- [15] Müller G., Kravchenko, V., Chunang, L. I., Eitschberger U., Hausmann A., Miller M., Orolova O., Ortal R., Speidel W., & Witt T. (2005b): The Hawk Moths of Israel: Distribution, Phenology and Ecology (Lepidoptera: Sphingidae). Atalanta. 36 (1/2): 222-236.
- [16] Pittaway, A. R. (1979): The butterflies and hawk-moths of eastern Saudi Arabia. Proc. Trans. Br. Ent. Nat. Hist. Soc., 12: 90—101.
- [17] Pittaway, A. R. (1981): Further notes on the butterflies and hawk- moths (Lepidoptera) of eastern Saudi Arabia. Entomologist's Gaz., 32: 27--35.
- [18] Pittaway, A. R. (1995): Sphingidae of the western Palaearctic: their ecology and biogeography. PhD Thesis, Imperial College, University of London, UK.
- [19] Pratheesh M., Kuppusamy S., Sekar A., Savarimuthu I. (): A Survey of the genus Theretra Hübner, 1819 (Lepidoptera: Sphingidae) from Kodaikanal Hills (Western Ghats), Tamil Nadu, India.
- [20] Rafi, Muhammad Ather, Sultan, Amir, Kitching, Ian J., Pittaway, Anthony R., Markhasiov, Maxim, Khan, Muhammad Rafique, Naz, Falak (2014): The Hawkmoth Fauna of Pakistan (Lepidoptera: Sphingidae). Zootaxa 3794 (3): 393-418.
- [21] Stefan Lewandowski und Kerstin Lewandowski-Krenz (2014): Beitrag zur Lepidopterenfauna von Ägypten (Lepidoptera), Teil 1: Familien Hesperidae, Pieridae, Lycaenidae, Nymphalidae, Sphingidae, Lasiocampidae; sowie Erebidae: Unterfamilien Lymantriinae und Arctiinae. Nachr. entomol. Ver. Apollo, N. F. 34 (4): 175–184.
- [22] Storey, G., B. A., F. E. S. (1916): List of Egyptian insects in the Collection of the Ministry of Agriculture. Cairo, Government Press, 52pp.
- [23] Wiltshire, E. P. (1948a): The Lepidoptera of the Kingdom of Egypt, part 1. Bulletin of the Society Fouad I Entomology 32: 203-294, pls 1–8.
- [24] Wiltshire, E. P. (1957): The Lepidoptera of Iraq, 162 pp., 17 pls. London.
- [25] Wiltshire, E. P. (1980a): Insects of Saudi Arabia. Lepidoptera: Fam. Cossidae, Limacodidae, Sesiidae, Lasiocampidae, Sphingi dae, Notodontidae, Geometridae, Lymantriidae, Nolidae, Arctiidae, Agaristidae, Noctuidae, Ctenuchidae. Fauna of Saudi Arabia, 2: 179--240.

- [26] Wiltshire, E. P. (1980b): Middle East Lepidoptera, XXXV (I) - Notes on recent captures of moths in the Lebanon, Syria and Sinai. *Proc. Trans. Br. ent. nat. Hist. Soc.*, 13: 41--46.
- [27] Wiltshire, E. P. (1986): Lepidoptera of Saudi Arabia: Fam. Cossidae, Sesiidae, Metarbelidae, Lasiocampidae, Sphingidae, Geometridae, Lymantriidae, Arctiidae, Nolidae, Noctuidae (Heterocera); Fam. Satyridae (Rhopalocera) (Part 5). *Fauna of Saudi Arabia*, 8: 262--323.
- [28] Wiltshire, E. P. (1990): An Illustrated, Annotated Catalogue of the Macro-Heterocera of Saudi Arabia. *Fauna of Saudi Arabia*, 11: 91--250.
- [29] www.BestimmungshilfefürdieinEuropaanachgewiesenenSchmetterlingsarten.
- [30] www.funet.fi/pub/sci/bio/life/.../lepidoptera/.../noctuidae/.../calopha.
- [31] <http://www.afromoths.net>.
- [32] www.noctuidae.de (Noctuidae, Nolidae und Pantheidae von Bernd Schacht).