A contribution to the Dryadaulidae and Tineidae of Lebanon, with two species new to science (Lepidoptera)

With 7 figures

REINHARD GÄDIKE 1, 2 and JAAKKO KULLBERG 3

1 Florusstraße 5, 53225 Bonn, Germany. – tinagma@msn.com
2 Senckenberg Deutsches Entomologisches Institut, Eberswalder Straße 90, 15374 Müncheberg, Germany
3 Finnish Museum of Natural History, P. O. Box 17, Zoology Unit., FIN-00014 University of Helsinki, Finland
Published on 2016–06–30

Summary
Data on recently collected Lebanese Dryadaulidae and Tineidae specimens is presented, as well as a review of previously published records from Lebanon. Altogether 32 species are listed, seven being new for the country. Two of them are described as new to science: Nemapogon phoenicica and Nemapogon shamica.

Key words
Lepidoptera, Tineidae, Dryadaulidae, Lebanon

Zusammenfassung
Die Arbeit ist eine Zusammenstellung der bisher aus dem Libanon bekannten Dryadaulidae und Tineidae. Es werden 32 Arten aufgelistet, sieben davon sind Erstfunde für das Land, zwei sind neu für die Wissenschaft, die hier beschrieben werden: Nemapogon phoenicica und Nemapogon shamica.

Introduction
Lebanon is a small, but biogeographically diverse area. The Mediterranean Sea shore and adjacent heavily populated lowlands share a fauna similar to neighbouring countries, but the highest mountain range of the area, the Mount Lebanon (Jabal Lubnân), makes a difference. The 170 km long mountain range divides Lebanon into a humid western part and dry eastern part. The range is on average 2500 meters high, the highest summit being Qurnat as Sawda, at 3088 m. During winter the range is under thick snow cover, and the mountains have considerable resources of water. The name Lebanon originates from the old Semitic word Ibn meaning white and is an obvious reference to the snow, which remains in the mountains until late in summer (Room 2006). To the east of Mount Lebanon lies the Beqaa rift valley, with the Antilebanon mountains on the Syrian border. Generally, in Lebanon and other Arabic speaking countries, it is necessary to be careful with local names and their transcriptions to various western languages and alphabets. In Lebanon the transliterated locality names differ remarkably, depending, on whether they are transliterated to French or English. Different Arabic dialects and other local minority languages may also cause confusion in locality names. Because of the topography and the almost continuous mountain range from Lebanon to Syria and the Turkish...
Hatay province, some species are common not only to the Lebanese and Turkish fauna, but also to that of Central Europe. This can be seen especially at higher altitudes of 1700–2300 m, where widespread Palaearctic butterfly species such as *Parnassius mnemosyne* (L.) and *Melitaea cinxia* (L.) occur, the Levant being the extreme southern limit of their range. The number of species in Lebanon (32) is nearly the same as in the neighbouring countries Israel (30) and Syria (24), whereas in Turkey (92) and in Greece (114) many more species are known. The differences depend merely on the level of collecting activity undertaken, rather than the habitat diversity in these two countries.

**Results**

**List of the hitherto known Dryadaulidae and Tineidae species from Lebanon**

The numeric codes starting with GK. refer to electronic specimen archives of the Finnish Museum of Natural History: http://id.luomus.fi/

**Dryadaulidae**

According to recently published studies the genus *Dryadaula*, hitherto regarded as a member of the subfamily Dryadaulinae, is now placed in its own family: Dryadaulidae (*Regier et al.*, 2014).

**Dryadaula minuta** *Gaedike, 2007*

1 ♀, GK.7854, Koura 308 m, 34°19’33”N, 35°47’24”E, Beshmezzine, 3.vi.2012, J. Kullberg & T. Lievonen leg.: FMNH. **New to Lebanon**, hitherto known only from Turkey (type series) and Greece (Rhodes).

**Tineidae**

**Meessiinae**

According *Regier et al.* (2014) *Eudarcia Clemens, 1860* and *Bathroxena Meyrick, 1919* from the former subfamily Meessiinae form a basal family Meessiidae in Tineoidea. As the positions of the majority of other Palaearctic genera of the former subfamily Meessiinae are still uncertain, these genera are still placed here.

**Eudarcia holtzi** (*Rebel, 1902*)

Holotype and paratype of the synonym of *Obesoceras libanoticum* *Petersen, 1968* are from Lebanon (*Petersen, 1968: 60*).

3 ♀, GK.7843, 7847, 7886, Koura 308 m, 34°19’33”N, 35°47’24”E, Beshmezzine, 3.vi.2012, J. Kullberg & T. Lievonen leg.: FMNH; 1 ♀, GK.6374, Kesrouan, 950 m, 34°03’57,85”N, 35°45’04,03”E, Jebel Musa, Mar Geryes, 25., 29.v.2012, J. Kullberg & T. Lievonen leg.: FMNH; SDEI (7847).

**Infurcitinea karmeliella** (*Amsel, 1935*)

Petersen (1986: 61)

1 ♀, Beqaa, 860 m, 33°43’57”N, 35°47’14”E, 2.ix.2010, leg. J. & A. Kullberg; FMNH; 1 ♀, GK.6374, Kesrouan, 950 m, 34°03’57,85”N, 35°45’04,03”E, Jebel Musa, Mar Geryes, 25., 29.v.2012, J. Kullberg & T. Lievonen leg.: FMNH; SDEI (7847).

**Abbreviations**

coll. Arenberger Ernst Arenberger, Vienna, Austria

coll. Roweck Hartmut Roweck, Kiel, Germany

FMNH Finnish Museum of Natural History, Helsinki, Finland

LMD Löbbecke-Museum, Düsseldorf, Germany

MNHP Museum of Natural History, Praha, Czech Republic

NMW Naturhistorisches Museum, Vienna, Austria

SDEI Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany

SMNK Staatliches Museum für Naturkunde, Karlsruhe, Germany

ZMUC Zoological Museum of Copenhagen, Denmark

DOI: 10.21248/entomol.66.1.145-152
34°03'08.33"N, 35°46'03.87"E, Jebel Musa, Mar Elias, 27.v.2012, J. Kullberg & T. Lievonen leg.: FMNH; SDEI.

*Lichenotinea pustulatella* (Zeller, 1952)

1♀, GK.7240, Kesrouan 1130 m, 14°03’08.33", 35°46’03.87"E, Jebel Musa, Mar Elias, 27.v.2012, J. Kullberg & T. Lievonen leg.: FMNH; 2♀, GK.6416, 6419, same location, but 29.v.2012: FMNH; SDEI (6419).

**New to Lebanon**, hitherto known from Spain, France, Italy, from Balkan Peninsula to Romania, in Central Europe from Austria to Germany and Belgium. Outside Europe recorded from Turkey.

*Stenoptinea cyaneimarmorella* (Millière, 1854)

Petersen (1968: 58 [under the synonym *Celestica angustipennis* Staudinger, 1871]).

**Hapsiferinae**

*Hapsifera luridella* Zeller, 1847

Petersen (1968: 65)

6 exx., 12 km N Beirut [12 km N of Beirut], 9.vi.1969, leg. Groß: LMD;
10 exx., Zedern bei Becharré [Cedars of Bsharri], 14–16. vi.1969, leg. Groß: LMD.

2♂, 1♀, 1♀, Batroun, 200 m, 34°16’50.72"N, 35°47’23.99"E, Tel Ras Nhascl, 1.vi.2012, J. Kullberg & T. Lievonen leg.: FMNH; 2♂, 1♀, 1♀, Batroun, 200 m, 34°16’50.72"N, 35°47’23.99"E, Tel Ras Nhascl, 1.vi.2012, J. Kullberg & T. Lievonen leg.: FMNH; 2♂, 1♀, 1♀, Batroun, 200 m, 34°16’50.72"N, 35°47’23.99"E, Tel Ras Nhascl, 1.vi.2012, J. Kullberg & T. Lievonen leg.: FMNH;
6♂, 4♀, 1♀, Batroun, 200 m, 34°16’50.72"N, 35°47’23.99"E, Tel Ras Nhascl, 1.vi.2012, J. Kullberg & T. Lievonen leg.: FMNH; SDEI (6419).

*Hapsifera multiguttella* (Ragonot, 1895)

Petersen (1968: 65)

*Rhodobates nodicornellus* (Rebel, 1911)

Petersen (1968: 53)

1♂, 3♀, GK.8122, 8133, 8135, 8139, Kesrouan, 885 m, 34°3’25.63"N, 35°43’22.8"E, Ghbele, 5.–6.vi.2014, J. Kullberg & T. Lievonen leg.: FMNH; SDEI (8122); 3♂, 3♀, GK.8202, 8208, 8212, 8219, 8229, 8232, Kesrouan, 900 m, 34°3’25.63"N, 35°43’07"E, Jebel Musa, St. Takla.

Holotype from Lebanon.

**Nemapogoninae**

*Nemapogon kasyi* Gaedike, 1986

Part of type series from Lebanon.

5♀, 4♂, 1♀, Kesrouan, 1070 m, 34°03’08.33", 35°46’03.87"E, Jebel Musa, Mar Elias, 29.viii.2010, leg. J. & A. Kullberg: FMNH; SDEI (GK.4446); 1♀, 1♀, 1♀, Kesrouan, 1150 m, 34°03’08.33", 35°46’03.87"E, Jebel Musa, Mar Elias, 29.viii.2010, leg. J. & A. Kullberg: FMNH; 5♂, 5♀, GK.5869–5871, 5916, Kesrouan, 1520 m, 34°02’56.69"N, 35°47’17.35"E, 2 km W Ain el Qadah, 29.v.2014, J. Kullberg & T. Lievonen leg.; FMNH; SDEI (GK.5331).

*Pararhodobates syriaca* (Lederer, 1857)

First records from Lebanon since the type series.

*Nemapogon varitianae* Gaedike, 1986

Part of type specimens from Lebanon.


First records from Lebanon since the the type series.

*Nemapogon phoenicica* Gaedike & Kullberg spec. nov.

typus ♀, Nemapogon phoenicica sp. n. det. G. Gaedike, 2014;” NMW.

885 m, 34°3′25′63″N, 35°43′2′28″E, Ghbele, 5.–6.vi.2014.

Description (fig. 1): Wingspan 9 – 12 mm; head brush pale creamy, laterally light brown; antenna grey-brown, scape and the first segment of flagellum darker; labial palpus outside dark grey-brown, inside creamy, second segment apically with two bristles; thorax and tegulae brown, apical half pale creamy, nearly white; Forewing white with ground colour and pattern of brown scales, characteristic for the genus: brown are an oblique short stripe from base at costa, a stripe at 1/2 from costa to cell connected with a larger dot, being oblique from below; before dorsum, four short stripes on costa from 1/2 to apex; a nearly complete line and a thin line at base of fringe from apex to the end of fringe; in the white area overlaid partly with lighter brown scales. Hindwing white.

Male genitalia (figs 2–4): Uncus with two short pointed lobi, gnathos arms basally rounded, slightly curved to pointed tip, saccus a little shorter than valva; valva as long as uncus, terminating in a pointed slightly hook-shaped pointed apex, digitus clearly projecting above apex, anellus short, band-shaped; phallus nearly as long as uncus-tegumen-saccus complex, with break at 1/3, without any cornuti or appendices.

Female genitalia (figs 5–5c): Anterior apophysis end in elongated sclerotised plate connected with edge of ostium; ostium lip cup- or mushroom-shaped, apically with some long bristles, the shape is somewhat variable; ostium lip and the first part of ductus bursae with stronger sclerotization.

Etymology: Named after the ancient culture of the Phoe- nicians, which originally centred in the present coastal Lebanon and was known as Phoenicia.

Biology: Larval host unknown. Previous records of many members of the genus show that larvae are fungivorous, therefore it can be presumed that larvae of this species have a similar life history. The adults were collected between May and August.

Remarks: Superficially not necessarily distinguishable from the other members of the genus. The genitalia structure shows similarities to the species group with a more or less mushroom-shaped ostium lip in females. Differences are in the larger sclerotized part of ductus bursae and in the more cup-shaped ostium lip in females. In males the phallus is without any cornuti and other appendices, which are characteristic for most of the members of the group of species: hungaricus Gozmány, 1960; cyprica Gaedike, 1986; arcosensis Gaedike, 2007; anatolica Gaedike, 1986; arenbergeri Gaedike, 1986; gravosaellus Petersen, 1957.

Nemapogon shamica Gaedike & Kullberg, spec. nov.

Description (fig. 6): Wingspan 12 – 15 mm; head brush pale creamy, laterally and tuft between antennae grey-brown; antenna grey-brown, underside lighter; outside of labial palpus dark grey-brown, inside creamy, second segment on upper side with some bristles, apically with four to five bristles; thorax and tegulae brown, only apically pale creamy. The whitish ground colour of forewing nearly completely overlaid with brown scales, forming a pattern, characteristic for the genus: from base at costa oblique to the begin of cell; at 1/2 from costa oblique through cell to dorsum at begin of fringe; a large patch before apex from costa to fringe; some short stripes at costa; a line from apex along fringe to the end of them. Hindwing light grey.

Male genitalia: Unknown.

Female genitalia (figs 7–7h): Apophysis anterioris ends in narrow prolonged plate; ostium lip arrowhead-shaped, the apical process with variable length, ostium lip basally with a more strongly sclerotized area of different length.

Etymology: The name is derived after the Arab name “ash-Sham” of the Levant, originally meaning the area under the rule of Caliphate and its capital Damascus.

Biology: Larval host unknown. The hitherto known records of many members of the genus show that larvae are fungivorous, therefore it can be presumed that larvae of this species have a similar life history.

Remarks: Not superficially certainly distinguishable from the other members of the genus. The new species is a member of a group of species having an arrowhead- shaped ostium lip with a more or less long terminal process with some long bristles. It is similar to N. sardicus GAEDIKE, 1983, but the ostium lip is more or less triangular, with a short apical process, and N. signatellus PETERSEN, 1957, but this species is characterised by having a signum in the corpus bursae.

Nemapogon signatellus PETERSEN, 1957
GAEDIKE (1986: 37)
3 ♂, GK.8132, 8169, 8170, Kesrouan, 885 m, 34°3’25,63”N, 35°43’2,28”E, Ghbele, 26.v.2012, J. Kullberg & T. Lievonen leg.: FMNH; 2 ♂, GK.6297, 6311, Kesrouan, 1520 m, 34°02’56,69”N, 35°47’17,35”E, 2 km W Ain el Qadah, 29.v.2012, J. Kullberg & T. Lievonen leg.: FMNH; 4 ♂, GK.6367, 6372, 6680, 6682, Kesrouan, 950 m, 34°03’57,85”N, 35°45’04,03”E, Jebel Musa, Mar Geryes, 25., 29.v.2012, J. Kullberg & T. Lievonen leg.: FMNH; 1 ♂, GK.7856, Koura, 308 m, 34°19’33”N, 35°47’24”E, Beshmezzine, 3.vi.2012, J. Kullberg & T. Lievonen leg.: FMNH.

Nemapogon ruricolella (STAINTON, 1849)
1 ♂, GK.8114, Kesrouan, 885 m, 34°3’25,63”N, 35°43’2,28”E, Ghbele, 5.–6.vi.2014, J. Kullberg & T. Lievonen leg.: FMNH.

New to Lebanon. Hitherto known from nearly all southern and central European countries, apart from Scandinavia. Outside Europe known from Turkey.

Nemapogon orientalis PETERSEN, 1961
Holotype from Lebanon.

PETERSEN & GAEDIKE (1979: 391)

Myrmecozelinae

Ateliotum syriaca (CARADJA, 1920)
Holotype from Lebanon; PETERSEN & GAEDIKE (1979: 400); PETERSEN (1968: 54).
1 ♂, Beqaa, 860 m, 33°43’57”N, 35°47’14”E, Kesrouan, 3.i.x.2010, leg. J. & A. Kullberg: FMNH; 10 ♂, 2 ♀, Kesrouan, 1070 m, 34°3’2”N, 35°45’48”E, Jebel Musa, 29.viii.2010, leg. J. & A. Kullberg: FMNH; SDEI; 5 ♂, 1 ♀, Batroun, 200 m, 34°16’50,72”N, 35°47’23,99”E, Tel Ras Nhascl, 1.vi.2012, leg. J. Kullberg & T. Lievonen: FMNH; SDEI; 1 ♀, GK.7871, Koura 308 m, 34°19’33”N, 35°47’24”E, Beshmezzine, 3.vi.2012, J. Kullberg & T. Lievonen leg.: FMNH.

Cephimallota praetoriella (CHRISTOPH, 1872)
1 specimen, Cedern bei Becharré [Cedars of Bsharri], 1900–2000 m, 14.–16.vi.1969, leg. Groß: LMD.

New to Lebanon, hitherto known in Europe from Germany, Czech Republic, Ukraine and European part of
Russia. Outside Europe from Kazakhstan, Turkmenistan, Caucasus region (Armenia, Azerbaijan), Iran and Turkey.

**Cephimallota angusticostella** (Zeller, 1839)

The Holotype of the synonym *Cephimallota libanotica* Petersen, 1959 is from Lebanon.

Petersen (1968: 54 [under the name *libanotica*]).

1 ♂, GK.8016, Kesrouan, 960 m, 34°02'56"N, 35°44'14"E, Nar ed Dahab, 4.vi.2012, J. Kullberg & T. Lievonen leg.; FMNH.

**Perissomasticinae**

**Edosa lardatella** (Lederer, 1858)

Petersen & Gaedike (1979: 398)

2 ♂, GK.7327, 7218, Kesrouan 1150 m, 34°03'02'N, 35°46'03'14"E, Jebel Musa, Mar Elias, 27.v.2012, J. Kullberg & T. Lievonen leg.; FMNH.

**Edosa fuscoviolacella** (Ragonot, 1895)

Petersen (1968: 55; Petersen & Gaedike (1979: 399 [under the synonym *Episcardia violacella* (Rebel, 1893)])

2 ♂, Kesrouan, 1070 m, 34°3,2'N, 35°45'48"E, Jabal Moussa [= Jebel Musa], 29.viii.2010, leg. J. Kullberg & A. Kullberg: FMNH.

**Tinea basifasciella** Ragonot, 1895

Petersen (1968: 57)

1 ♂, Batroun, 34°18'29"N, 35°52'14"E, Tannourine, Balaá, 1512 m, 22.viii.2010, leg. J. & A. Kullberg; FMNH.

**Niditinea fuscella** (Linnaeus, 1758)

Petersen & Gaedike (1979: 406)

**Proterospastis merdella** (Zeller, 1847)

Petersen (1968: 58)

**Monopis imella** (Hübner, 1813)

Petersen & Gaedike (1979: 409)

1 ♀, GK.5819, Kesrouan, 1520 m, 34°02'56,69"N, 35°47'17,35"E, 2 km W Ain el Qadah, 29.v.2012, J. Kullberg & T. Lievonen leg.: FMNH.

We are extremely grateful to Pierre Doumet and the friendly staff of the Association for the Protection of Jabal Moussa http://www.jabalmoussa.org/ and opportunity for accommodation in the Dimitriades Guest House in Ghbele and great possibilities collecting both in 2010 and 2012 in the protected area of the Jabal Moussa Mountain, where several interesting species were found. We also want to thank the Mina family in Bezhmessine for hosting the expedition and providing the chance both to collect and efficiently prepare the material. We would also like to thank the accompanying colleagues Tommi Lievonen and especially Anssi Kullberg for all his expertise and contacts in Lebanon, as well as his help with the Arabic language.

**References**


Fig. 1: *Nemapogon phoenicica* spec. nov., holotype.

Fig. 6: *Nemapogon shamica* spec. nov., holotype.

Figs 2–4: *Nemapogon phoenicica* spec. nov., ♂ (2 - uncus-tegumen-saccus complex; 3 - valva; 4 - phallus). – Figs 5–5c: *Nemapogon phoenicica* spec. nov., ♀ (5 - complete genitalia apparatus: Turkey; 5a-5c - variability of the ostium lip: 5a, 5c: Turkey; 5b: Cyprus).

Figs 7–7h: *Nemapogon shamica* spec. nov., ♀ (7 - complete genitalia apparatus: Cyprus; 7a–7h: variability of the ostium lip: 7a, b, c, e, h: Lebanon; 7d, f, g: Cyprus).