

**Contribution to the knowledge of the genus *Nyctobrya*
BOURSIN, 1957 (Lepidoptera: Noctuidae: Bryophilinae)
in the Macaronesian archipelago, with description
of a new species from Gran Canaria**

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Abstract

The species of the nominotypical subgenus of *Nyctobrya* BOURSIN, 1957, all endemic in the Canary Islands and Madeira, are comparatively treated. Hitherto, three species and one subspecies are known, and one additional species is described as new to science: *Nyctobrya pinkeri* sp.n. from Gran Canaria. Lectotypes are designated for *Bryophila simonyi* ROGENHOFER, 1889, *Bryophila simonyi* var. *debilis* REBEL, 1894, and *Bryophila algae* var. *canaria* ALPHÉRAKY, 1890. All species and their genitalia are illustrated and characters are given to discriminate all these taxa.

Key words: Lepidoptera, Noctuoidea, Noctuidae, Bryophilinae, *Nyctobrya*, new species, lectotype, Canary Islands, Gran Canaria, Madeira

Zusammenfassung

Die Gattung *Nyctobrya* BOURSIN, 1957 ist in zwei Untergattungen, *Nyctobrya* s.str. und *Bryopsis* BOURSIN, 1970, aufgeteilt. *Nyctobrya* s.str., welche auf den Kanarischen Inseln und Madeira endemisch ist und hier neben *Cryphia tenerifensis* PINKER, 1968 die Unterfamilie Bryophilinae vertritt, ist eine noch unzureichend untersuchte Gruppe. Bei den Arten dieser Untergattung erweist sich eine eindeutige Artzuweisung aufgrund äußerlicher morphologischer Unterschiede als sehr schwierig. Deshalb werden erstmals alle Taxa auch in den Genitalarmaturen beider Geschlechter dargestellt und arttypisch differenziert. Bisher enthielt die Untergattung drei Arten und eine Unterart; eine weitere Art, *Nyctobrya pinkeri* sp.n. von Gran Canaria, wird hier neu für die Wissenschaft beschrieben. Lectotypen werden für *Bryophila simonyi* ROGENHOFER, 1889, *Bryophila simonyi* var. *debilis* REBEL, 1894 und *Bryophila algae* var. *canaria* ALPHÉRAKY, 1890 designiert.

Resumen

En este artículo se estudian comparativamente las especies del subgénero *Nyctobrya* endémicas de las Islas Canarias y de Madeira. Se conocen tres especies y una subespecie, y una especie se describe aquí como nueva para la ciencia: *N. pinkeri* sp.n. de Gran Canaria. Se presentan ilustraciones de todas las especies y de sus genitalia, y se mencionan rasgos que permiten discriminar todos estos taxones.

Introduction

The genus *Nyctobrya* BOURSIN, 1957 is divided into two subgenera, *Nyctobrya* s.str. and *Bryopsis* BOURSIN, 1970. *Bryopsis* BOURSIN (1970) includes five species from Europe, northwestern Africa and the Middle East. Species of *Nyctobrya* s.str. inhabit the Canary Islands and Madeira where they are the only representatives of the Bryophilinae. In general Bryophilinae is a poorly studied group. It is very difficult to identify species with certainty based on external morphological differences only. Therefore, for all species of *Nyctobrya* s.str. the genitalia of both sexes are figured for the first time and the differences of the individual species are indicated. So far four taxa were known. One major problem was that Charles Boursin had loaned the type material of *Bryophila simonyi* and *Bryophila simonyi debilis* from the Natural History Museum Vienna for a revision, but he was unable to complete the revision and the types were not returned after his death. Another problem was that PINKER & BACALLADO (1975) have listed „*Nyctobrya pinkeri* BAC. (in litt.)“, but have never described this taxon. At last, the types loaned by Boursin and having disappeared for more than 40 years could be found in the bequest of Boursin in the State Museum of Natural History Karlsruhe, including a series of the undescribed *Nyctobrya pinkeri* with already designated holo- and allotype. The latter species is now formally described as *Nyctobrya pinkeri* sp.n., the name which was originally envisaged by Boursin.

Materials

The examined specimens are deposited in the following collections:

GBG/ZSM	Coll. Gottfried Behounek, Grafing / Bavarian State Collection of Zoology, Munich, Germany
LMNK	State Museum of Natural History Karlsruhe, Germany
NHMW	Natural History Museum, Vienna, Austria
NKMB	Museum für Naturkunde, Berlin, Germany
ZISP	Zoological Institute, St. Petersburg, Russia

Labels are cited in their original wording.

Systematic part

Checklist of treated taxa

<i>Nyctobrya (Nyctobrya) simonyi simonyi</i> (ROGENHOFER, 1889)	Tenerife, Palma (? Gran Canaria, Fuerteventura, Gomera, Hierro, Salvages)
<i>Nyctobrya (Nyctobrya) simonyi debilis</i> (REBEL, 1894)	Lanzarote, Graciosa, Alegranze
<i>Nyctobrya (Nyctobrya) pinkeri</i> sp.n.	Gran Canaria
<i>Nyctobrya (Nyctobrya) canaria</i> (ALPHÉRAKY, 1889)	Tenerife, Palma
<i>Nyctobrya (Nyctobrya) maderensis</i> (BETHUNE-BAKER, 1891)	Madeira

Genus *Nyctobrya* BOURSIN, 1957

Type species: *Bryophila simonyi* ROGENHOFER, 1889 by original designation.

Notes: BOURSIN (1957) originally described *Nyctobrya* as a subgenus of *Cryphia* HÜBNER, 1818. He included "*Cryphia*" *simonyi* ROGENHOFER, 1889 with its ssp. *debilis* REBEL, 1894, "*Cryphia*" *canariae* ALPHÉRAKY, 1890 and "*Cryphia*" *maderensis* BETHUNE-BAKER, 1891 and the latter two were treated as full species. FIBIGER et al. (2009) elevated *Nyctobrya* to genus rank, with *Bryopsis* BOURSIN, 1970 as a subgenus.

Nyctobrya (Nyctobrya) simonyi simonyi (ROGENHOFER, 1889) (Figs. 1 - 5, 19, 20, 25)

Bryophila simonyi ROGENHOFER, 1889, Verhandlungen der kaiserlich-königlichen zoologisch-botanischen Gesellschaft in Wien 39: 24-38.

Type material examined: Lectotype (♂, NHMW, present designation, according to the unpublished selection of Ch. Boursin): // white label with black inscription: Tenerife An schattigen Stellen der Schluchten oberhalb d.Monte verte, Aug. [18]88// white label with red inscription: *Bryophila simonyi* ♂, Type, Rghfr// white label with black inscription: *Cryphia simonyi* Rghfr. ♂, Boursin det.// white label with red inscription: PRÉPARATION No. WM 420 CH. BOURSIN//. – Paralectotype (♀, NHMW): // white label with black inscription: Tenerife, M[onte] verte, 1888, O. Simony // white label with red inscription: *Bryophila simonyi* 1889. Rghfr// white label with red inscription: Type, white label with black inscription: *Cryphia simonyi* Rghfr. ♀, Boursin det.//.

Further material examined: Tenerife: 1 ♂, Tenerife, Guimar, Bco. de Badajoz, 700 m, 22.vi.1999, leg. O. Czadek, Prp. 6287♂, 1 ♀ same locality, 06.IX.2002, leg. O. Czadek, Prp. 6286♀, 1 ♂, Tenerife, El Rosario, Radazul Bajo, 65 m, 02.VI.2003, leg. O. Czadek, Prp. 6288♂ (GBG/ZSM); 1 ♂, Tenerife, La Oratava, Mont. Rioja, 1770 m, 8.IV.2001, leg. O. Czadek, Prp. 6285♂ (GBG/ZSM); 1 ♂, Teneriffa, San Miguel, 8.-19.IX.1997, leg. M. Keller, Prp. 6308♂ (GBG/ZSM); 4 ♂♂, 2 ♀♀, Teneriffa, nördl. Tacoronte, 125 m, 12.x.2006, leg. K. Cerny, Prp. 6284♂, 6294♀, 6295♀ (GBG/ZSM). 1 ♂, Canar Teneriffa // white label, Cyrillic, [coll. Great Prince Nikolai Michailovich] // white label, Cyrillic, [coll. Great Prince Nikolai Michailovich] // white label, praep. micr. 7388 (ZISP); 1 ♂, Canar Teneriffa // white label, Cyrillic, [coll. Great Prince Nikolai Michailovich] // white label, praep. micr. 7388 (ZISP); 1 ex. (without abdomen) Laguna, 4.ix.1910 // white label, praep. micr. 7385 (ZISP). – Palma: 1 ♂, Palma, El Paso Umg., Cumbre Nueva, 1350 m, E. Friedrich leg., 12.9.2007, Prp. 8213♂ Behounek (coll. E. Friedrich, Jena); 1 ♂, Palma, El Paso, Pina de la Virgen, 850 m, E. Friedrich leg., 14.9.2007, Prp. 8214♂ Behounek (coll. E. Friedrich, Jena); 1 ♀, 1 ♂, Fuencaliente NW, El Charco, 750 m, E. Friedrich leg., 13.i.2007, Prp. 8216♀, 8217♂, Behounek (coll. E. Friedrich, Jena).

Description: Wing span: 24 - 28 mm. Ground colour of forewing dark brownish gray to graphite gray; central area usually darker, with sharply contrasting orbicular and reniform stigmata; medial fascia clearly visible. Antemedian fascia basally and postmedian fascia distally pale. Ground colour of hind wing like in forewing, basally slightly paler; distal dark fascia and discoidal spot of underside always visible.

The pattern gives a more uniform impression than in the other three species. The males are more uniformly coloured than the females. Specimens of the second generation from Tenerife are smaller and more uniform than others in both sexes and especially in worn specimens not doubtlessly identifiable by external characters.

Male genitalia (Figs. 19, 20): Uncus long, spatulate. Valvae relatively broad, tapering towards costa. Upper apex of valvae elongate. Corona absent. Sacculus without extension; ampulla very long and slender, acute, exceeding costa. Juxta shield-shaped. Aedeagus well-developed; vesica relatively short and broad, with large, long, curved cornutus that is almost as long as aedeagus.

Figs. 1 - 18: Adults: (1 - 5) *Nyctobrya simonyi simonyi*: (1) Lectotype (♂, wingspan 27,5 mm, NHMW); (2) original labels of lectotypus (♂); (3) male from Tenerife, El Rosario (slide 6288, wingspan 28 mm, GBG/ZSM); (4) male from Tenerife, La Oratava (slide 6285, wingspan 24 mm, GBG/ZSM); (5) female from Tenerife, Güimar (slide 6286, wingspan 26 mm, GBG/ZSM). (6 - 9) *Nyctobrya simonyi debilis*: (6) Lectotype (♂, wingspan 23 mm, NHMW); (7) original labels of lectotype; (8) paralectotype (♀, Lanzarote, slide 12084, wingspan 17,5 mm, NHMW); (9) paralectotype (♀, Lanzarote, slide 12085, wingspan 19 mm, NHMW). (10 - 12) *Nyctobrya pinkeri* sp.n.: (10) Holotype (♂, Gran Canaria, Caldera de Bandama, slide 12043, wingspan 26 mm, NHMW); (11) paratype (♀, Gran Canaria, Caldera de Bandama, slide 12087, wingspan 28 mm, NHMW); (12) paratype (♂, Gran Canaria, Telde, wingspan 24,5 mm, NHMW). (13 - 16) *Nyctobrya canaria*: (13) Lectotype (♀, Tenerife, slide 0291, wingspan 24 mm, ZISP); (14) original labels of lectotype; (15) female from Tenerife, Los Realejos (slide 4880, wingspan 24 mm, GBG/ZSM); (16) male from Tenerife, Güimar (slide 6296, wingspan 25 mm, GBG/ZSM). (17 - 18) *Nyctobrya maderensis*: (17) male from Madeira, Encumeada (slide 8083, wingspan 25 mm, GBG/ZSM); (18) female from Madeira, Estanquinhos (slide 6320, wingspan 28 mm, GBG/ZSM).

Female genitalia (Fig. 25, 26): Ostium slightly narrower and much deeper than in *N. pinkeri*; ductus bursae relatively short, sclerotized, transition to ostium short, membranous and transparent. Corpus bursae tube-shaped, transparent, ductus seminalis from apex of corpus. Ductus bursae relatively short, heavily sclerotized immediately below ostium; transition to corpus bursae also membranous and transparent; with strongly sclerotized area opposite of origin of ductus bursae. Corpus bursae tube-shaped, transparent.

Biology: Flight period: Specimens from May, June, July, September, and October suggest two or possibly more generations. The biology is still undescribed. Food plants are probably various species of lichen, like in other species of the Bryophilinae. This is probably also the case in other species treated here. REBEL (1910) reported that the larvae were found under stones in April.

Distribution: The distribution on the Canary Islands is given in the literature as Tenerife, Palma, Gran Canaria, Fuerteventura, Gomera, Hierro, and Salvages. Only Tenerife and Palma could be verified by dissected specimens. Other records must be checked.

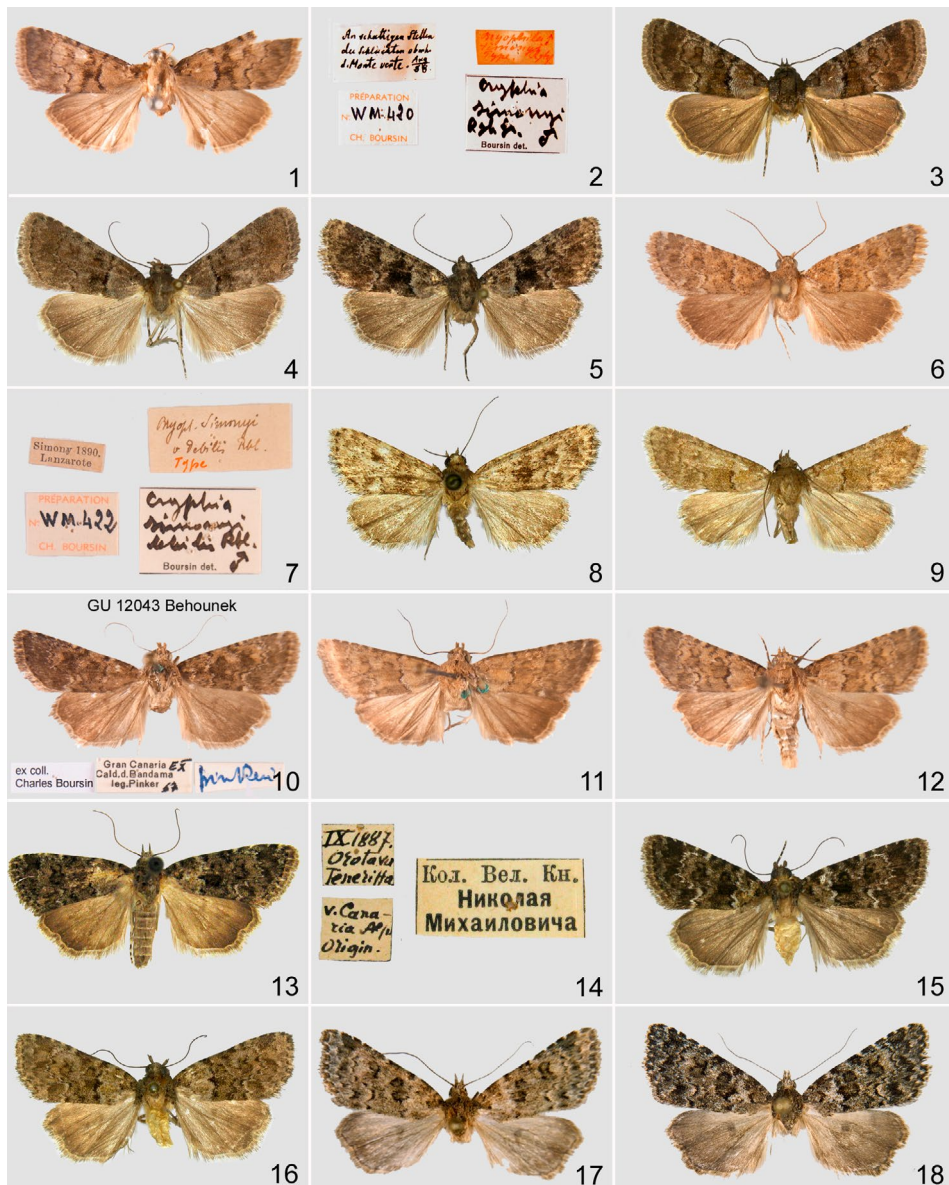
Nyctobrya (Nyctobrya) simonyi debilis (REBEL, 1894) (Figs. 6 - 9, 21, 26)

Bryophila simonyi var. *debilis* REBEL, 1894 (in REBEL & ROGENHOFER), Zur Lepidopterenfauna der Canaren, Annalen des k.k. naturhistorischen Hofmuseums 9: 50.

Type material examined: Lectotype (♂, NHMW, present designation, according to the unpublished selection of Ch. Boursin): // white label with black inscription: Lanzarote, Simony, 1890 // white label with black inscription: Bryoph. Sinomyi v. *debilis* Rbl., red inscription, Type // white label with black inscription: *Cryphia simonyi debilis* Rbl. ♂, Boursin det. // white label with red inscription: PRÉPARATION No. WM 422 CH. BOURSIN//. – Paralectotype (1 ♂, NHMW): // white label with black inscription: Lanzarote, Simony, 1890 // white label with black inscription: 186 Yania // white label with black inscription: Bryoph. Sinomyi v. *debilis* Rbl., red inscription, Type // white label with black inscription: *Cryphia simonyi debilis* Rbl. ♂, Boursin det. // white label with red inscription: PRÉPARATION No. WM 415 CH. BOURSIN//.

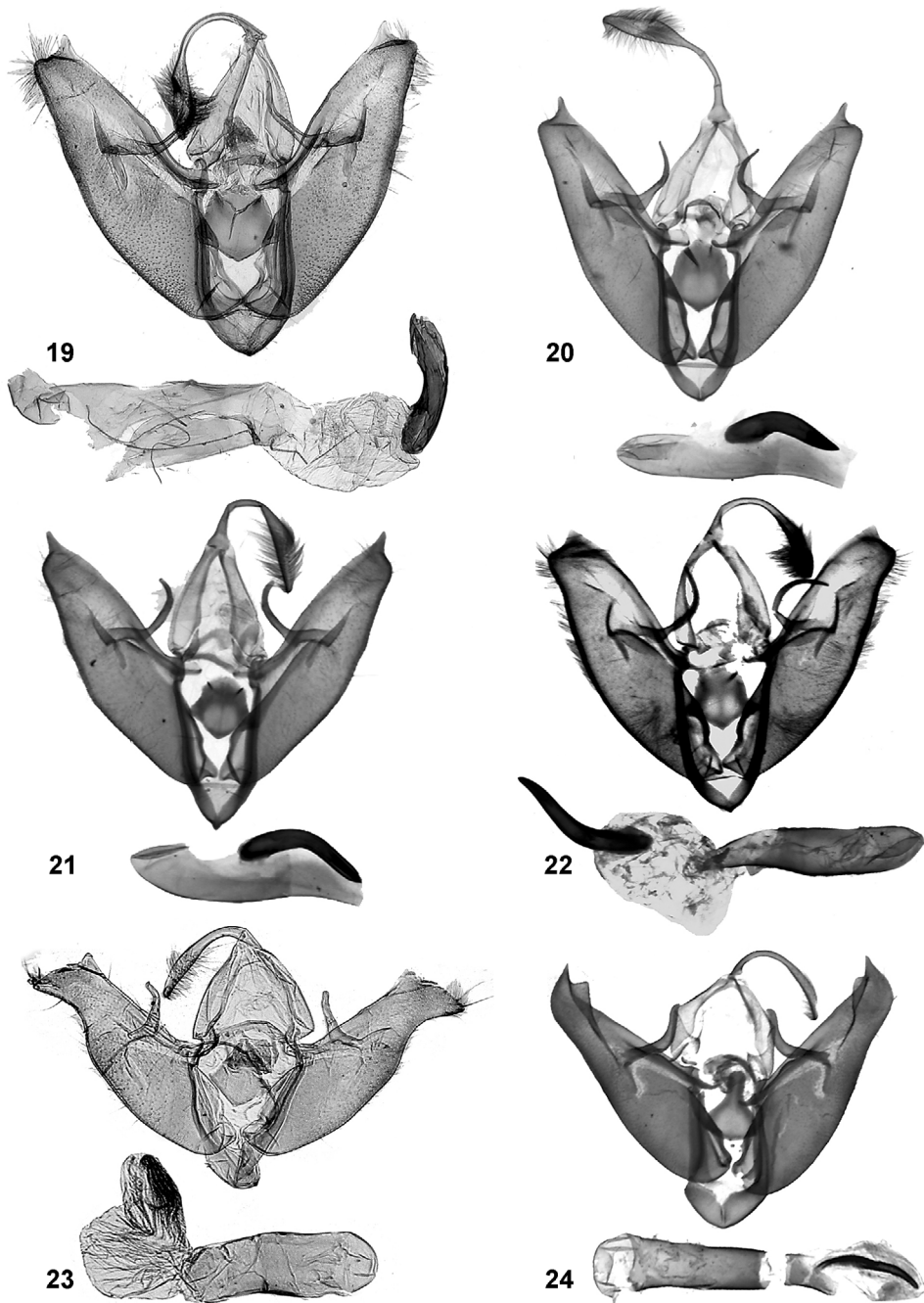
Further material examined: 1 ex. (without abdomen), // white label with black inscription: Lanzarote, Simony, 1890 // white label with black inscription: Bryoph. Sinomyi *debilis* Rbl. // (LMNK); 2 ♀♀, Lanzarote, Simony, 1890, Prp. 12084 und 12085, Behounek (NHMW).

Description: Wing span: 18 - 23 mm; clearly smaller than nominal-typical subspecies. Ground colour of wings in all specimens examined reddish brown. Pattern like in nominal-typical subspecies.

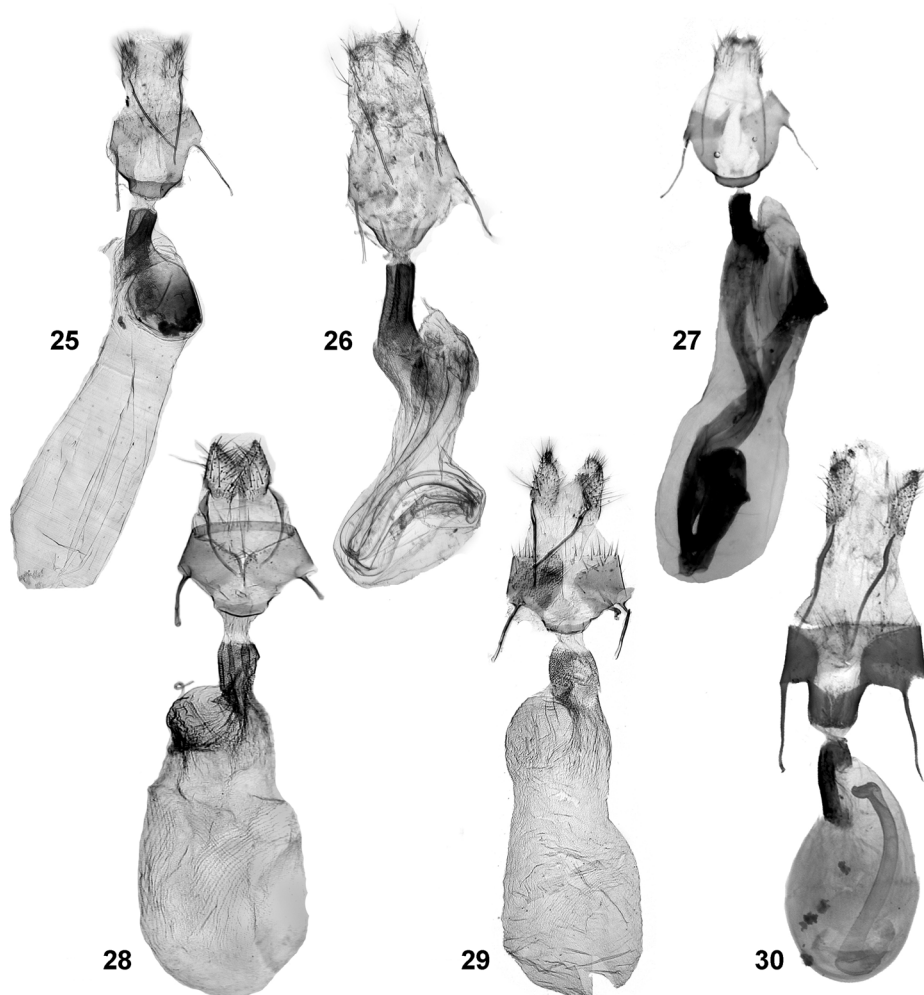


Genitalia (Figs. 21, 26): No significant differences from the *nomino*-typical form could be traced in both sexes. The genitalia structures of male and female are smaller in both sexes, in agreement with the smaller body size. See the remarks below.

Distribution: According to the present data this subspecies is restricted to Lanzarote and the smaller neighbouring islands, Graciosa und Alegranze. Authentic records are from September to early November.



Figs. 19 - 24: Male genitalia: (19) *Nyctobrya simonyi simonyi* (slide 6288, GBG/ZSM); (20) *N. simonyi simonyi* (lectotype, slide WM 420, Boursin, NHMW); (21) *N. simonyi debilis* (lectotype, slide WM 422, Boursin, NHMW); (22) *N. pinkeri* sp.n. (holotype, slide 12043, Behounek, NHMW); (23) *N. canaria* (slide 6296, GBG/ZSM); (24) *N. maderensis* (slide 8083, GBG/ZSM).



Figs. 25 - 30: Female genitalia: (25) *Nyctobrya simonyi simonyi* (slide 6286, GBG/ZSM); (26) *N. simonyi debilis* (paralectotype, NHMW), (27) *N. pinkeri* sp.n. (paratype, slide 12087, NHMW); (28) *N. canaria* (lectotype, slide 0291, A. Matov, ZISP); (29) *N. canaria* (slide 4880, GBG/ZSM); (30) *N. maderensis* (slide 6320, GBG/ZSM).

Remarks: The shape of the valva always shows a certain degree of variability. Slight differences may be caused by the strength of compression and the different position of the valva in the permanent slide. Therefore, the status of *debilis* as a separate species is unlikely.

***Nyctobrya (Nyctobrya) pinkeri* sp.n. (Figs. 10 - 12, 22, 27)**

Type material: Holotype (♂, NHMW): Gran Canaria, Cald[era] d[e] Bandama, R. Pinker leg., E.x.[19]67, Prp. 12043, Behounek. – Paratypes: 1 ♂, 1 ♀, Cald[era] d[e] Bandama, Pinker R. leg., E.x.[19]67, Prp. 12087♀, 12089♂, Behounek; gleiche Daten, coll. E. Vartian (NHMW); 3 ♂♂, Cald[era] d[e] Bandama, Pinker R. leg., E.x.[19]67 (LMNK); 2 ♂♂, Telde, Pinker R. leg. x.[19]57,

Prp. 12086♂, Behounek (NHMW); 2 ♂♂, Telde, gleiche Daten (LMNK); 1 ♂, gleicher Fundort, Pinker R. leg., xi.[19]58, coll. R. Pinker (NHMW); 1 ♂, Mas Palomas, Pinker R. leg., xi.[19]67, coll. R. Pinker (NHMW); 1 ♂, 1 ♀, St. Bartolome, Pinker R. leg., xi.[19]58, coll. R. Pinker (NHMW); 1 ♂, 2 ♀♀, gleicher Fundort, Klimesch J. leg., 8.-22.v.1965, coll. R. Pinker (NHMW); 1 ♀, same locality, Pinker R. leg., v.[19]65, coll. R. Pinker (NHMW).

Description: Wing span: 24 - 28 mm, ground colour of forewing brown to olive-brown, paler than in *N. simonyi*. Orbicular and reniform stigmata slightly darker than ground colour. Borders of stigmata and fasciae weak and narrow, occasionally fusing with ground colour. Hind wing of same colour as forewing, slightly paler at base. Antemedial fascia and discoidal spot on upper side only weakly recognizable. Females show the same pattern like the males; they are not richer in contrast.

Male genitalia (Fig. 22): Uncus similar to *N. simonyi*, long and spatulate. Valvae broad, distally narrowing, but at apex again slightly broader. Corona absent. Apical process at end of costa triangular, less elongate. Ampulla also very long, its distal half bent at a nearly right angle. Juxta trapezoid, acute below. Aedeagus like in *N. simonyi*, however, cornutus longer, more slender and ending in a narrow, acute tip.

Female genitalia (Fig. 27): Ostium slightly broader and much lower than in *N. simonyi*; ductus bursae relatively short, strongly sclerotized, transition to ostium short, thin membranous and transparent. Corpus bursae tube-shaped, lower third slightly broader, transparent, ductus seminalis from apex of corpus.

Distribution: According to the present data *N. pinkeri* sp.n. seems to be endemic in Gran Canaria. HACKER & SCHMITZ (1996: p. 177, pl. L, fig. 12) misidentified *N. pinkeri* erroneously as "*simonyi*" from Gran Canaria.

***Nyctobrya (Nyctobrya) canaria* (ALPHÉRAKY, 1890) (Figs. 13 - 16, 23, 28, 29)**

Bryophila algae var. *canaria* ALPHÉRAKY, 1890 (in ROMANOFF), Mémoires sur les Lépidoptères 5: 224, pl. 11: 5.

Type material examined: Lectotype (♀, ZISP, present designation): // white label, IX, 1887, Oratava, Teneriffa // white label, v.canaria Alph origin // white label, Cyrillic, [coll. Great Prince Nikolai Michailovich, (translated by V.S. Kononenko)], Prp. A. Matov, slide 0291 ♀.

Further examined material: Tenerife: 1 ♂, Tenerife, Guimar, Bco. de Badajoz, 700 m, 4.x.1999, leg. O. Czadek, Prp. 6296♂ (GBG/ZSM); 1 ♂, 1 ♀, Teneriffa, Los Realejos, 50 m, 24.v.1985, leg. P. Stamer, Prp. 4879♂, 4880♀ (GBG/ZSM). – Palma: 1 ♂, Palma Fuencaliente NW, El Charco, 750 m, E. Friedrich leg., 13.i.2007, Prp. 8214♂, Behounek (coll. E. Friedrich, Jena); 1 ♀, Palma, El Paso, Pina de la Virgen, 850 m, E. Friedrich leg., 14.9.2007, Prp. 8215♀, Behounek (coll. E. Friedrich, Jena).

Description: Wing span: 25 - 26 mm. Ground colour of forewing grayish brown or rather plumbeous, darker than in *N. simonyi*; pattern very similar, but clearly more irregular. Antemedial fascia double, interspace pale. Distal fascia jagged, but jags stronger than in *N. simonyi*, similar to *Oligia strigilis* (LINNAEUS, 1758). Apical spot dark, more apparent than in *N. simonyi*, where it is only slightly darker than ground colour. Discoidal spot and submarginal fascia of hind wing mostly clearly recognizable. Distal margin darker coloured than the rest of the wing. Males more uniformly coloured than females, like in *N. simonyi*, but less contrasted.

Male genitalia (Fig. 23): Uncus long, spatulate. Valvae basally relatively broad, distally strongly narrowing, at apex broader again, with a projection at ventral margin. Corona

absent. Sacculus very broad, without projection; ampulla very long and thin, surpassing costa. Juxta rhombical, dorsally narrower than in *N. simonyi* and *N. pinkeri* sp.n. Aedeagus well developed; vesica relatively short and broad, with diverticulum entirely covered by many small cornuti.

Female genitalia (Figs. 28, 29): Ostium membranous. Ductus bursae relatively short, constricted below ostium, anteriorly broader than in *N. simonyi* and *N. pinkeri*. Corpus bursae pear-shaped, ductus seminalis originating from its less pronounced apex.

Distribution: Authentic material is known so far only from Tenerife and Palma. The flight season is the same as in *N. simonyi simonyi*. Two generations can be recognized, the first one from end of May to June and the second one from end of September to October.

***Nyctobrya (Nyctobrya) maderensis* (BETHUNE-BAKER, 1891)** (Figs. 17, 18, 24, 30)

Bryophila maderensis BETHUNE-BAKER, 1891, Transaction of the Entomological Society of London, 1891: 205.

Material examined: 2 ♂♂, Madeira, 10 km S from Rosario, Encumeada loc., 1100 m, 27.-30. vii.2006, leg. Krueger & Saldaitis, Prp. 8083♂ (GBG/ZSM); 1 ♀, Madeira, Plato Paul De Serra, Estanquinhos loc., 1600 m, 1.-3.viii.2006, leg. Krueger & Saldaitis, Prp. 6320♀ (GBG/ZSM); 1 ♀, Madeira, Plato Paul De Serra, Estanquinhos loc., h-1600 m, 1.-3. 8, 2006, leg. Krueger & Saldaitis (coll. W. Speidel); 1 ♂, 1 ♀, Madeira, 10 km S. from Rosario, Encumeada loc., h-1100 m, 27.-30.7.2006, leg. Krueger & Saldaitis (coll. W. Speidel).

Description: Wing span of ♂ 25 mm, of ♀ 28 mm. Ground colour of forewing in ♂♂ like in *N. canaria*, in ♀♀ grayer, without brown admixture. Central area slightly darker, bordered by jagged transversal fasciae that also have pale borders, clearly demarcated. Orbicular and reniform stigmata dark-bordered, below orbicular stigma with additional spot that is either black-bordered or uniformly black. Hind wing paler than forewing, with slightly darker marginal area; submarginal fascia and discoidal spot recognizable.

Male genitalia (Fig. 24): Uncus very long and narrow, longer than in the other species. Valvae distally narrowing without dilatation of apex which is dorsally ending in an acute tip with long triangular dorsal projection. Sacculus and ampulla like in preceding species. Juxta spatulate, dorsally much narrower than in *N. pinkeri* and *N. simonyi*. Aedeagus well developed; vesica and cornutus almost like in *N. simonyi*, but cornutus thinner, longer and not so strongly bent.

Female genitalia (Fig. 30): Ostium large, strongly sclerotized; ductus bursae very short, constricted towards corpus bursae. Corpus bursae near entrance of ductus bursae with a strong sclerotization that is absent in the related species.

Distribution: Endemic in Madeira.

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