

# Notes on some Nordic species of *Phyllonorycter* Hübner, 1822 (Lepidoptera, Gracillariidae)

BENGT Å. BENGTSSON

Bengtsson, B.Å.: Notes on some Nordic species of *Phyllonorycter* Hübner, 1822 (Lepidoptera, Gracillariidae). [**Anteckningar om några nordiska *Phyllonorycter*-arter (Lepidoptera, Gracillariidae).**] – Entomologisk Tidskrift 131(3): 195-204. Uppsala, Sweden 2010. ISSN 0013-886x.

The status of *Phyllonorycter brevilineatella* (Benander, 1944), *P. rolandi* (Svensson, 1966) and *P. heringiella* (Grönlien, 1932) is discussed based on examination of DNA, external and genitalia characteristics. The genitalia morphology, biology and distribution of these and related species are described. The results show that *P. brevilineatella* is probably a distinct species, that *P. rolandi* and *P. hilarella* (Zetterstedt, 1839) are separate species, and that *P. salictella* (Zeller, 1846) is separated from *P. heringiella*. A lectotype of *P. brevilineatella* is designated. The holotype of *P. albidorsella* (Benander, 1944) is assessed.

*Bengt Å. Bengtsson, Lokegatan 3, S-386 93 Färjestaden, Sweden*

## Introduction

Since the description of *Lithocolletis brevilineatella* Benander, 1944 (now in the genus *Phyllonorycter*) the status of this species has been disputed. It has so far only been recognized from Sweden and even here the occurrence has been very puzzling. Only a few specimens in collections have been assigned to *brevilineatella* and often with considerable doubt. The short basal streak may be too vague a feature to separate the species e.g. from *Phyllonorycter salicicolella* (Sircom, 1848) which in general has a very long, thin streak which is bent at the tip (Fig. 2). Also the genitalia have left us in the lurch, as the differences seem to be very small or too uncertain. Thus most researchers have synonymised *brevilineatella* with *salicicolella* (e.g. De Prins & De Prins 2005) while others have expressed doubt about the rank of the taxon (e.g. Buszko 1996) or simply passed over the issue without any comment (e.g. Aarvik *et al.* 2000).

*Phyllonorycter rolandi* (Svensson, 1966), on the other hand, has rarely been questioned; though compare Kuznetsov (1981: 281) who sup-

posed *rolandi* to be a synonym of *P. viminetorum* (Stainton, 1854). However, the great similarity with specimens of *P. hilarella* (Zetterstedt, 1839) - especially with those found in the north of Sweden, sometimes together with *rolandi* - has nonetheless been a problem for the taxonomists as the only reliable external feature in *rolandi*, the dark streak in the apical fringe, usually becomes denuded in specimens not completely fresh.

The third species, *Phyllonorycter heringiella* (Grönlien, 1932), was described from Norway on the basis of information on the species written in a letter by Martin Hering, Berlin. Later studies of the original description and the type material at first indicated that *heringiella* should be synonymized with *P. salictella* (Zeller, 1846) and accordingly treated as such (e.g. Svensson *et al.* 1994, Aarvik *et al.* 2000, De Prins & De Prins 2005). As a result of further examination of the type material of *heringiella*, Svensson (1997) arrived at the conclusion that the taxon should be considered a good species. This was supported by a study of Finnish material (Laasonen & Laasonen 2000).

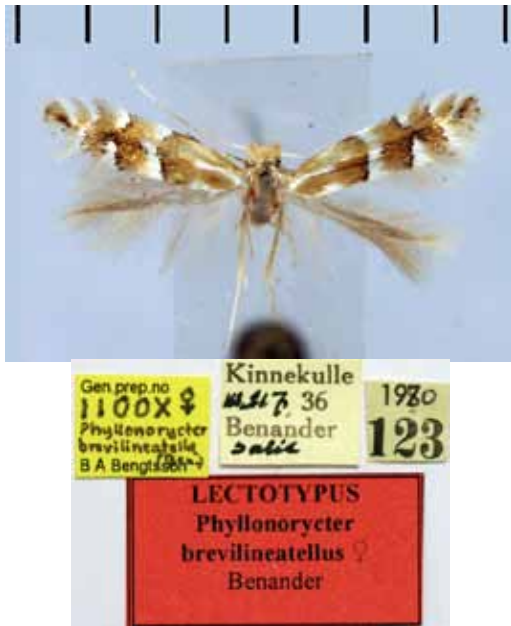


Figure 1. Lectotype and labels of *Phyllonorycter brevilineatella* (Benander, 1944).

Lektotyp och etiketter av *Phyllonorycter brevilineatella*

### Methods and material

The type material of *P. brevilineatella* and *P. rolandi* kept in the Zoological Museum at the University of Lund, and also specimens in coll. Ingvar Svensson, kept in the same museum, have been studied. One specimen, considered as *brevilineatella*, was kindly sent to me by Jan-Olov Björklund. *Salix*-feeding *Phyllonorycter* species have been reared by me from many different hosts and on the basis of several hundreds of specimens certain conclusions can be drawn concerning the host preference and polymorphy in *heringiella*.

Finally, specimens of *salictella*, *heringiella*, *hilarella* and *rolandi* were sent to Prof. Olle Pellmyr, Idaho University, for sequencing of mitochondrial DNA with COI. The result of his investigations agreed well with the results arrived at by Lopez-Vaamonde *et al.* (2003). I also sent further specimens of presumed *heringiella* and *salicicolella* for further DNA examination to Dr Lopez-Vaamonde, who was able to confirm earlier findings (Lopez-Vaamonde, pers. comm.).



Figure 2. *Phyllonorycter salicicolella* (Sircom, 1848) – SUECIA, Skåne, Hagestad, la 23.IX.2007, ex. *Salix cinerea*, leg & coll. BÅB. (Specimen no. 69058 in Table 1).

### Abbreviations used in the paper:

MZLU – Museum of Zoology, University of Lund, Sweden

BÅB – Bengt Å. Bengtsson (private collection)

### *Phyllonorycter brevilineatella* (Benander, 1944)

Original description: *Lithocolletis brevilineatella*. Published in: Sveriges Lithocolletider (Gracilariidae) – Opuscula Entomologica 9: 108-109.

Lectotype: Female (Fig. 1). [Sweden, Västergötland] Kinnekulle, kl[äckt = e.l.] 21.7.[19]36, Benander, *Salix* (white label). Genitalia (Fig. 4A-C) on slide BÅB 1100X♀, *Phyllonorycter brevilineatella* (Ben.), B.Å Bengtsson (yellow label). Lectotype hereby designated and published for the first time. In coll. MZLU.

Paralectotypes: 6 females from same site: [Sweden, Västergötland] Kinnekulle, kl[äckt = e.l.] 5.8.[19]35; 11.8.[19]35 (4 specimens); 19.7.[19]36, Benander; last paralectotype with slide “Genitalpreparat 6197E, Ingvar Svensson, *Lithocolletis brevilineatella* Ben., ♀”. All paralectotypes in coll. MZLU.

In the original description Benander mentioned eight specimens but in MZLU only seven were found, the one from 24.7.[19]36 missing. Benander also remarked that the type series was reared from *Salix cinerea*, but later he stated to Ingvar Svensson (pers. comm.) that he in fact meant *Salix aurita*. Benander separated *brevilineatella* from *hilarella* (= *spinolella* Dup.) by the short and distinct basal streak and the whole description reads as follows (translated from Swedish):

“Forewing, Fig. 3z, glossy golden yellow with silvery markings. Basal streak short, narrower and more distinct than in *spinolella*, at apex sometimes dark-edged. Fascia inwardly edged dark, in most specimens more or less distinctly in shape of two strigulae, standing more obliquely than in *spinolella*. Beyond fascia three costal strigulae and two dorsal, the innermost pair edged black inwardly. At apex a black dot and between tips of strigulae sometimes black scales. Fringes with dark cilia-line, most evident

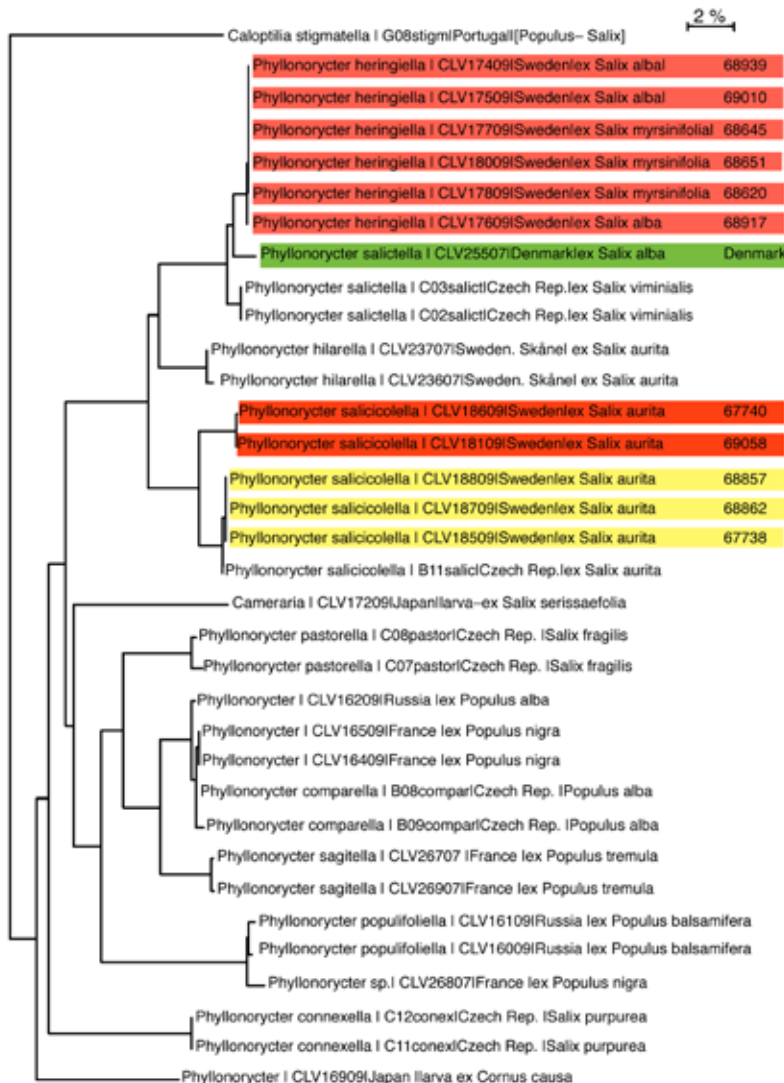


Figure 3. Phylogenetic tree showing the results of sequencing of specimens of *heringiella* / *salictella* and *salicicolella*. Specimen number from coll. BÅB to the far right (cf. Table 1).

Släktskapsträd baserat på sekvensering av DNA hos *heringiella* / *salictella* och *salicicolella*. Numren till höger indikerar exemplar i Tabell 1.

around apex. Hair on crown yellow, face and forehead glossy white. Antennae dark-ringed, tip white. Thorax with white-edged tegulae and posteriorly a white central line. Wingspan 8 mm. From larvae, feeding on *Salix cinerea* in under-side mines and collected at Kinnekulle, eight specimens hatched between 5/8 and 11/8 1935, and 19/7 and 24/7 1936. All of them were females so male genitalia have not been examined.

The species on *Salix*, nr 23-28 [species dealt with in the article] are very similar to each other. Valvae strongly asymmetrical, left one being much broader than right one and has a stout, curved bristle at valva tip. Right valva has a larger bristle near tip and near base one or two such bristles. Saccus has a shorter or longer process. In *salictella* and *viminiella* (Sircom, 1848) that process is very long, while in *viminetorum* it is extremely short. Amongst the rest of the species *spinoella* has two bristles near base of right valva, *dubitella*, *salicicolella* and *grönlieni* only one. Petersen suggests that the great similarity in the genitalia of these *Salix*-feeding species indicates a more recent divergence.”

In recent years Ingvar Svensson and Jan-Olof Björklund (pers. comm.) have reared specimens from *Salix aurita* judged to belong to *brevilineatella*, most of them females. Efforts have been made to find males as the type series only con-

sisted of females. Specimens reared from *Salix aurita* – externally virtually identical with *salicicolella* (Fig. 2) which feed on various hairy *Salix* species – have been assumed to belong to *brevilineatella* (Svensson pers. comm.). One male specimen was sent to Carlos Lopez-Vaamonde who, together with his co-writers, used nuclear 28S rDNA to estimate the phylogeny of 77 *Phyllonorycter* species (Lopez-Vaamonde *et al.* 2003). The result surprisingly pointed to a specific difference from *salicicolella* (Fig. 3 & Table 1). Lopez-Vaamonde, using mitochondrial Cytb and nuclear 28S rDNA, arrived at the conclusion that *salicicolella* and *brevilineatella* “are indeed good species”, communicated in a letter to Svensson already in 2000. Thus, to date, there is no reason to synonymize *brevilineatella* with *salicicolella*.

Svensson (1997) gave a survey of the Swedish species of *Phyllonorycter* feeding on *Salix*. He assumed the rounded sterigma in the female genitalia of *brevilineatella* to be more or less scobinate, not weakly and longitudinally folded as in *salicicolella*. I have not found any reliable character in the female genitalia clearly separating the two species but in the few dissected specimens the sterigma of *brevilineatella* normally seems to lack both scobination and folds (Fig. 4b & 5), while *salicicolella* in general

Table 1. Data of specimens sequenced by Lopez-Vaamonde.

Data för DNA-undersökta exemplar av Lopez-Vaamonde.

Process ID	SampleID+ Field Num	Cat. Num coll.BÅB	COI-5P		Identification	Host plant	Site	Latitude	Longit.	Elevation
			Seq. Length	Coll. Date						
GRACI478-09	CLV17309	69008	0	07-10-03	<i>P. heringiella</i>	<i>Salix alba</i>	Öl, Möllstorp	56,6680	16,5010	10
GRACI479-09	CLV17409	68939	658	07-10-03	<i>P. heringiella</i>	<i>S. alba</i>	Öl, Möllstorp	56,6680	16,5010	10
GRACI480-09	CLV17509	69010	658	07-10-03	<i>P. heringiella</i>	<i>S. alba</i>	Öl, Möllstorp	56,6680	16,5010	10
GRACI481-09	CLV17609	68917	658	07-09-20	<i>P. heringiella</i>	<i>S. alba</i>	Öl, Möllstorp	56,6680	16,5010	10
GRACI482-09	CLV17709	68645	658	07-10-01	<i>P. heringiella</i>	<i>S. myrsinifolia</i>	Öl, Åkerby	56,7060	16,6360	25
GRACI483-09	CLV17809	68620	658	07-10-01	<i>P. heringiella</i>	<i>S. myrsinifolia</i>	Öl, Åkerby	56,7060	16,6360	25
GRACI484-09	CLV17909	63292	0	04-10-07	<i>P. heringiella</i>	<i>S. myrsinifolia</i>	Öl, Kastlösa	56,4380	16,4810	30
GRACI485-09	CLV18009	68651	658	07-10-01	<i>P. heringiella</i>	<i>S. myrsinifolia</i>	Öl, Åkerby	56,7060	16,6360	25
GRACI486-09	CLV18109	69058	658	07-09-23	<i>P. salicicolella</i>	<i>S. cinerea</i>	Sk, Hagestad	55,3870	14,1470	10
GRACI487-09	CLV18209	69042	0	07-09-23	<i>P. salicicolella</i>	<i>S. cinerea</i>	Sk, Hagestad	55,3870	14,1470	10
GRACI488-09	CLV18309	67685	0	06-10-05	<i>P. salicicolella</i>	<i>S. aurita</i>	Bl, Jämshög	56,3100	14,4300	90
GRACI489-09	CLV18409	67686	0	06-10-05	<i>P. salicicolella</i>	<i>S. aurita</i>	Bl, Jämshög	56,3100	14,4300	90
GRACI490-09	CLV18509	67738	598	06-10-05	<i>P. salicicolella</i>	<i>S. aurita</i>	Bl, Jämshög	56,3100	14,4300	90
GRACI491-09	CLV18609	67740	658	06-10-05	<i>P. salicicolella</i>	<i>S. aurita</i>	Bl, Jämshög	56,3100	14,4300	90
GRACI492-09	CLV18709	68862	658	07-07-05	<i>P. salicicolella</i>	<i>S. aurita</i>	Sm, Bäckebo	56,9270	16,0260	90
GRACI493-09	CLV18809	68857	658	07-07-05	<i>P. salicicolella</i>	<i>S. aurita</i>	Sm, Bäckebo	56,9270	16,0260	90

exhibits folds (Fig. 6). The number of convolutions of ductus spermathecae is 24-27 (n=3) for *brevilineatella*, 23-28 (n=6) for *salicicolella*. The lengths and proportions of the apophyses are the same for both species.

The distribution of *brevilineatella* is poorly known. To date, the species is only reported from Sweden (Sk, Bl, Ha, Sm, Vg, Ds, Sö, Up) but should have a wider distribution area. It occurs in small marshes in mixed pine forests where *Salix aurita* grows. Further data on *brevilineatella* will be published in Nationalnyckeln (The Encyclopedia of the Swedish Flora and Fauna) (in prep.) (<http://www.nationalnyckeln.se/bokverketsvolym/er/framtida/index.asp>).

#### ***Phyllonorycter rolandi* (Svensson, 1966)**

Original description: *Lithocolletis rolandi*. Published in: New and confused species of Microlepidoptera. – Opuscula Entomologica 31(3): 195-206. Type material in MZLU.

*Phyllonorycter rolandi* (Fig. 8) is a northern species mainly distributed in the subalpine region. The total distribution area embraces so far only Sweden [Dr, Hr, Nb, Ly and To] (Svensson *et al.*, 1994), Finland [Ks, Lkoc, Lkor, Le, Li] (<http://www.fmmh.helsinki.fi/elainmuseo/hyonteiset/perhoset/1.htm>) and Norway [STI] (Aarvik *et al.*, 2000). The moth has been reared from *Salix lapponum* and might also feed on similar *Salix* species with hairy leaves such as *S. arbuscula* and *S. glauca*. It occurs locally and sometimes together with *P. hilarella*.

*P. rolandi* is easy to confuse with large specimens of *P. hilarella* (Fig. 9). In his original description Svensson (1966) pointed out the pale opposite spots at each side of the tip of the thin and slightly bent basal streak as a separating feature from *hilarella* (with a claviform basal streak) but did not mention the most trustworthy characteristic, viz. the dark strigula in apical cilia. This was done in a later article (Svensson, 1997: 33). As some specimens of *rolandi* undeniably resemble *hilarella* in having a very slight indication of pale opposite spots inside the first pair of strigulae or may even lack those spots, and the basal streak may sometimes appear claviform, and as the fringes are often worn off in net-collected specimens, problems usually arise in determining the specimens.

In order ultimately to settle the possible doubts about the two species, one specimen each of *hilarella* and *rolandi* were sent to Olle Pellmyr, Idaho University, who sequenced the DNA with COI (730 bases). The difference in the sequences was 2.7 %, which indicated two different species (Pellmyr, pers. comm.) (Fig. 16). The differences in their male genitalia are very small and uncertain. Svensson (1997) states the male genitalia to be almost impossible to separate from *hilarella* and *viminetorum*. He also presented a photograph of the genitalia of the male holotype (Svensson 1997: Fig. 24). The female genitalia of *rolandi* (Fig. 7) differ from *hilarella* in the apophyses posteriores being shorter and having a more or less evident bump near middle (see also Svensson 1997: Fig. 25 & 26)).

#### ***Phyllonorycter heringiella* (Grönlien, 1932).**

Original description: *Lithocolletis heringiella*. Published in: A new Lithocolletid. – Norsk Entomologisk Tidsskrift 1932(3): 115-116. Type material in the Museum of Zoology at the University of Bergen, Norway.

The description of *P. heringiella* was based on seven specimens that hatched from underside mines on *Salix aurita* (probably). In his article on the Swedish *Salix*-feeding *Phyllonorycter* species Svensson (1997) mentioned three type specimens. Maybe four specimens remained in Germany in Martin Hering's collection, as he assisted with the description of *heringiella*.

When Svensson (1966), in the description of *P. rolandi*, compared this species with several closely related species he mentioned one worn specimen of *heringiella* (in the Zoological Museum of Bergen) that resembled *salictella*. There is uncertainty as to the host plant as Grönlien (1932) had put a label with the name *Salix aurita* to one of the type specimens, which could be due to wrong determination (Svensson, pers. comm.). Another peculiarity in the original description is the erroneous illustration of the genitalia depicting those of *P. cerasinella* (Reutti, 1853), a *Genista*-feeding species from Central Europe. A possible explanation is that Hering had in some way mixed up two slides, one of which belonged to *cerasinella*.

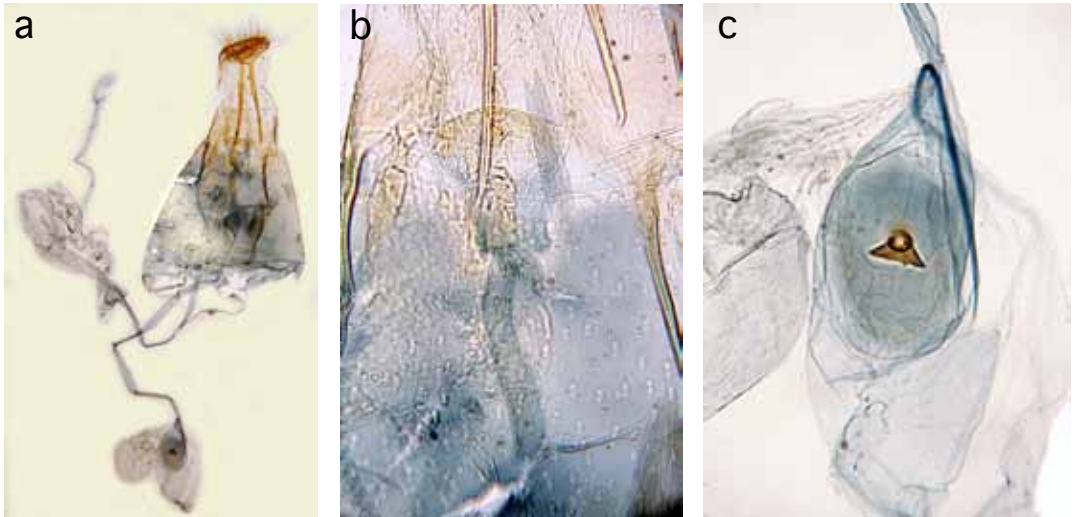


Figure 4. – a) Female genitalia of the lectotype of *Phyllonorycter brevilineatella*. – b) Close-up picture of rounded extension (sterigma) under ostium and ductus bursae. – c) Corpus bursae with signum.

– a) Hongenitalierna hos lectotypen av *Phyllonorycter brevilineatella*. – b) Närbild av den runda utbuktningen (sterigma) under ostium och ductus bursae. – c) Corpus bursae med signum.

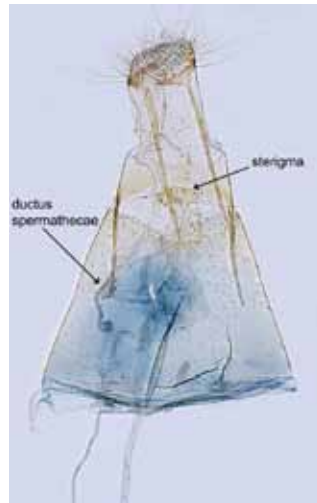


Figure 5. Female genitalia of *Phyllonorycter brevilineatella* (Benaender, 1944) – SUECIA, Småland, 2 km W Rugstorp, la 9.X.2006, ex *Salix aurita*, leg & coll. BÅB. Slide no. BÅB 5472.

Hongenitalierna hos *Phyllonorycter brevilineatella*.

Figure 6. Female genitalia of *Phyllonorycter salicicolella* (Sircom, 1848) – SUECIA, SUECIA, Blekinge, Jämshög, Vångagölet, la 5.X.2006, ex *Salix aurita*, leg & coll. BÅB. Slide no. BÅB 5476.

Hongenitalierna hos *Phyllonorycter alicicolella*

Figure 7. Female genitalia of *Phyllonorycter rolandi* (Svensson, 1966). – SUECIA, Torne lappmark, Karesuando, 7.VII.1992, leg & coll. BÅB. Gen. prep. BÅB 3721.

Hongenitalierna hos *Phyllonorycter rolandi*



Figure 8. *Phyllonorycter rolandi* (Svensson, 1966) – SUECIA, Torne lappmark, Karesuando, 7.VII.1992, leg. & coll. BÅB. Gen. prep. BÅB 3721 female.



Figure 9. *Phyllonorycter hilarella* (Zetterstedt, 1839) – SUECIA, Öl. Vedborm, la 23.X.1982, ex. *Salix cinerea*, leg. & coll. BÅB.



Figure 10. *Phyllonorycter salictella* (Zeller, 1846) – SUECIA, Sk., Åhus, Furuboda, la 29.IX.2006, ex. *Salix alba*, leg. & coll. BÅB.



Figure 11. Different forms of *Phyllonorycter heringiella* (Grönlien, 1932). – See Table 1 for specimen data.

Olika former av *Phyllonorycter heringiella* (Grönlien, 1932). – Se Table 1 för insamlingsdata.



Figure 12. Northern form of *Phyllonorycter heringiella* (Grönlien, 1932) – SUECIA, Nb., Övertorneå, 10.VII.1992, leg. & coll. BÅB.



Figure 13. Form of *Phyllonorycter heringiella* (Grönlien, 1932) – DANIA, Børsmose, la 15.X.1988, ex. *Salix repens*, leg. K. Gregersen, coll. BÅB.



Figure 14. Male genitalia of the holotype of *Phyllonorycter albidorsella* (Benander, 1944).

Hangenitalierna hos holotypen av *Phyllonorycter albidorsella* (Benander, 1944).

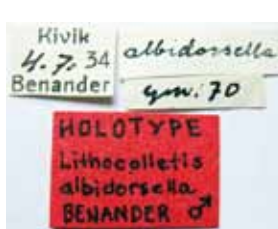


Figure 15. Holotype and labels of *Phyllonorycter albidorsella* (Benander, 1944).

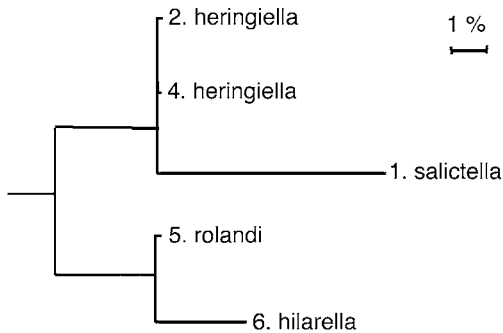


Figure 16. Tentative phylogenetic tree showing the DNA sequencing by Pellmyr.

Preliminärt släktskapsträd baserat på DNA-sekvensering av Pellmyr.

*P. heringiella* was raised to a good species by Svensson (1997) as he had found two forms, one without white costal strigulae and one form with distinct costal strigulae outside the first pair of strigulae. In a new analysis he found Grönlien's species fitting well with the last mentioned form. The hosts of *salictella* in Sweden are *Salix alba* and *S. viminalis*, sometimes *S. repens* var. *argentea* and a few other glabrous *Salix* spp., while those of *heringiella* are a great variety of *Salix* species. On Öland I have reared a large number of *heringiella* primarily from *S. myrsinifolia* and *S. alba*, but also from *S. fragilis*, *S. cinerea* and *S. caprea*, though in many fewer instances. From Denmark findings are recorded from *S. repens* with reared moths deviating in having very sharp markings (Gregersen etc., pers. comm.). Whether this taxon really is *P. heringiella* is not yet confirmed. Björklund (pers. comm.) has obtained specimens from *Salix triandra* and Svensson has reported rearing specimens from *S. nigricans* (Lopez-Vaamonde, pers. comm.).

For a long time *heringiella* was considered a synonym of *salictella*. After the re-elevation of *heringiella* to species rank there has been some debate on the justification for this. The interpretation by Svensson was supported by Laasonen & Laasonen (2000) who also listed the foodplants of *heringiella*. Another taxon, *P. viminiella* (Sircom, 1848) (from Great Britain),

was also mentioned but not considered. This species occurs in the west and southwest of Europe but the distribution area is very uncertain due to confusion with *salictella*. Based on the DNA investigations by Lopez-Vaamonde *et al.* (2003) and the experiences of the investigation of *salictella* and *heringiella*, I assume *viminiella* to be a good species as well.

With the intention of getting a definite answer to the rank of *heringiella* some specimens were sent to Olle Pellmyr in 2007 for DNA analysis in which he used 730 base pairs with COI. His result (Fig. 16) was that the species was well separated from *salictella* with 6.77 % (Pellmyr, pers. comm.). Thus there is no doubt about the rank of the two species.

By rearing, I have found that *salictella* is very constant in external appearance (Fig. 10). I have found no specimen with white costal strigulae outside the first pair. On the other hand, *heringiella* also occurs with the same form, i.e. no costal strigulae outside first pair, but also in all kinds of forms to the most distinctly marked ones with sharp, white strigulae (Fig. 11). Another complication is the occurrence in northern Sweden where specimens tend to have the forewing with a more rounded apex (Fig. 12). There are only old specimens of that form in the collections so a DNA check has been difficult to carry out so far. Also, the conspicuously marked Danish specimens (Fig. 13) should have their DNA tested but fresh material has not been available.

The genitalia of *salictella* and *heringiella* are impossible to distinguish. As also the external appearances of the two sibling species are frequently almost the same, the problem remains in separating the species without sequencing their DNA.

***Phyllonorycter albidorsella* (Benander, 1944).** Original description: *Lithocolletis albidorsella*. Published in: Sveriges Lithocolletider (Gracilariidae) – Opuscula Entomologica 9: 102-103, figs. 3n, 5b.

Junior subjective synonym with *Phyllonorycter tenerella* (Joannis, 1915).

The description of *P. albidorsella* was based on one male specimen with the external appearance (Fig. 15) slightly deviating from the normal of *Phyllonorycter tenerella* (Joannis, 1915)



but the genitalia (Fig. 14), published in the same article (p. 106), are identical with those of *tenerella*. The identity of *albidorsella* was officially established for the first time by Krogerus *et al.*: Cat. Lep. Fenn. Scand. 1971: 24.

Holotype specimen labelled: "Kivik 4.7.34"; "albidorsella"; "gen. 70"; "HOLOTYPE *Lithocolletis albidorsella* BENANDER ♂". In coll. MZLU.

### Acknowledgements

My sincere thanks to Carlos Lopez-Vaamonde, Institute National de la Recherche Agronomique (INRA), Orleans, France and to Olle Pellmyr, Idaho University, USA, who executed DNA analyses of the critical species complexes dealt with in this paper. I am grateful to Ingvar Svensson, Österslöv, Sweden who provided much information and suggested several improvements to the manuscript. I am also grateful to Roy Danielsson, curator at MZLU, who generously procured loan of the type series of *Phyllonorycter brevilineatella* and the type of *P. albidorsella*. My thanks are due to Keld Gregersen, Sorø, Denmark, Jan-Olof Björklund, Hallstavik, Sweden, and Roland Johansson, Växjö for stimulating discussions, pointing out relevant literature, gift of specimens and/or loan of material. I thank an anonymous referee for very constructive suggestions. Finally I want to convey my sincere thanks to John Langmaid, Southsea, U.K., for correcting the English.

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### Sammanfattning

Flera artkomplex bland guldmalarna (släktet *Phyllonorycter* bland småfjärilarna) har visat sig svåra att skilja åt. Ett exempel är arterna som lever på viden och för dessa har jag i denna artikel undersökt var gränsen mellan olika arter går. DNA-undersökningar, studier av biologi, genitalmorfologi och habitus har använts för analysen. Det första artparet som jag har undersökt är *salicicolella* och *brevilineatella*. Den senare arten beskrevs år 1944 under namnet *Lithocolletis brevilineatella* av Per Benander på grundval av 8 honor som kläcktes från undersidiga minor på gråvide *Salix cinerea*. Vid ett senare samtal med Ingvar Svensson medgav Benander, att han nog hade tagit miste på bindvide *Salix aurita*. Efter Benanders upptäckt har bara ett fåtal exemplar kommit att bestämmas till *brevilineatella* och för att få svar på artsrätten skickade Ingvar Svensson ett exemplar till Carlos Lopez-Vaamonde, som vid en DNA-undersökning fann en liten skillnad mellan *brevilineatella* och *salicicolella*, som den stod närmast. Det finns därför för närvarande inget omedelbart skäl att synonymisera *brevilineatella* med någon annan art då inga hållbara argument för detta finns.

En annan art som möjligen kunde ifrågasättas har varit *Phyllonorycter rolandi*, som närmast kan förväxlas med *P. hilarella*. Denna

sistnämnda art förekommer allmänt över hela Sverige men med särskilt stora exemplar i nordligaste Sverige och t.o.m. på samma lokaler som *rolandi*. Ett exemplar av *rolandi* och flera av *hilarella* skickades till Olle Pellmyr vid Idaho University. Han kunde konstatera en skillnad på 2,7 % i DNA vilket ganska klart indikerar två skilda arter. Eftersom det också finns skillnader i hongenitalierna (bakre apofyserna hos *hilarella* är tydligt längre och saknar en utvidgning på mitten) kan artsstatusen hos *rolandi* sägas vara säkert fastställd.

Det tredje problemet kunde också lösas genom DNA-undersökning av Olle Pellmyr och Lopez-Vaamonde. Guldmalen *Phyllonorycter heringiella* (Grönlien, 1932) synonymiserades under 1960-talet med *salictella* men antogs senare (Svensson, 1997) kunna vara skild från denna art. Flertalet taxonomer antog att *heringiella* var synonym med *salictella*, men i Sverige har misstanken om att det verkligen är två arter hållit sig kvar. Då kläckningar av de

båda arterna ändå gav olika besked och arterna visade sig i hela skalan av morfer, skickades material till Pellmyr som klart kunde visa på stora genetiska skillnader (6,7 %). Även dessa arter var alltså klart skilda. *P. heringiella* varierar kraftigt och kan många gånger ha samma teckning i framvingen som *salictella*, dvs. inga vita framkantshakar utanför det innersta hakparet. *P. heringiella* å andra sidan har vanligen gulaktiga till vita hakar utanför första hakparet, vilket *salictella* aldrig har. *P. salictella* lever i Sverige uppenbarligen bara på vitpil och korgvide, medan *heringiella* kan leva på många skilda viden: krypvide, svartvide, knäckepil, gråvide och t.o.m. sälg. I norra Sverige finns vid sidan av sydligare *heringiella* en form med trubbigare framvinge och i Danmark uppträder på Jylland och norra Själland dessutom en skarpt tecknad form av *heringiella*, som kan vara ytterligare en art. Det finns alltså en hel del kvar att utreda bland guldmalarna som lever på viden.

## Tack för 15000 distribuerade ET-häften, Niklas

Det häfte som du nu håller i handen är det sista som distribueras av Niklas Jönsson. Niklas tyckte det började bli lite väl hög arbetsbelastning att hinna med detta ovanpå en växande familj och annat vanligt jobb, så det var dags för någon annan att ta över. Lösningen blir att redaktören Mats Jonsell och kassören Östen Gardfjäll gemensamt sköter distributionen från 2011.

Det nya prenumerationskontoret får en betydligt enklare start på sitt arbete än vad Niklas fick 2004. Under de sex år som Niklas har skött detta har distributionen strukturerats betydligt och tillsammans med Östen Gardfjäll har tydligare rutiner för inbetalningarnas hanterande utarbetats. Den främsta stötestenen har varit att hantera betalningarna från de utländska prenumeranterna eftersom detta med valutor och konton mm är svårt att få smidigt. Nu, med betalningar på internet, IBAN-nummer och BIC-koder så hoppas vi det ska flyta bättre till både distributörers och prenumeranters glädje.

Alla vi som jobbar med ET tackar Niklas för ett trevligt och bra samarbete, och för de to-

talt 20 nummer, eller ca 15000 häften, eller ca 985600 sidor med ET-läsning, som hamnat hos rätt adressater.

*SEF-styrelsen och ET-red*



Avgående prenumerationsansvarig Niklas Jönsson tackas för sina insatser. Här fotograferad tillsammans med sonen Vidar vid entomologmötet i Blekinge.