

## Notes on the *argyrana* Group of the Genus *Pammene* (Lep., Tortricidae).

By

Niels L. Wolff

Zoological Museum, Copenhagen.

An attempt, commenced in 1956, to identify some doubtful Danish moths belonging to the genus *Pammene* Hübner, 1825 disclosed that certain taxonomic problems within this genus were still open to question. I soon realized that it would be impossible for me to attach the correct name to some of the species without including material from abroad, undertaking a critical study of the literary sources, and getting knowledge of the structure of the genitalia of type material of the species involved.

Thanks to the generous help rendered by Mr. J. D. Bradley (British Museum, Natural History) in London, (†) Professor E. M. Hering (Zoologisches Museum der Universität) in Berlin, and Dr. Pierre Viette (Muséum National d'Histoire Naturelle) in Paris I got the opportunity to check the identity of the dubious species by comparison with existing type material preserved in the museums mentioned. I am also much indebted to Dr. P. Benander (Höör, Sweden), Dr. H. Bruun (Åbo, Finland), Dr. W. Hackman (Helsingfors, Finland), Mr. E. Pyndt (Saxkøbing, Denmark), and Mr. I. Svensson (Österslöv, Sweden) for loan of material, as well as to Dr. A. Diakonoff (Leiden, Holland) for valuable information.

All the photographs except fig. 38 have been taken by Mr. H. V. Christensen (Zoological Museum, Copenhagen); fig. 38 has been supplied by Mr. P. Kinck (Copenhagen), whose kind assistance I greatly appreciate. The illustrations in the text have been drawn by the author, directly from the slides, with the exception of figs. 4, 11, 14, and of fig. 25, which have been drawn after sketches received from Mr. J. D. Bradley, and Dr. P. Viette, respectively.

My revision covered all Danish (and some foreign) species, but although interesting facts have been elucidated concerning other species, the present paper deals only with the *Pammene argyrana* Hübner group. However, the inclusion of *Pammene amygdalana* Duponchel, not belonging to the group, has proved necessary because all species of the group (exclusive of *argyrana*) have been treated in Danish literature under this name.

Although superficially similar, the four species forming the *argyrana* group are in fact well defined and easily recognizable by means of the genitalia. However, considerable confusion as to their identity still exists in the literature, and their treatment even in the most recent papers is far from elucidatory, rather serving to increase the confusion. Thus, the publication of my results may prove useful.

### 1. *Pammene argyrana* Hübner, 1796/99.

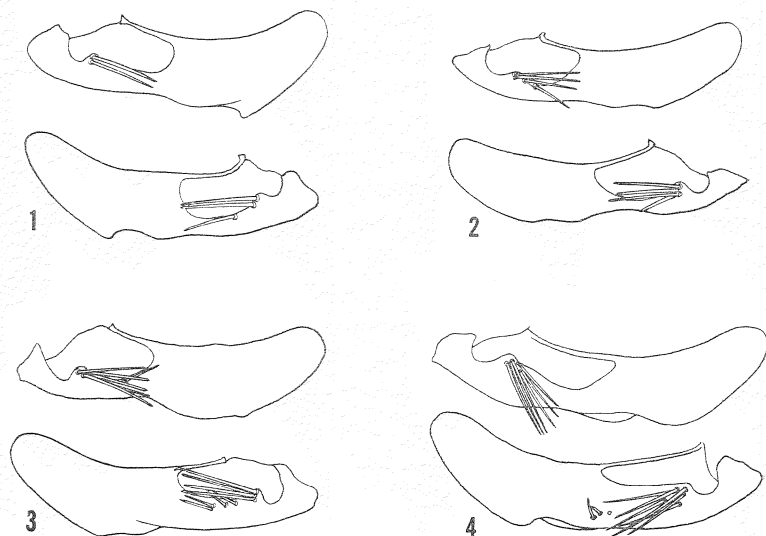
This species, first figured by Hübner (1796/99, pl. 8 fig. 46) has contributed to an extreme series of synonyms. As *argyrana* ought to be easily recognizable by means of two blackish areas (a smaller at the apex and a larger at tornus) on the hindwing of the male (see fig. 30), and as most of the synonyms are now merely of historical interest, only a few cases of taxonomic puzzle regarding this species need to be mentioned below.

In the preface of his fundamental work on the palaearctic Tortricidae, Obraztsov (1954—67) asserts as his standpoint that the word "Tortrices" used as a title by Hübner on the top of his Tortricidae plates does not represent a real genus name but a higher unit ("subordo") and consequently that Hübner's names of the species in question — although used without objection for more than 150 years — had to be suppressed as being "non-binomial". This procedure has been followed-up by some authors dealing with the genus *Acleris* Hübner and has caused severe nomenclatorial problems for the practical worker, e.g. by its transference of names from one species to another. When treating the Norwegian *Acleris* species, Opheim (1964) thus had to give a complete translation of the names used by him as compared with those previously used.

In his monograph when Obraztsov (1960) arrived at the genus *Pammene* he fortunately gave up this claim. Although *P. argyrana* is also illustrated by Hübner in a "non-binominal" plate, and

although Obraztsov mentions *Tortrix atomargana* Haworth as being the first binominal name of the species, he retains the name *argyrana* Hübner, adding: »Da der Name *argyrana* sich in der Literatur fest eingebürgert hat (und es noch nicht allgemein anerkannt ist, dass die Hübner'sche »Samml. eur. Schm., Tortr.« eine nicht binäre Publikation darstellt), finde ich es als unzuweckmässig eine Namensänderung der in Frage stehenden Art zu unternehmen«.

Characteristic of the genus *Pammene* is the presence in the male of a pair of long pencils of transparent hair-scales usually concealed under the basal edges of the last abdominal segments. These tufts are stated by Kennel (1921, p. 689—90) and Benander (1950, p. 160—161) to be situated on the 6th and 7th tergites as well; by Pierce & Metcalfe (1922, p. 88) — who consider this character so important that they restrict the genus *Pammene* to comprise exclusively those species exhibiting this character ("This genus may be distinguished from all others by the presence of a curious formation of scales at the base of the 6th tergite") — to be only on tergite 6, and by Hannemann (1961, p. 101) »auf den



Part of male genitalia, valvae ( $\times 50$ ) of *Pammene argyrana*. Fig. 1: Dania, prep. NLW 2124. Fig. 2: Dania, prep. NLW 2122. Fig. 3: Dania, prep. NLW 2095. Fig. 4: From body glued on Haworth's holotype of *Tortrix* (*Epiblema*) *trigeminana*, prep. BMNH 4605.

letzten Segmenten«. I have found them present on tergite 6 (see fig. 24) in all species examined and in some species — including *argyrana* — also on tergite 7 (see fig. 9).

The genitalia in both sexes of *argyrana* are illustrated by e.g. Pierce & Metcalfe (1922, pl. 31), and the valva is figured by Benander (1950, fig. 14 y). The base of the valva is deeply excavated and set with a number (2—9) of setae, an important character. As appears from figs. 1—4, the number of setae on each of the valvae is not always equal, and some of the smaller spines are sometimes placed somewhat apart from the others. The valva of *argyrana* illustrated by van Deurs (1956, fig. 36 a) is in this respect somewhat misleadingly drawn, showing no setae at all. The genitalia of *argyrana* figured by Hannemann (1961, fig. 197) instead belong to *gallicolana* Lienig & Zeller. The aedeagus contains cornuti, about 8—12 fixed; 4 deciduous. The structure of the female genitalia is shown in figs. 16—17. The most important character within the group is the shape of the genital plate, which is different in each species.

Although it has finally been established that the name *costipunctana* Haworth is not at all associated with any of the species within the *argyrana* group, or even within the genus *Pammene*, a few remarks about its bewildering synonymy will be required. In Danish literature the name *costipunctana* was introduced by Bang-Haas (1881, p. 196). Disregarding the priority, Larsen (1916, p. 133) used the name *Pamene*<sup>1)</sup> *gallicolana* Z. (1846) with *costipunctana* Hw. (1811) as a synonym for this species which now has proved to be composed of three distinct taxa (see later). The name *costipunctana* also seems to be used for *gallicolana* by e.g. v. Peyerimhoff (1872, p. 12—13) and other continental authors.

British authors, however, do not follow this synonymy concerning *Pammene costipunctana*. Stephens (1834, p. 95) thus placed the species in his new genus *Spilonota* (chiefly containing species belonging to the genera *Notocelia* Hübner and *Epiblema* Hübner), and Ragonot (1894, p. 219) stated: "M. Barrett dit que ce n'est pas la même espèce que celle décrite par Zeller sous le nom de *gallicolana*" (a name which Ragonot considered a junior synonym of *albuginana* Guenée). In his handbook, Meyrick (1895, p. 495) mentioned that *costipunctana* Hw. might be an aberration of an *Epiblema* species, adding that the only existing old specimen

<sup>1)</sup> Larsen, like e.g. Rebel, is using the incorrect spelling *Pamene*.

was too doubtful to admit of quotation. In his revised handbook (1928, p. 556) he treated *costipunctana* as a doubtful synonym of *Eucosma trigeminana* Stephens, 1834 and finally, Kloet & Hincks (1945, p. 124) installed *trigeminana* as a junior synonym of *Eucosma costipunctana* Haworth.

*Tortrix costipunctana* was described by Haworth (1811, p. 443) from a unique specimen from Norfolk, which via coll. Stephens is included in the British Museum collection. As the genitalia had not been studied I applied in 1956 to Mr. Bradley, who promptly sent me the sketch of the genitalia of the holotype, reproduced in fig. 4. These proved to be identical with those of *argyrana*, a most surprising solution as nobody would suspect that *Pammene argyrana* could be taken for an *Eucosma* (*Epiblema*).

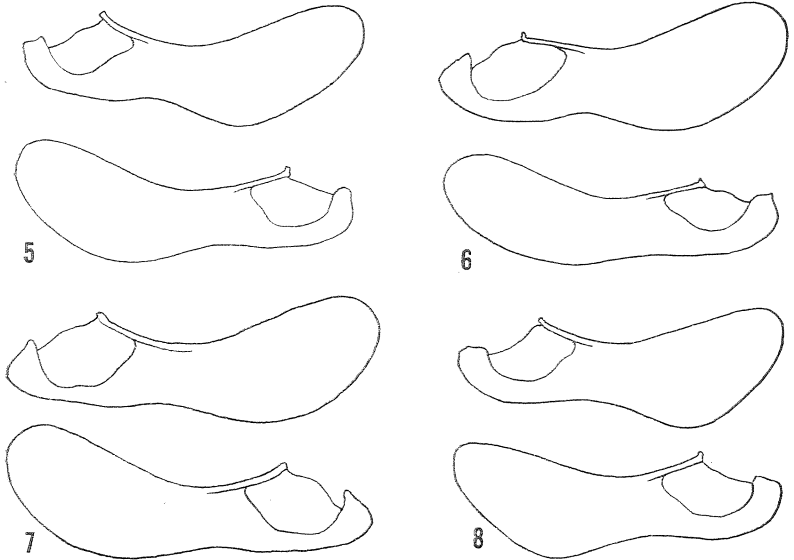
Recently Mr. Bradley has critically re-examined the moth and states that it does belong to *Epiblema trigeminana*, and that in the course of time the specimen must have lost its abdomen and afterwards have got a new body (of *argyrana*!) glued on, hence the discrepancy. *Eucosma trigeminana* thus is a junior synonym of *costipunctana* as stated by Kloet & Hincks in contradistinction to Bradley (1959, p. 72). The name *costipunctana* finally disappears from the genus *Pammene*.

In this connection I may parenthetically add that my examination in 1957 of the holotype of *Paedisca ravulana*, which was figured and described by Herrich-Schäffer (1847, pl. 20 fig. 143; 1851, p. 241) and kindly placed at my disposal by Professor E. M. Hering (Berlin), proved that even this species is conspecific with *trigeminana* and thus also becomes a junior synonym of *costipunctana* (syn. nov.). On the other hand, "*ravulana* H-S." as treated by Obraztsov (1951, p. 321—24) is a *Pammene*, most likely *clanculana* Tengström, 1869.

## 2. *Pammene albuginana* Guenée, 1845.

The majority of the Danish material treated by Larsen (1916, p. 133; 1927, p. 64) in his catalogue of Danish Microlepidoptera as *Pamene gallicolana* Z. = *costipunctana* Hw., and by van Deurs (1956, p. 274—75) as *Pammene amygdalana* Dup. (*gallicolana* Z.), proved by dissection to exhibit male genitalia apparently agreeing with those described and illustrated by Pierce & Metcalfe (1922, p. 90, pl. 31) as *Pammene albuginana* Guenée.

On my request, Mr. J. D. Bradley kindly compared a series



Part of male genitalia, valvae ( $\times 50$ ) of *Pammene albuginana*. Fig. 5 : Dania, prep. NLW 2119. Fig. 6 : Dania, prep. NLW 2140 (same specimen as figured in fig. 27). Fig. 7 : Neotype, prep. Mus. Helsingfors 7279 (same specimen as figured in fig. 32). Fig. 8 : Dania, prep. NLW 1258.

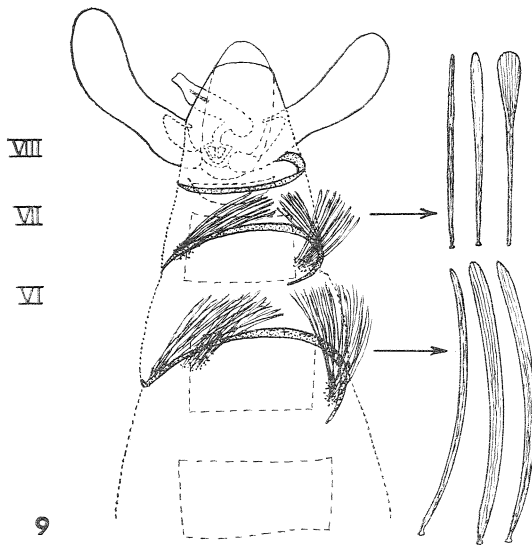
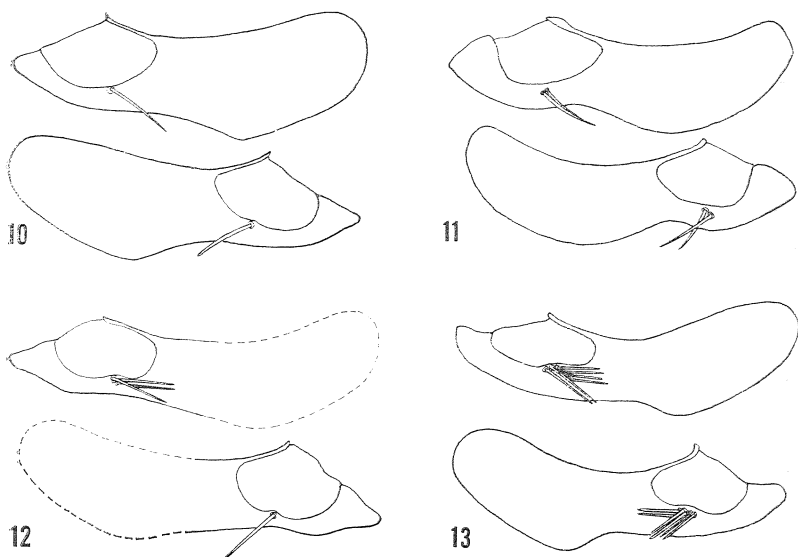
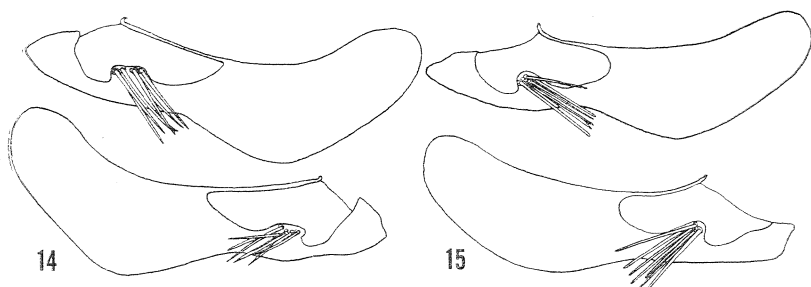


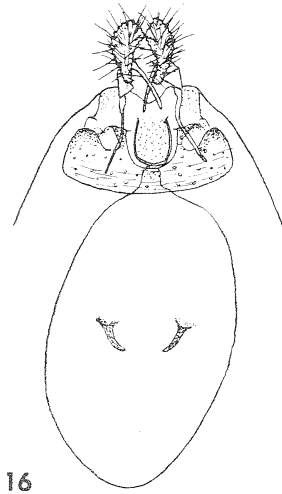
Fig. 9 : Abdomen of *Pammene albuginana* male ( $\times 30$ ), Dania, prep. NLW 2140.



Part of male genitalia, valvae ( $\times 50$ ) of *Pammene gallicolana*.  
 Fig. 10 : Dania, prep. NLW 1160 (same specimen as figured in fig. 28).  
 Fig. 11 : Holotype, prep. BMNH 4370. Fig. 12 : Dania, prep. NLW 2081 (same specimen as figured in fig. 37). Fig. 13 : Dania, prep. NLW 2117.

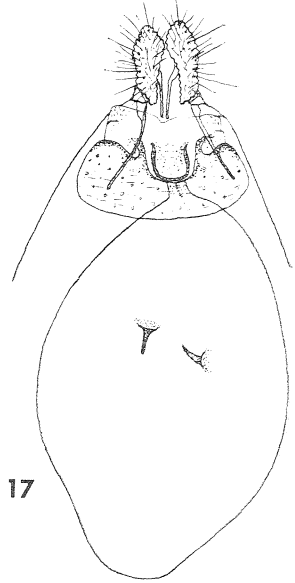


Part of male genitalia, valvae ( $\times 50$ ) of *Pammene suspectana*.  
 Fig. 14 : Lectotype, prep. BMNH 4606. Fig. 15 : Dania, prep. NLW 2115.



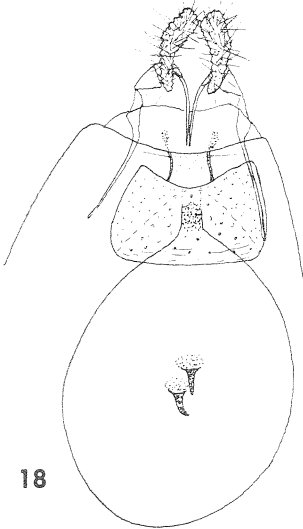
16

argyrana

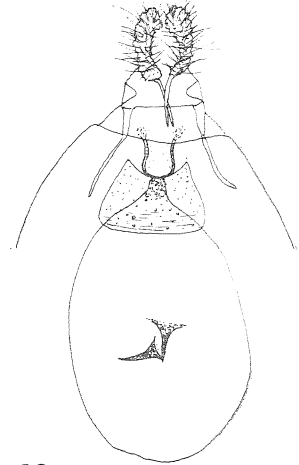


17

albuginana



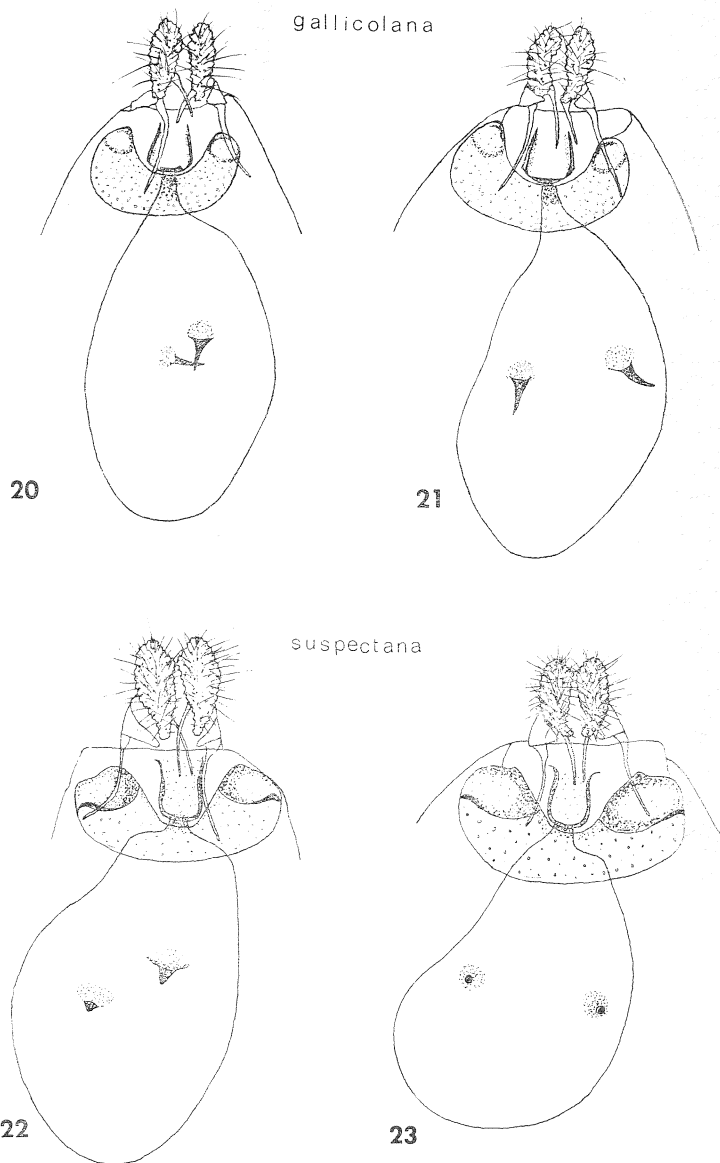
18



19

Female genitalia ( $\times 40$ ) of *Pammene* spp. Fig. 16 : *argyrana*, Dania, prep. NLW 2125 (same specimen as figured in fig. 31). Fig. 17 : *argyrana*, Dania, prep. NLW 2123. Fig. 18 : *albuginana*, Dania, prep. 2134 (same specimen as figured in fig. 34). Fig. 19 : *albuginana*, Dania, prep. NLW 2141.





Female genitalia ( $\times 40$ ) of *Pammene* spp. Fig. 20 : *gallicolana*, Germania, prep. NLW 2171. Fig. 21 : *gallicolana*, Germania, prep. 2172 (same specimen as figured in fig. 36). Fig. 22 : *suspectana*, Dania, prep. NLW 2056. Fig. 23 : *suspectana*, Dania, prep. NLW 2126.

of my preparations with Mr. Pierce's original slide used for illustrating the genitalia of *albuginana* ♂, and stated them to agree.

The structure of the genitalia of the said Danish specimens appears in figs. 5, 6, 8 (♂), and figs. 18, 19 (♀), respectively. The aedeagus contains cornuti, 3—5 fixed; 8—9 deciduous. The body of a male is shown in fig. 9, demonstrating the pencils of hair-scales present on tergites 6 and 7. Four Danish specimens are illustrated (figs. 27, 33, 34, 35).

Pierce & Metcalfe cite as a nymonym *gallicolana* Zell., a statement followed by Bradley (1959, pl. 5), who under the name *albuginana* Guenée pictures wings of the species in question. As *albuginana* (sensu Pierce & Metcalfe) and *gallicolana* Lienig & Zeller in fact are two different species (see later) their names can, however, not be synonymized before the nomenclatorial status of the name *albuginana* has been settled, which has not yet been attempted.

The latest monographs of the Palaearctic (Obraztsov, 1960) and German (Hannemann, 1961) Tortricidae do not recognize the problem, both mixing not only two but three different species under the heading of *albuginana*. These authors as well quote *gallicolana* (1846) as a synonym of *albuginana* (1845) but their illustrations of the *albuginana* genitalia (Obraztsov, fig. 75 ♀; Hannemann, fig. 198 ♂) do not represent *albuginana* sensu Pierce & Metcalfe. Obraztsov illustrates *gallicolana* Lienig & Zeller, and Hannemann a third species, viz., *suspectana* Lienig & Zeller (see later). On the other hand, the illustration of *albuginana* Gn. shown by Bjørn (1965, pl. 6 h) does represent the species in question.

To arrive at a definite conclusion concerning the name *albuginana* Guenée it is necessary to check not only the literature but if possible type material of the three species involved. The types of both *gallicolana* and *suspectana* (see later) still exist, but as to *albuginana* the problem is complicated.

The history of the name *albuginana* is as follows.

Duponchel (1836, p. 520, pl. 263 fig. 6) figured under the name *Ephippiphora argyrana* Hübner a Russian specimen ex. coll. Boisduval. Later Guenée (1845, p. 178; 1846, p. 44) remarked that the said illustration did not show *argyrana* but probably an undescribed species to which he applied the name *albuginana* Guenée. Also Lienig & Zeller (1846, p. 254) state that Duponchel's

figure of *argyrana* did not represent *argyrana* Hübner (a species which Duponchel (1835, pl. 251 fig. 6) figures under the name *lathyrana* Hübner).

The holotype of *albuginana* Guenée thus became the unique specimen of *argyrana* sensu Duponchel non Hübner, which, according to kind information from Dr. Pierre Viette (Paris), via coll. Oberthür, via coll. Paravicini, should be kept in the collection of the British Museum (Natural History). Mr. Bradley has most carefully both in 1956 as well as more recently searched for the specimen in vain. The Paravicini collection did contain a few specimens under *argyrana* and *gallicolana*, but none which could be recognized as the Boisduval specimen.

The type must therefore be considered lost.

Duponchel's illustration in question is drawn in lifesize (measuring only 13.8 mm alar expanse). An enlarged photograph of this illustration is reproduced in fig. 26, together with a photograph of each of the three species which the said illustration may be suspected to represent. Due to individual variation within these species (see figs. 27—29, 32—39) and the fact that Duponchel's figure is rather schematic and hand-coloured (and thus likewise "variable") it is not possible to state its identity with certainty.

As both *gallicolana* and *suspectana* are established by existing type specimens their names ought to be respected and retained in use if possible. Therefore, since it cannot be disproved that Duponchel's figure does not show *albuginana* (sensu Pierce & Metcalfe, 1922; Bradley, 1959) the best course to avoid future confusion would be to establish also the name *albuginana*. This requires the designation of a neotype, as proposed below.

The type-locality is given as "Russia", without further information. In the thirties of last century collecting activity was probably most intensive in the Northwestern part of Russia. As Finland at that time formed part of Russia, I accordingly applied to Dr. Hackman of the Zoological Museum of the University of Helsingfors to obtain a suitable Finnish specimen. Dr. Hackman kindly selected a specimen from the museum collection, labelled: "Fennia A. Lemland, Marsö 8.7.1952, coll. Lankiala" which I designate as the neotype of *Pammene albuginana* Guenée, 1845. The specimen — which is preserved in the museum of Helsingfors — is illustrated in fig. 32, and its valvae in fig. 7. Dr. Hackman informed

me that the Finnish specimens previously recorded as *gallicolana* (e.g. by Hackman et al., 1950, p. 15) have proved to belong to *albuginana*, and that *gallicolana* does not seem to occur in Finland.

### 3. *Pammene gallicolana* Lienig & Zeller, 1846.\*).

Although most of the Danish "*Pammene amygdalana*", as stated above, proved to belong to *P. albuginana*, one of the males in my collection (fig. 28) looked so different from the remainder that they could not possibly be considered conspecific. The forewings were darker in colour, the dorsal spot larger, more uniformly white, and of another shape. There were no striking differences in the shape of the valva except for the presence of a basal spine, lacking in *albuginana*.

In 1956 I sent the specimen in question, including the genital slide, to the British Museum (Natural History). After having studied the holotype of *Grapholitha gallicolana* Lienig & Zeller (1846, p. 255) and dissected its genitalia Mr. Bradley confirmed that my specimen did belong to that species.

Larsen (1916, p. 133), who recorded the present species group (except *argyrana*) under the name *gallicolana* Z., remarked that two of the specimens have nearly black forewings and the costal spot clear whitish, adding that these two specimens may belong to a variety or to a nearly related species. By dissection, these two specimens (now in coll. Zool. Mus. Copenhagen) proved to be the only true *gallicolana* of the lot. Having afterwards examined a quantity of material of the group from other collections I found more Danish specimens. Another Danish specimen (fig. 37) and a German one (fig. 36) are illustrated.

As appears from figs. 10—13 the *gallicolana* male has setae at the base of the valva, but their number is variable, ranging from one to about six. The aedeagus proved to contain cornuti, 5—9 short, fixed; 5—9 long, curved, deciduous. Tergites 6 and 7 in male with hair-scales. The females used for illustrating the genitalia (figs. 20—21) are of German origin (ex. coll. Zool. Mus. Copenhagen).

\*) The authorship of all species described in that paper has been ascribed exclusively to Zeller. The said paper is, however, stated to be "prepared by Friederike Lienig, née Berg, with remarks by P. C. Zeller". In agreement with the "International Code", Article 50 the authorship has to be attributed to Lienig & Zeller

The genitalia of a supposed *gallicolana* illustrated by Benander (1950, fig. 14 x) belong to *suspectana*, while those shown by Pierce & Metcalfe (1922, pl. 31) as *costipunctana* ♂ and by Hannemann (1961, fig. 197) as *argyrana* in both cases have to be referred to *gallicolana*. Even the specimen figured by Hannemann (l.c., pl. 8 fig. 2) as *argyrana* seems to represent *gallicolana*. As mentioned above, Obratzov (1960, fig. 75) illustrated the *gallicolana* ♀ genitalia under the name *albuginana*.

#### 4. *Pammene suspectana* Lienig & Zeller, 1846.

This species, described as *Grapholitha suspectana* by Lienig & Zeller (1846, p. 255) may be distinguished from its allies by the dorsal spot, which is smaller, hardly reaching the center of the wing, and transversed by one or two dark lines sometimes making the spot inconspicuous. Terminal patch a series of alternately black and brownish-yellow striae. Forewings with a greenish tint. The illustration by Kennel (1921, pl. 24 fig. 79) gives a fairly good idea of its appearance, especially of the rather characteristic shape of the forewing. Two Danish specimens are shown in figs. 29 and 39.

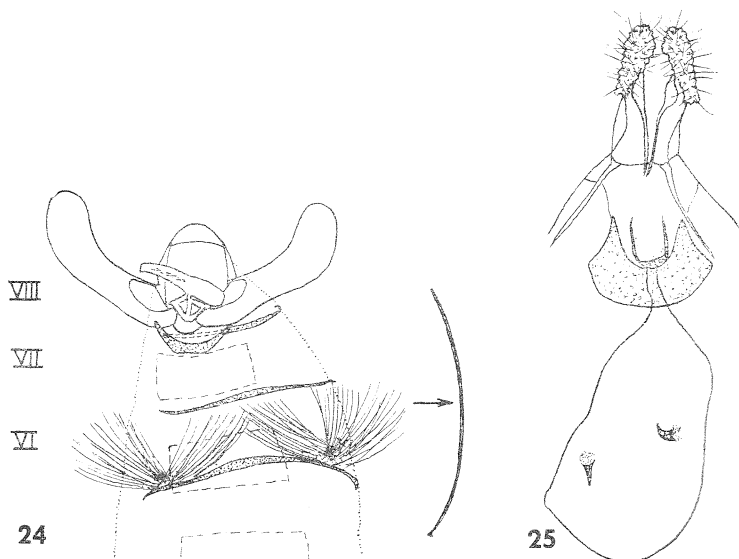
Mr. Bradley has kindly dissected the type specimen (♂) preserved in the British Museum (Natural History) and sent me a sketch of the genitalia. Fig. 14 shows the valvae of the type, and fig. 15 the valvae of a Danish specimen. A characteristic feature in *suspectana*, in contrast to *gallicolana*, is an excavation in the part of the valva situated between setae and base. As in other species of the group the aedeagus contains two sets of cornuti, one set fixed, the other deciduous. Besides the deciduous even a few of the "fixed" cornuti may be found left inside the bursa of the female after copulation. The body of the male has hair-scales on tergite 6. The female genitalia of two Danish specimens are shown in figs. 22—23.

Examination of the Danish material of the group previously published as *gallicolana* (Larsen, 1916, 1927) or *amygdalana* (van Deurs, 1956) disclosed 6 specimens of *suspectana*. Later on a few additional finds have been added.

As mentioned above, Benander (1950, fig. 14x) illustrates the valva of *suspectana* under the name *gallicolana*. Obratzov (1960, p. 118) lists this species as "*P. ?suspectana* (Z.)" while Hannemann (1961, p. 107) does not mention *suspectana* except in a foot-

note (as “unberücksichtigt”) but still figures its male genitalia under the name *albuginana* (l. c., fig. 198).

One of the species having caused confusion within the group was described and illustrated as *Phthoroblastis (Pammene) fraxinana* by v. Peyerimhoff (1871, p. 415; 1872, p. 12—13 pl. 5 fig. 5). While treating *P. gallicolana*, Kennel (1921, p. 692—93) mentioned *fraxinana* merely as a synonym (of *gallicolana* v. *amygdalana*), but afterwards (1921, p. 726—27) in his Appendix he discussed the validity of *fraxinana*, pointing out several characters all demonstrating that *fraxinana* Peyer. and *costipunctana* Haworth are separate species. But finally he concluded “Ist sicher nicht anders als *Pam. costipunctana* var. *amygdalana* Dup.”. This remark is most surprising, not least because the name *costipunctana* is not at all mentioned elsewhere in Kennel’s work. In his monograph Obraztsov (1960, p. 118, 124) arranges Peyerimhoff’s species under *albuginana* as “ab. *fraxinana* Peyer., status nov.” (“Obwohl . . . . . geneigt sind *fraxinana* Peyer. als eine besondere Art aufzufassen, kann ich diese nur als eine Aberration von *albuginana* bezeichnen . . . . . Auch im Genitalbau einer extremen *fraxinana*-



*Pammene amygdalana*. Fig. 24 : Abdomen of male ( $\times 30$ ), Austria, prep. NLW 2170 (same specimen as figured in fig. 41). Fig. 25 : Female genitalia ( $\times 40$ ) of lectotype, prep. P. Viette 3378.

Form konnte ich keine Unterschiede im Vergleich zu *albuginana* feststellen.”).

*P. fraxinana* was by Peyerimhoff recorded to be found exclusively on stems of ash trees. The structure of the genitalia of *fraxinana*, occurring commonly on ash trees in the vicinity of Vienna, and obtained from Dr. Klimesch (Linz in Austria), proved to agree with Danish *suspectana*. As the illustration given by Peyerimhoff (1872, p. 5 fig. 5) is too schematic I applied to Dr. P. Viette in Paris who readily allowed me to inspect the type specimen. Although the body was missing, no doubt exists that the specimen belongs to *suspectana* and that *fraxinana* thus becomes a synonym, not, as generally considered of *gallicolana* or *albuginana*, but of *suspectana* (syn. nov.). The type specimen is figured in fig. 38.

##### 5. *Pammene amygdalana* Duponchel, 1843.

In his list of Danish Microlepidoptera, Larsen (1916, p. 133) recorded one of the specimens of his *P. gallicolana* as var. *amygdalana* Dup. If *amygdalana* (1843) and *gallicolana* (1846) were conspecific — which as mentioned above it is not the case — the name *amygdalana*, having priority, should be used instead of *gallicolana*, as is also maintained by van Deurs (1956, p. 274—75).

*Grapholitha amygdalana* was described and illustrated by Duponchel (1843, p. 157, pl. 63 fig. 6), and although the said illustration is rather satisfactory this species has often been subject to misinterpretation, having been confounded partly with species belonging to the *argyrana* group, partly with *Grapholitha lobarzewskii* Nowicki, 1860 and *G. prunivorana* Ragonot, 1879.

Concerning the two last-named species, de Joannis (1915, p. 110—11) stated: “*Grapholitha amygdalana*, p. 157. pl. 63 fig. 6 — Dans le Catalogue Staudinger-Rebel, 1901, ce nom est considéré comme celui d’une variété de *Pammene gallicolana* Z. . . . . La collection du Muséum renferme une ♀ venant de Duponchel et notée: *amygdalana*. Il ne sera peut-être pas inutile de rappeler ici en passant que *Lobarzewskii* Now., que certain ont confondu avec *amygdalana* Dup., est une tout autre espèce, appartenant au genre *Grapholitha* et qui doit remplacer le nom de *prunivorana* Rag. . . . .”

Bradley (1959, p. 62) records as new to Britain (since the publication of Meyrick (1928)) *G. prunivorana*, adding: “this spe-

cies was originally recorded in this country under the name *lobarzewskii* Nowicki with *prunivorana* Ragonot as a synonym. Dr. Obratsov informs me that this synonymy is incorrect as the two species are distinct. The name *prunivorana* is therefore used here as I have compared the type of this species (in the Paris Museum) with the Dungeness specimen mentioned above and find they are conspecific.”

In his monograph, appearing after Bradley's list, Obratsov (1959, p. 213), however, states *prunivorana* to be a junior synonym of *lobarzewskii*. His illustration (l.c., fig. 55) of the genitalia of a French *lobarzewskii* ♂ also agrees with Bradley's (l.c., fig. 4) figure of the genitalia of *prunivorana* ♂, the type of which Bradley has studied, but it does not appear from Obratsov's paper whether the type of *lobarzewskii* was examined. A study of its genitalia is urgently necessary.

To learn how the genitalia of the type of *amygdalana* (by de Joannis (1915, p. 111) stated to be in the Paris Museum) looked I applied to Dr. Viette, who in 1956 sent me the sketch reproduced in fig. 25. Fig. 24 shows the genitalia of an *amygdalana* ♂ agreeing with Obratsov's illustration (1960, pl. 11 fig. 2) of that species, and procured from the firm Staudinger & Bang-Haas (as *lobarzewskii*!).

The Danish specimen mentioned above as *gallicolana* var. *amygdalana* proved by dissection to belong to *albuginana*. Two Austrian specimens are illustrated in figs. 40 and 41. The species does not occur in N. Europe but is distributed in C. and S. Europe.

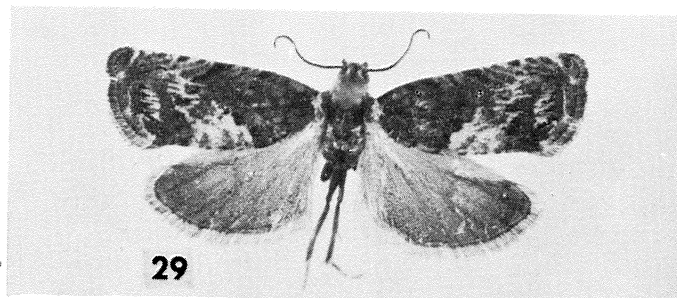
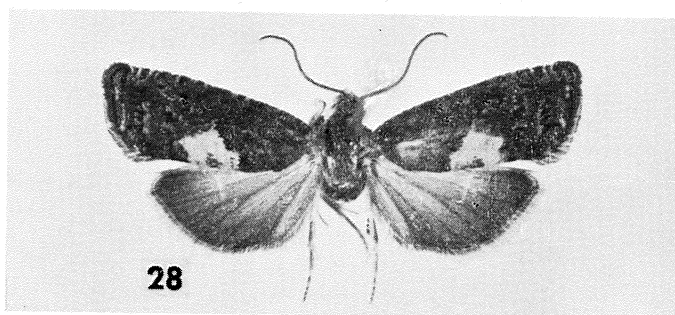
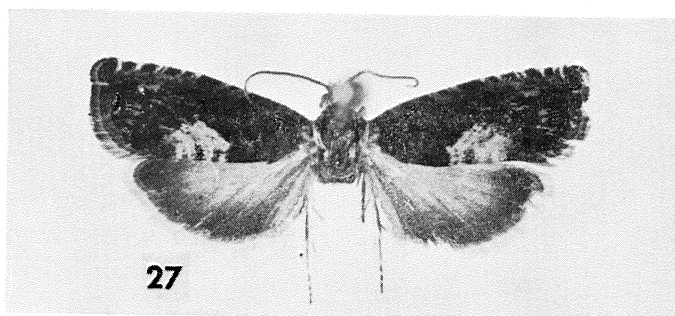
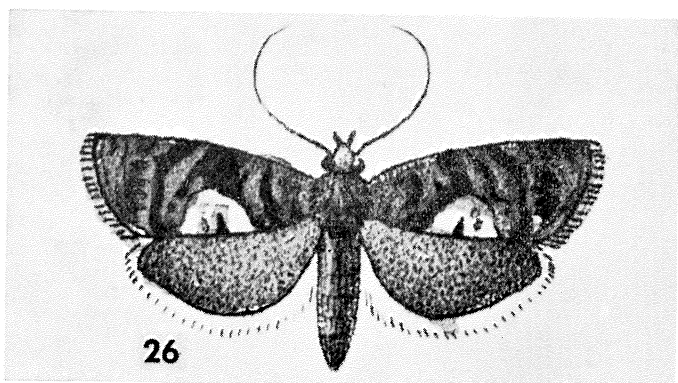
As *amygdalana* is superficially more similar to a small *Enarmonia formosana* Scopoli (*woeberiana* Denis & Schiffermüller) than to *gallicolana* it is hard to understand why many authors (e.g. Ragonot (1894, p. 219) and Staudinger & Rebel (1901, p. 124)) have considered them conspecific.

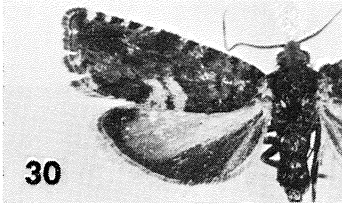
*P. amygdalana* has hair-scales on tergite 6 (fig. 24). The aedeagus contains cornuti, about 15 short, fixed; 4 wide, deciduous.

---

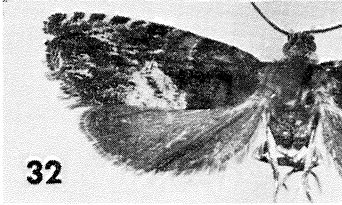
*Pammene* spp. (× 5). Fig. 26 : Duponchel's illustration in his plate 263 fig. 6 = *albuginana* Guenée. Fig. 27 : *albuginana* ♂, Dania. Fig. 28 : *gallicolana* ♂, Dania. Fig. 29 : *suspectana* ♀, Dania.



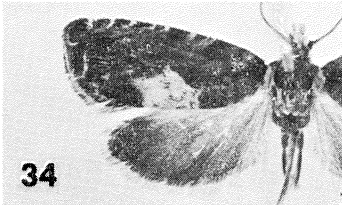
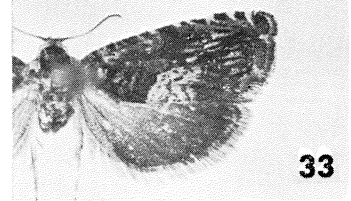




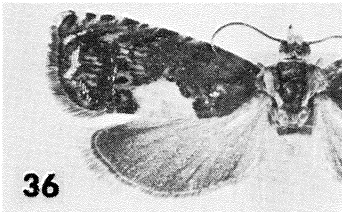
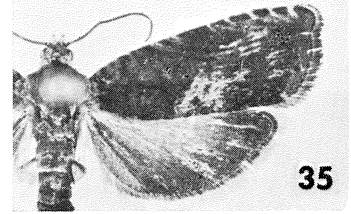
arg



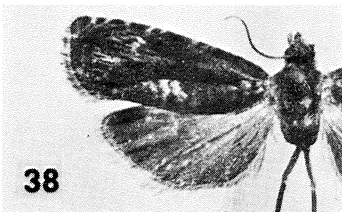
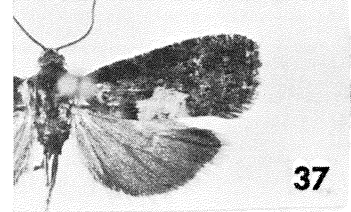
alb



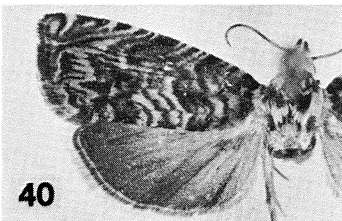
alb



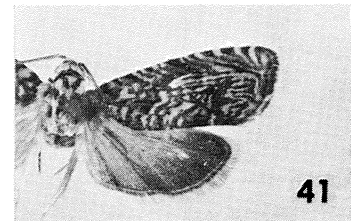
gal



sus



amy



Survey of above synonymy of *Pammene* species:

- argyrana* Hübner, 1796/99 (fate on type unknown)  
*atromargana* Haworth, 1811  
*lathyrana* Hübner sensu Duponchel 1835, pl. 251 fig. 6  
*argyrana* Hübner sensu Pierce & Metcalfe 1922, ♂ genit.  
*costipunctana* Haworth sensu Pierce & Metcalfe 1922, ♀ genit.
- albuginana* Guenée, 1845 (neotype in the Zool. Mus. Helsingfors)  
*argyrana* Hübner sensu Duponchel 1836, pl. 263 fig. 6  
*albuginana* Guenée sensu Pierce & Metcalfe 1922, ♂ genit.  
*amygdalana* Duponchel sensu Kloet & Hincks 1945  
*albuginana* Guenée sensu Bradley 1959  
*albuginana* Guenée sensu Bjørn 1965
- gallicolana* Lienig & Zeller, 1846 (holotype in the British Mus.)  
*costipunctana* Haworth sensu Pierce & Metcalfe 1922, ♂ genit.  
*albuginana* Guenée sensu Obratzov 1960, fig. 75, ♀ genit.  
*argyrana* Hübner sensu Hannemann 1961, fig. 197, ♂ genit.; pl. 8 fig. 2  
*albuginana* Guenée sensu Hannemann 1961, pl. 8 fig. 11  
*gallicolana* Lienig & Zeller sensu Bjørn 1965
- suspectana* Lienig & Zeller, 1846 (lectotype in the British Mus.)  
*fraxinana* v. Peyerimhoff, 1871; 1872 (type in the Nat. Hist. Mus. Paris)  
*suspectana* Lienig & Zeller sensu Kennel 1921, pl. 24 fig. 79  
*gallicolana* Lienig & Zeller sensu Benander 1950, ♂ genit.  
*albuginana* Guenée ab. *fraxinana* v. Peyerimhoff sensu Obratzov 1960  
*albuginana* Guenée sensu Hannemann 1961, fig. 198, ♂ genit.  
*suspectana* Lienig & Zeller sensu Bjørn 1965
- amygdalana* Duponchel, 1843 (lectotype in Mus. d'Hist. nat. Paris)  
*lobarzewskii* Nowicki sensu auct.  
*amygdalana* Duponchel sensu Obratzov 1960

## Summary.

The often bewildering synonymy of the *argyrana* group of the genus *Pammene* Hübner, 1825 is discussed.

Specimens and genitalia, male and female, of the following species are illustrated: *argyrana* Hübner, 1796/99, *albuginana* Guenée, 1845,

---

*Pammene* spp. (× 5). Fig. 30 : *argyrana* ♂, Dania. Fig. 31 : *argyrana* ♀, Dania. Fig. 32 : *albuginana* ♂, neotype. Fig. 33 : *albuginana* ♀, Dania. Fig. 34 : *albuginana* ♀, Dania. Fig. 35 : *albuginana* ♂, Dania. Fig. 36 : *gallicolana* ♀, Germania. Fig. 37 : *gallicolana* ♂, Dania. Fig. 38 : *suspectana* ♂, type of *fraxinana*. Fig. 39 : *suspectana* ♀, Dania. Fig. 40 : *amygdalana* ♀, Austria. Fig. 41 : *amygdalana* ♂, Austria.

*gallicolana* Lienig & Zeller, 1846, *suspectana* Lienig & Zeller, 1846, *amygdalana* Duponchel, 1843.

The Danish records of *P. amygdalana* have all to be referred to *albuginana*, *gallicolana*, and *suspectana*, respectively.

The genitalia of the type specimens of *gallicolana*, *suspectana*, and *amygdalana* are illustrated.

A neotype of *albuginana* is designated (specimen and genitalia are figured).

The type of *P. fraxinana* Peyerimhoff, 1871 is illustrated and the name is shown to be a junior synonym of *suspectana* (syn. nov.).

The genitalia of the body attached to the holotype of *Tortrix costipunctana* Haworth, 1811 are figured and shown to belong to *argyrana*. Having re-examined the specimen Mr. Bradley established that a wrong body had been glued on the specimen which is conspecific with *Epiblema trigeminana* Stephens, 1834. The latter thus becomes a junior synonym of *costipunctana*. Parenthetically is added that my examination in 1957 of the holotype of *Paedisca ravulana* Herrich-Schäffer, 1847; 1851, proved this name as well to be a junior synonym of *Epiblema costipunctana* Haworth (syn. nov.).

The authorship of all species described in Isis, 1846 p. 175—302, have to be attributed to Lienig & Zeller instead of to Zeller.

#### References.

- B a n g - H a a s, A., 1881: Tillæg til Fortegnelse over de i Danmark levende Lepidoptera. — Naturhist. Tidsskr. (3), 13.
- B e n a n d e r, P., 1950: Fjärilar. Lepidoptera II. Småfjärilar. Microlepidoptera. Andra familjegruppen. Vecklarefjärilar. Tortricina. — Svensk Insektfauna 10. Stockholm.
- B j ø r n, P., 1965: De senere års nye danske micros-arter. — Lepidoptera (NS) 1. København.
- B r a d l e y, J. D., 1959: An illustrated List of the British Tortricidae. Part II: Olethreutinae. — Entomologist's Gaz. 10.
- D e u r s v a n, W., 1956: Sommerfugle 8. Viklere. — Danmarks Fauna 61. København.
- D u p o n c h e l, P. A. J., 1834—36: Histoire Naturelle des Lépidoptères ou Papillons de France. 9. Paris.
- , 1842—45: Idem. Supplément 4. Paris.
- G u e n é e, A., 1845: Essai sur une nouvelle classification des Microlépidoptères et Catalogue des espèces européennes connues jusqu'à ce jour. — Ann. Soc. Ent. France (2) 3.
- , 1846 (1845): Europeaeorum Microlepidopterorum index methodicus ... 1. Paris.
- H a c k m a n, W. et al., 1950: Enumeratio Insectorum Fenniae et Sueciae. I. Lepidoptera 2. Microlepidoptera. Helsingin Hyönteisaihtoyhdistys. Helsingfors.

- Hannemann, H. J., 1961: Kleinschmetterlinge oder Microlepidoptera I. Die Wickler (s.str.) (Tortricidae). — Die Tierwelt Deutschlands etc. Jena.
- Haworth, A. H., 1803—29: *Lepidoptera Britannica*. London.
- Herrich-Schäffer, G. A. W., 1847, 1851: Systematische Bearbeitung der Schmetterlinge von Europa. 4. Regensburg.
- Hübner, J., 1796—1824: Sammlung europäischer Schmetterlinge. Tortr. Augsburg.
- Joannis de, J., 1915: Étude Synonymique des Espèces de Microlépidoptères décrites comme Nouvelles par Duponchel. — Ann. Soc. Ent. France. 84.
- Kennel, J. von, 1908—21: Die Palaearktischen Tortriciden. — Zoologica 21, 54. Stuttgart.
- Kloet, G. S. & Hincks, W. D., 1945: A Check List of British Insects. Arbroath.
- Larsen, C. S., 1916: Fortegnelse over Danmarks Microlepidoptera. — Entomol. Medd. 11. København.
- , 1927: Tillæg til Fortegnelse over Danmark Microlepidoptera. — Entomol. Medd. 17. København.
- Lienig, F. & Zeller, P. G., 1846: Lepidopterologische Fauna von Lievland und Curland. Isis (Oken). Leipzig.
- Meyrick, E., 1895: A Handbook of British Lepidoptera. London.
- , 1928: A Revised Handbook of British Lepidoptera. London.
- Obraztsov, N. S., 1951: Pammene (Hemeris) tomiana (Z.) und andere ihr ähnliche Arten (Lepidoptera, Tortricidae). — Tijdschr. v. Entomol. 94.
- , 1954—67: Die Gattungen der palaearktischen Tortricidae. — Tijdsch. v. Entomol. 97—110.
- Ophem, M., 1964: The genus *Acleris* Hübner 1825. Notes on the Norwegian Tortricidae II (Lepidoptera). — Norsk Ent. Tidsskr. 12. Oslo.
- Peyerimhoff, H. von, 1871: Lepidopterologische Notizen. — Mitth. Schweiz. Ent. Ges. 3. Schaffhausen.
- , 1872: Description de Quelques Lépidoptères nouveaux ou peu connus. I. — Ann. Soc. Ent. France (5) 2.
- Pierce, F. N. & Metcalfe, J. W., 1922: The Genitalia of the British Tortricidae. Oundle.
- Ragonot, E. L., 1894: Notes synonymiques sur les Microlépidoptères etc. — Ann. Soc. Ent. France 63.
- Stephens, J. F., 1834: Illustrations of British Entomology. Haeustellata 4. London.