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Taxonomic notes on the Grapholitini (Lepidoptera, Tortricidae)

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Summary

The synonymisation of *Cydia* Hübner, [1825] and *Grapholita* Treitschke, 1829 is supported. *Danilevskia* Kuznetsov, 1970 is placed as a synonym of *Cydia* and the new name *Pammene aurita* is proposed for *Phthoroblastis aurantiana* Staudinger, 1871. Some morphological characters are discussed.

Résumé

La synonymie de *Cydia* Hübner, [1825] et *Grapholita* Treitschke, 1829 est reconnue. *Danilevskia* Kuznetsov, 1970 est abaissé au rang de synonyme de *Cydia*, et le nouveau nom de *Pammene aurita* est proposé pour *Phthoroblastis aurantiana* Staudinger.

Introduction

Within the last few years, the systematics of olethreutine moths has been distinctly improved, with the exception of the Grapholitini. In this tribe, the number of useful distinguishing characters is limited due to a simplification of the genitalia. In my recent discussion on the phylogeny of the Palaearctic genera (Razowski, 1989) many doubts were expressed and although some appear to have been clarified due to the careful examination of abdominal scent organs (Razowski, in press), there is still much to be explained.

***Cydia* Hübner, [1825]**
= *Grapholita* Treitschke, 1829
= *Danilevskia* Kuznetsov, 1970 — **syn. n.**

Traditionally, *Cydia* (= *Laspeyresia* Hübner, [1825]) and *Grapholita* Treitschke, 1829 (= *Grapholitha* Treitschke, 1830 et auct.) have been treated as two closely related genera. Danilevskij & Kuznetsov (1968) treated them quite separately within the 'Laspeyresiae'. Some

authors, however, treated them as a single genus, without any discussion of their synonymisation (Bradley et al., 1979 ; Palm, 1985), although the former author retained *Grapholita* as a subgenus.

Redescribing the two genera (Razowski, 1989), I treated the presence of the diverticle of the dorso-posterior part of the corpus bursae as the only autapomorphy of *Cydia* (Razowski, 1989) and suggested that its absence might prove to be a secondary reduction. While studying the Polish Grapholitini, I found a well developed diverticle in *Grapholita orobana* (Treitschke, 1830) and *G. lunulana* (Denis & Schiffermüller, 1775).

A further useful character is the presence of a scent organ beyond the subgenital sternite in the male. This character is present in all species included in *Grapholita* and is now treated as reduced in all species placed in *Cydia.* This reduction probably appeared independently in several groups of species within this genus. It can also be assumed that there is no correlation between the presence of the scent organ and the diverticle. Thus no character has yet been found to differentiate between *Cydia* and *Grapholita*, and the latter is correctly treated as a synonym of *Cydia.* A full list of synonyms of the two taxa, treated as distinct genera, has already been given (Razowski, 1989). The groups of species and subgenera proposed by Danilevskij & Kuznetsov (1968) and later partially rejected (Razowski, 1989) should now be reconsidered and rearranged within *Cydia.*

Danilevskia Kuznetsov, 1970 (Ent. Obozr. 49 (2) : 446) was erected for *D. silvana* Kuznetsov, 1970, which was described from Palaearctic East Asia (Sikhote Alin). I recently stated that this genus is hardly distinguishable from *Cydia* (Razowski, 1989) and its only probable autapomorphy is the presence of an apical process of the tegumen. This apical process has since been observed in some species of European *Cydia*, for example in *C. corollana* (Hübner, 1823) and *C. inquinatana* (Hübner, 1799). It may be assumed that this character appeared convergently several times within this genus.

Pammene aurita nom. n.

Phthoroblastis aurantiana Staudinger, 1871, Berl. ent. Z.,14 (1870) : 286 — secondary homonym, nom. praeocc. by *Grapholitha aurantiana* Kollar, 1832, Beytr. Landeskunde Oesterr., 2 : 84.

The complete synonomy of these two species was summarized by Obraztsov (1959, 1960) who placed them in *Pammene* and *Laspeyresia* respectively. Bradley et al. (1979) included *aurantiana* Kollar in

Cydia, whereas KUZNETSOV (1978) placed both in the genus *Pammene*. KOLLAR's *aurantiana* is a colour form of *aurana* FABRICIUS, 1775, which undoubtedly belongs in the genus *Pammene*, as shown by the presence of the tergal abdominal scent organs and the structure of aedeagus.

Morphological characters in the Grapholitini

As mentioned above, the number of useful taxonomic characters in this tribe are rather scarce. However, additional characters could be found, for example, in the structure of the abdominal scent organs which were not examined in the majority of the species and in almost all of the tropical genera. Another character is the shape of the cingulum, a sclerotic ring of the ductus bursae, the shape of which is often quite elaborate. Its structure has been of great importance at the species level, but it may also prove useful for generic classification. In numerous species of the genus *Pammene*, the dorsal wall of the sclerite is relatively strong and forms an inwardly directed, longitudinal rib. The ventro lateral parts of this cingulum are simple in structure and weakly sclerotized. The simplification of the structure of the cingulum in the subtribe Grapholitina can certainly be considered a secondary process. The structure of the ductus bursae in the Grapholitina has already been shortly described (RAZOWSKI, 1983). This structure (Fig. 1-3) is now considered to be a modification of the typical ductus seminalis (Fig. 1). In several species, the anterior portion of the ductus seminalis is very short and broad ; the bulla seminalis is more or less directly attached to the ductus bursae and the posterior

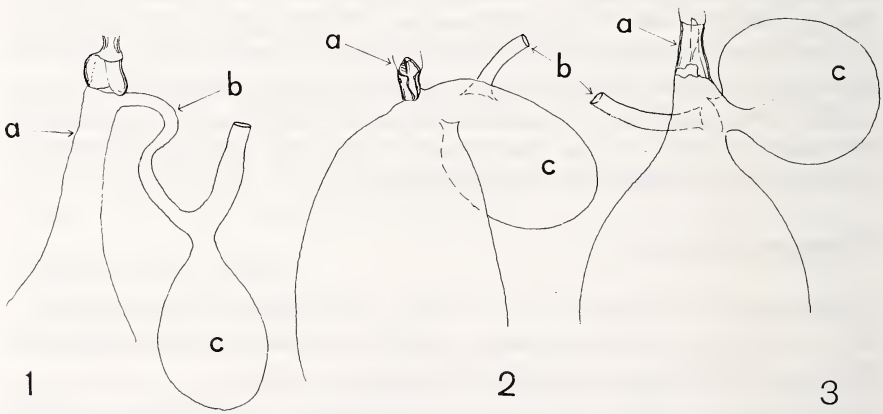

Fig. 1-3. Subterminal parts of bursa copulatrix. 1. *Cydia orobana* (TREITSCHKE), 2. *Pammene christophana* (MÖSCHLER), 3. *Cydia pallifrontana* (ZELLER) ; a — ducus bursae, b — ductus seminalis, c — bulla seminalis.

portion of the ductus seminalis may originate at its base (Fig. 2). In some species this process has resulted in a complete reduction of the basal portion of the ductus seminalis, which is incorporated in the dorsal surface of the ductus bursae (Fig. 3). The translocation of the distal part of the ductus seminalis and the retention of the bulla seminalis in the form of a separate bulb, has led to a situation directly comparable to that found in other Tortricidae.

Judging by the transformation of the ductus seminalis within this subtribe, it can be assumed that it appeared independently of that in the more generalised tortricine moths, e.g. in the Cochylini. As this process could not be found in the latter tribe, there is no possibility of comparison and thus a determination of the homology. It would appear that within the Grapholitina the transformation is a secondary process and occurred independently within these particular genera, i.e. *Cydia* and *Pammene*.

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