

Brief report

Teratological male genitalia among *Coleophora* species (Lepidoptera, Coleophoridae)

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The author has studied and determined *Coleophora* species occurring in Finland through examining their genitalia. Several thousands of microscopic slides have been prepared representing more than one hundred different species. More than thirty specimens with completely or partly undeveloped male genitalia representing 11 species have been discovered.

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There have been published only a few reports describing abnormalities in the male lepidopterous genitalia, for instance Kyrki (1980) and Itämies (1996). These articles have described only minor variation, however, allowing a reliable determination of the species in question.

The author has studied the genitalia of several thousands of specimens belonging to the family Coleophoridae. More than 30 male specimens have been discovered with almost completely undeveloped genitalia, representing 11 different species. The terminology used in this article is in accordance with Landry (1993).

These specimens lack practically all major structures of normal genitalia. The valva and the sacculus are missing totally. Only the tegumen and the spinose knob of gnathos and part of the vinculum are present. Additionally there is a structure that might be the phallosome, but it is also misformed. For instance in species with two juxta rods, only one clumpy structure is present. Curiously the normal male genital organs of these particular species do not show a close resemblance to each other, the remaining undeveloped male genital organs are all very similar.

Fig. 1 shows the normal genitalia of *Coleophora alticolella* Zeller, 1849, according to Toll (1952) and Fig. 2 a drawing of the undeveloped genitalia of the same species from Finland and Fig. 3 the same, but photographed.

Similar undeveloped genitalia have been found by the author in the following *Coleophora* species:

Coleophora lusciniapennella (Treitschke, 1833)
Coleophora alcyonipennella (Kollar, 1832)
Coleophora discordella Zeller, 1849
Coleophora gallipennella (Hubner, 1796) (from Latvia)
Coleophora adjunctella Hodgkinson, 1882
Coleophora glaucicolella Wood, 1892
Coleophora alticolella Zeller, 1849

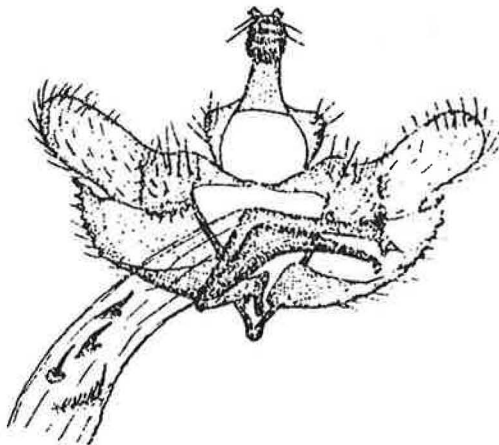


Fig. 1. Normal male genitalia of *Coleophora alticolella* Zeller, 1849 according to Toll (1952).

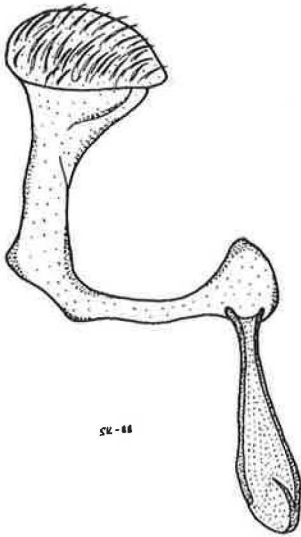


Fig. 2. Undeveloped male genitalia of *Coleophora alticolella*. FENNIA, V:Parainen, 2-7.7.1987 Bo Wikström leg. Gen. prep. No. 1463, Bo Wikström det.

Coleophora taeniipennella Herrich-Schäffer, 1855

Coleophora virgaureae Stainton, 1857

Coleophora proterella sp.n. (Bo Wikström & Jukka Tabell in lit.)

Coleophora saxicolella (Duponchel, 1843)

No abnormalities have been observed in the outer appearance of the specimens with undeveloped genitalia. Moreover one specimen of *Coleophora lusciniapennella* was captured with the help of a pheromone.

Dr. G. Baldizzone (pers. comm.) confirmed a few years ago, that he had never met with this kind of phenomenon, neither was Dr. M. Falkovits (pers. com.) familiar with such genitalia. However Mr. I. Svensson (pers. com.) reported, that he had observed a few such cases in Sweden. Also several Finnish lepidopterologists have seen similar cases, but only a few specimens, and they had thought, that the genitalia had been damaged somehow either mechanically or by some pests infesting collections.

The only record of this phenomenon can be found in Toll's revision on Polish *Coleophora* (Toll 1952). He presents a drawing of undeveloped male genitalia of *Coleophora glauciolella* (Tabl. XIII, drawing No. 109a). However, he does not make any comments upon the drawing.

It is very difficult to analyse the cause of such a phenomenon. The specimens may present rare genetic mutations within populations of great numbers of specimens or they can be ontogenetic developmental errors. It can not be completely excluded either, that it may deal with sterile descendants as a result of crossbreeding of individuals belonging to



Fig. 3. Undeveloped male genitalia of *Coleophora alticolella*. FENNIA, V:Parainen, 2-7.7.1987 Bo Wikström leg. Gen. Prep. No. 1463, Bo Wikström det.

two different *Coleophora* species. Anyway the phenomenon is widely occurring inside the genus.

The phenomenon has so far not been discovered among female specimens.

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