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***Pammene castanicola* sp.n. a new Lepidoptera Tortricidae from Sicily**

Abstract - A new species of tortricid moth, *Pammene castanicola* sp.n., from Mount Etna (Sicily, Italy) is described. Externally and in male genitalia the new species resemble *Pammene fasciana* (Linnaeus, 1761). In *P. castanicola* Trematerra sp.n. male genitalia presents bigger size, sacculus with distinct caudal angle, aedeagus distinctly narrow beyond middle and cornuti of deciduous type arranged in a patch. The genetic distances between *P. castanicola* and *P. fasciana* were confirmed by CO1 analysis. *P. castanicola* appears in one generation yearly as a phytophagous of fruits of *Castanea sativa* Miller.

Riassunto - *Pammene castanicola* sp.n. nuova specie di Lepidoptera Tortricidae dalla Sicilia

Viene descritta *Pammene castanicola* sp.n., una nuova specie di Lepidoptera Tortricidae, raccolta in alcuni castagneti del Monte Etna, in Sicilia. Dalle caratteristiche morfologiche la nuova specie assomiglia a *Pammene fasciana* (Linnaeus, 1761); anche la conformazione dell'apparato genitale maschile di *C. castanicola* Trematerra sp.n. richiama quello di *P. fasciana*, si differenzia per le maggiori dimensioni, il cuçullus più accentuato e il sacculus ad angolo. In *P. castanicola* l'aedeagus è ristretto all'apice e i cornuti decidui sono disposti a macchia. La separazione tra *P. castanicola* e *P. fasciana* è stata accertata anche dall'analisi genetica del CO1. *P. castanicola* svolge una generazione l'anno e vive a carico dei frutti di *Castanea sativa* Miller.

Key words: Lepidoptera Tortricidae, *Pammene castanicola*, new species, Italy

INTRODUCTION

Species of the genus *Pammene* Hübner, [1825] 1816, are described and known from the Holarctic where widely spread in the forest zone. About 80 species are Palaearctic, the Nearctic fauna is represented by 10 species and 3 in Oriental regions; 39 are noticed in Europe (Danilevskii & Kuznetsov, 1968; Razowski, 1989, 2003; Brown, 2005).

During investigations carried out to test the possibility of controlling the main chestnut fruit insect pests (tortricid and curculionid larvae) on Mount Etna (Sicily, Italy)

by means of entomopathogenic nematodes of the genera *Steinernema* and *Heterorhabditis*, we found few larvae and adults of an unknown tortricid. The new species, that we called *Pammene castanicola* Trematerra sp.n., by morphological characters is closed to *Pammene fasciana* (Linnaeus, 1761); the distances between *P. castanicola* and *P. fasciana* were also confirmed by CO1 genetic analysis (Casiraghi, unpubl. data).

After the discovery of this new species, the Italian Tortricidae fauna of the genus *Pammene* is composed by 28 species (Trematerra, 2003).

***Pammene castanicola* Trematerra sp.n.**

ADULT. Wing span 14-18 mm (Fig. 1). Head white-cream with brownish scales, palps white-cream with a line of black scales on lower part. Ground color of forewing white forming a large dorsal patch extending almost to subapical area where tinged creamy; costal strigulae grey divided with brown-grey; speculum cream ochreous with black inner spots and silvery lines. Remaining area of wing suffused and strigulated grey or brownish grey, paler to dorsal patch than beyond it where grey-brown with some black spots. Terminal part of wing with brownish-black or ochreous soffusions. Cilia brownish grey. Hindwing brownish paler in basal area or brown. Cilia whitish, brownish at apex.

MALE GENITALIA: reported in figures 3, 5, 6, 7. Uncus vestigial in form of a weak apical prominence of tegument (Figs 5-6). Valva simple with neck weakly incised ventrally; sacculus long with distinct caudal angle; ventral lobe of cucullus weakly developed;

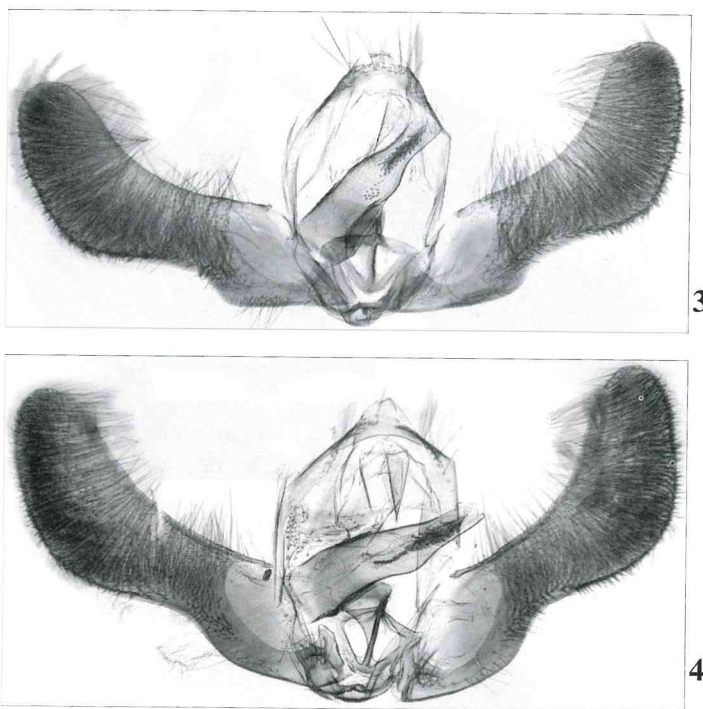


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Figs 1-2 - Adults. *Pammene castanicola* Trematerra sp.n. (1); *Pammene fasciana* (Linnaeus, 1761) (2).



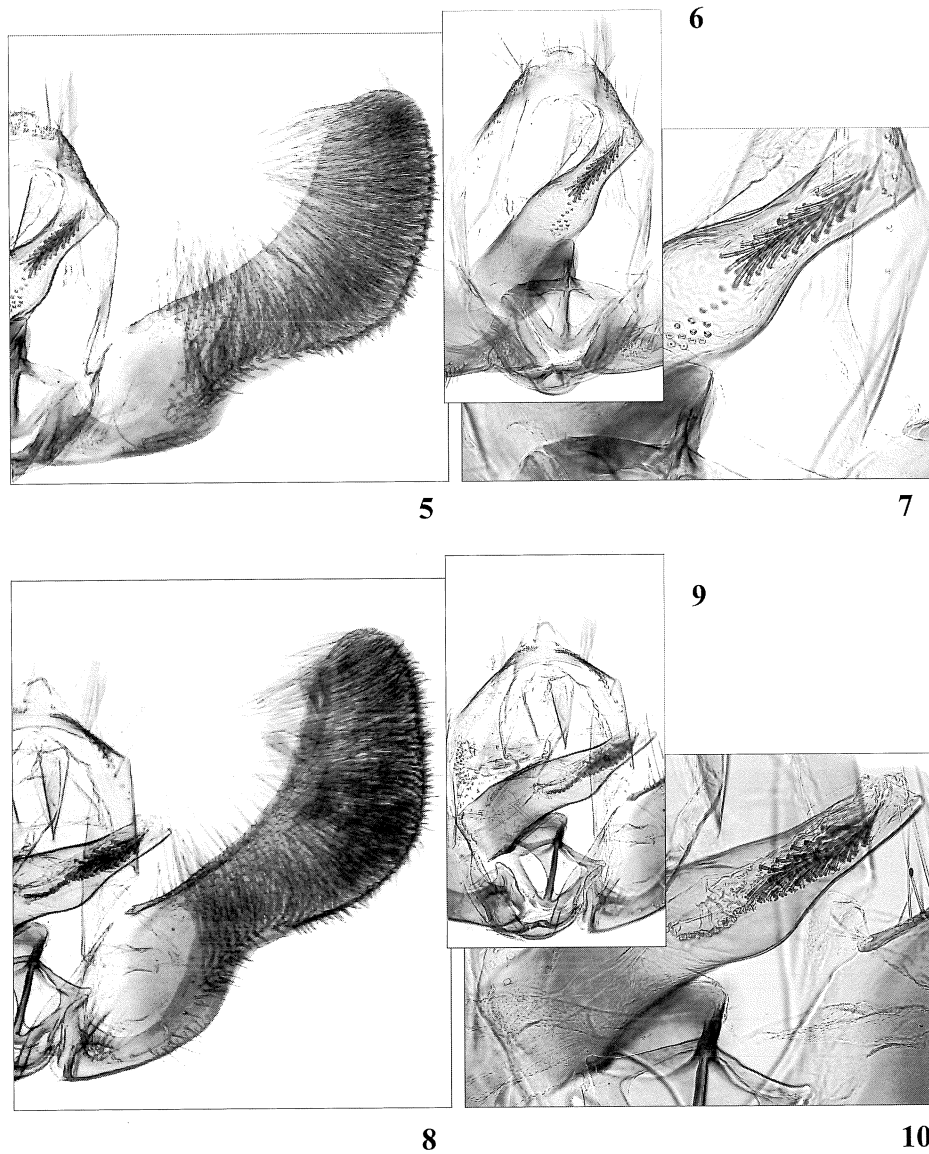
Figs 3-4 - Male genitalia of *Pammene castanicola* Trematerra sp.n. (3); *Pammene fasciana* (Linnaeus, 1761) (4).

neck of valva slightly slenderer than cucullus, with hairs and spines (Fig. 5). Aedeagus distinctly narrow beyond middle, cornuti of deciduous type long and arranged in a patch, cornuti of non-deciduous type arranged in a row (Figs 6 and 7).

MATERIAL EXAMINED: 1 male, holotype, labelled as follows: Sicilia (Italy), Castagneti di Fornazzo, Milo (Catania), 800-1000 m, 26.IV.2007, leg. M. Clausi; 2 males, allotypes, with the same label (collection Trematerra, Campobasso, Italy).

BIOLOGY: Larvae of genus *Pammene* are chiefly carpophagous and cryptophagous, some species, however, make galls, some feed in leaves, or more rarely in seeds, stems, or under bark. The feeding pattern may change in course of development. The food plants are various families of trees both conifers and deciduous, Komai (1999) lists 13 plant families. Hibernates the last instar larvae which pupate in spring chiefly in their feeding places or shelters. The species are univoltine, rarely appear in two generations yearly. Some species are important economically.

P. castanicola. Larva found in October-April in fruits of *Castanea sativa*; the attacked fruits dry and drop. Pupa in March-May. Adults in flight from April till August.



Figs 5-10 - Male genitalia of *Pammene castanicola* Trematerra sp.n., valva (5), aedeagus (6), cornuti (7); *Pammene fasciana* (Linnaeus, 1761), valva (8), aedeagus (9), cornuti (10).

Adults of *P. castanicola* were found in traps used in the monitoring of *P. fasciana*, the traps were baited with the synthetic pheromone (Z)-8-dodecenyl acetate + (Z)-8-dodecen-1-ol. Adults were collected in April, June, July and early August of 2003 and in April, May, June, July and early August in 2007 with two flight peaks the first in April-May and the second in July-August. The Mount Etna localities (Catania province, Sicily) monitored were the following: Fornazzo, Monte Crisimo, Monte Intraleo, Pineta Biancavilla, Tarderìa and Trinciala. During October and November of 2007 larvae of *P. castanicola* were found inside the fruits of chestnuts collected in the following localities: Fornazzo, Monte Crisimo, Monte Intraleo, Piano Lepre, Pineta Biancavilla, Tarderìa and Trinciala.

REMARKS: Externally the new species resembles some *Pammene* moths like *P. fasciana*. In male genitalia it is similar to *P. fasciana*, the differences are small, mainly in the size that is bigger in *P. castanicola*. Sacculus long with distinct caudal angle in *P. castanicola*; sacculus short, with rather distinct caudal angle in *P. fasciana* (Figs 5 and 8). Aedeagus distinctly narrow beyond middle in *P. castanicola*, ventral part of aedeagus with ventral prominence in *P. fasciana* (Figs 6 and 9); cornuti of deciduous type arranged in a patch in *P. castanicola*, cornuti of deciduous type arranged in a row in *P. fasciana* (Figs 7 and 10).

The genetic distances between *P. castanicola* and *P. fasciana* were confirmed by CO1 analysis (Casiraghi, unpubl. data).

DERIVATIO NOMINIS: The name of new *Pammene* derives from the chestnut food plant *Castanea sativa* Miller.

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REFERENCES

- BROWN J.W., 2005 - Tortricidae (Lepidoptera). In: World Catalogue of Insects 5. - Apollo Book Aps, Stenstrup, Denmark: 1-741.
- DANILEVSKII A.S., KUZNETSOV V.I., 1968 - Listovertki (Tortricidae). Triba plodozhorki (Laspeyresii-ni). - Fauna SSSR, Nasekomye Cheshuekrylye. Nauka (novaya seria), Leningrad: 1-636.
- KOMAI F., 1999 - A taxonomic review of the genus *Grapholita* and allied genera (Lepidoptera: Tortricidae) in the Palearctic region. - Ent. scand., suppl. 55: 1-226.
- RAZOWSKI J., 1989 - The Genera of *Tortricidae* (Lepidoptera). Part II: Palearctic *Olethreutinae*. - Acta zool. cracov., 32 (7): 107-328.
- RAZOWSKI J., 2003 - Tortricidae of Europe. Volume 2. *Olethreutinae*. - Frantisek Slamka, Bratislava: 1-301.

TREMATERRA P., 2003 - Catalogo dei *Lepidoptera Tortricidae* della fauna italiana. Geonemia, distribuzione in Italia, note biologiche, identificazione. - Boll. Zool. agr. Bachic., Ser. II, 35 (suppl. 1): 1-270.

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