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## Two new species of the genus *Pammene* Hübner, 1875 from Jordan (Lepidoptera Tortricidae)

**Abstract:** Two new species of *Pammene* Hubner, 1875 (Lepidoptera Tortricidae) are described based on the specimens collected in Jordan. They are *P. calliprinosa* Trematerra sp.n. and *P. massai* Trematerra sp.n. Diagnostic characters of each new species are given, and photos of adults and male and female genitalia are provided.

**Riassunto:** Due nuove specie del genere *Pammene* Hübner, 1875 dalla Giordania (Lepidoptera Tortricidae).

Sono descritte due nuove specie di Lepidoptera Tortricidae appartenenti al genere *Pammene* Hübner, 1875, sulla base di esemplari raccolti in Giordania. Le nuove specie sono *P. calliprimosa* Trematerra sp.n. e *P. massai* Trematerra sp.n. Vengono forniti i caratteri morfologici ed ecologici, le foto degli adulti e dei genitali maschili e femminili.

**Key words:** new species, *Pammene*, Lepidoptera Tortricidae, Jordan.

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### INTRODUCTION

Nieves-Aldrey & Massa (2006) reported the results of a survey of the *Hymenoptera Cynipidae* of Jordan, a country not previously investigated. During 1999-2000, Professor Bruno Massa visited Jordan three times (during the following periods: 22.V-3.VI.1999; 23.X-4.XI.1999; 23.IV-3.V.2000) and collected galls induced by cynipid wasps. The collecting areas for galls lie mainly in the highlands of Jordan, where large variations in climate, geology, and vegetation occur (Albert *et al.*, 2004). Forests of *Pinus halepensis* Miller and evergreen oak *Quercus calliprinos* Webb. (= *Quercus coccifera* L.) occur on different soils at altitudes up to 1200 m. Two other deciduous oaks occur in Jordan, namely *Q. ithaburensis* (Decne.) Boiss. at lower altitudes, and *Q. boissieri* Reut. (= *Q. infectoria* subsp. *veneris* (Schn.) Meikle), which has scattered stands at over 700 m altitude, particularly near Ajlun.

Collected galls were stored in bags, transferred to Italy, and reared in small boxes in the climatic conditions of Palermo (Sicily) for 3 years after collection in order to obtain gall-inducers, parasitoids, and inquiline. Specimens that emerged were mounted and labelled for identification (Nieves-Aldrey and Massa, 2006). Among other inquiline insects, some specimens

of *Lepidoptera Tortricidae* belonging to the genus *Pammene* Hübner, 1875 occurred. In particular, one specimen belongs to *Pammene gallicolana* (Lienig & Zeller, 1846), while other specimens are unknown and belong to two different new taxa, which are described below: *P. calliprinosa* Trematerra sp.n. and *P. massai* Trematerra sp.n.

### *Pammene gallicolana* (Lienig & Zeller, 1846)

**MATERIAL EXAMINED.** 1 male, Giordania (Jordan), Juddayta, (Ajlun), 29.IV.2000, ex *Q. ithaburensis*, ex galle (galls) of *A. grossulariae* – sf. (emerged) XI.2000.

**DIAGNOSIS.** Externally *P. gallicolana* is similar to *P. albuginana* (Guenée) and *P. ignorata* Kuznetsov. The male genitalia are comparable to those in *Pammene argyrana* Hübner, but with shorter, more convex ventral edge of sacculus and longer cucullus broadest near middle.

**BIOLOGY.** Larva feeds (IX-X) on *Quercus* in dry hymenopteran galls. In autumn, a full-grown larva spins a cocoon in which it hibernates and then pupates next spring (Razowski, 2003). After Danilevsky & Kuznetsov (1968), this species utilizes galls of *Biorhiza pallida*

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(Olivier), *B. terminalis* (Fabricius) and *Cynips quercus* (Geoffroy). Moth flies: V-VI; in Moldavia in VI and X what concerns probably two generations a year (Razowski, 2001, 2003).

Our *P. gallicolana* was obtained on late November from galls of *Andricus grossulariae* Giraud (Hymenoptera Cynipidae) on *Quercus ithaburensis* (Decne.).

DISTRIBUTION. European species whose repartition area is included in that of *Quercus robur* Linnaeus. Eastwards it reaches Ukraine and Moldavia.

***Pammene calliprinosa* Trematerra sp.n.**

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MATERIAL EXAMINED. Holotype, 1 male, Giordania (Jordan), Judayta, (Ajlun), 29.IV.2000, *Q. calliprinos*, leg. B. Massa; 1 male, Giordania (Jordan), Judayta, (Ajlun), 29.IV.2000, *Q. calliprinos*, leg. B. Massa; 1 female, Giordania (Jordan), Judayta, (Ajlun), 29.IV.2000, *Q. calliprinos*, ex *Andricus kollari*.

Deposited in the Trematerra Collection, Campobasso, Italy.

DESCRIPTION. Adult (Fig. 1a). Wingspan 12-14 mm. Head, thorax and abdomen light brown. Palps yellowish, brown in apical part. Ground color of forewing yellowish suffused with pale brown; distal and costal areas slightly mixed hazel. All parts distinctly strigulated with brown, apex and termen pinkish creamy; costal strigulae whitish-creamy; dividings dark brown. Speculum with inner and outer lines and 4 inner black streaks. Group of larger strigulae in median part of wing. Postbasal fascia weak, preserved at dorsum; median fascia noncontinuous. Subterminal blotch black. Cilia creamy brown. Hindwing greyish-brown, paler basally; cilia yellowish with medial line brown.

Variation: Shade of ground color and presence of yellowish dorsal patch.

Unfortunately, part of specimens studied has been tagged with entomological glue and are partially damaged.

Male genitalia (Fig. 1b). Top part of tegumen subtriangular, apical prominence distinct, hairy; valva elongated, slender, with rather weak densely bristled neck; caudal angle of sacculus small, cucullus long, spined, with very weak ventral prominence; ventral incision shallow; basal cavity roundish; aedeagus devel-

oped, long, distally narrowed, with minute cornuti, lanceolate and spiny. Vinculum and saccus robust.

Female genitalia (Fig. 1c and d). Papilla analis developed; apophysis anterior and apophysis posterior of the same length; sterigma large, robust, expanded anteriorly, sclerotized, cup-shaped; subgenital sternite with lateral sharp corners; ductus bursae short; cingulum elongated, like tubular in shape; corpus bursae large, subpiriform, signa two evident spines; proximal part of corpus bursae sclerotized.

DIAGNOSIS. The adult of *P. calliprinosa* is externally similar to *P. amygdalana* (Duponchel). The male genitalia of *P. calliprinosa* are distinguished by valvae conformation more elongated and thinner. The female genitalia differ in their larger, anteriorly expanded, sclerotized and cup-shaped sterigma; the cingulum is longer.

BIOLOGY. Adults of *P. calliprinosa* were obtained on late April from galls of *Andricus kollari* Giraud (Hymenoptera Cynipidae) on *Quercus calliprinos* Webb. (= *Quercus coccifera* L.).

ETYMOLOGY. The name of the new species, *Pammene calliprinosa*, refers to the host plant *Quercus calliprinos*.

***Pammene massai* Trematerra sp. n.**

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3AE23A2F-8F38-4E13-ACDD-D8F3FBBE85A3

MATERIAL EXAMINED. Holotype, 1 male, Giordania (Jordan), Dair Abi Said, 30.IV.2000, ex galle (galls) *H. levantina*, ex *Salvia* sp. – sf. XI.2001. leg. B. Massa.

Deposited in the Trematerra Collection, Campobasso, Italy.

DESCRIPTION. Adult (Fig. 2a). Wingspan 11 mm. Head, palps, and thorax dark grey sprinkled with grey; abdomen dark brown. Ground color of forewing greyish dark brown, pale ferruginous, in basal and partially costal areas of wing ochre mixed brown; creamy suffusions intermixed with blackish scales in the basal third of wing; in the apical half of the anterior margin of the wing five distinct double whitish costal streaks. The space between the streaks is dark brown; speculum differentiated by presence of refractive markings. Markings rudimentary: basal blotch and tornal portion of median fascia diffuse. Cilia dark brown blackish. Hindwing greyish-brown paler basally; cilia greyish or with brownish parts.

Unfortunately, the specimen studied has been tagged with entomological glue and is partially damaged.

Male genitalia (Fig. 2b-e). Tegumen large, simple, distal part with long bristles; caudal angle of sacculus broadly rounded; basal cavity subrectangular; neck of valva very slender, incision broad, subcircular; cucullus elongate, densely bristled, with distinct subtriangular process ventrally; the length of the cucullus is approximately two times larger than the width. Aedeagus developed characteristic shape swollen basally and significantly narrowing distally; longer than the cucullus; the cornuti form two groups, one group aligned and spiny, the other cornuti are lanceolate in shape.

Female genitalia. Unknown.

DIAGNOSIS. Externally *P. massai* is similar to *P. subsalvana* Kuznetsov. It can be included in *Pammene splendidulanae* group, with *P. griseomaculana* Kuznetsov, *P. salvana* Staudinger, and *P. insolentana* Kuznetsov, and *P. subsalvana* Kuznetsov (Danilevsky &

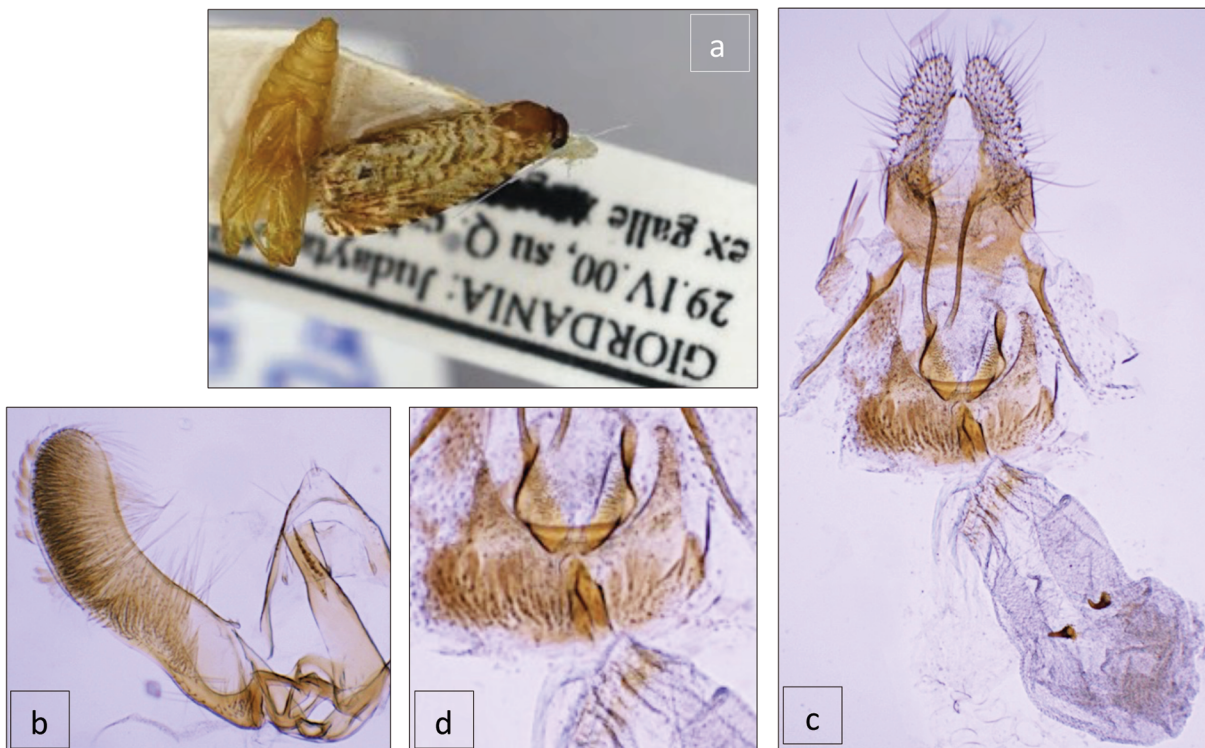
Kuznetsov, 1968; Kuznetsov, 1987, 2005). The male genitalia of *P. massai* are similar to a few allied species, it can be distinguished by shapes of cucullus and the aedeagus, and by cornuti grouped in two clusters, one aligned and spiny, the other of lanceolate in shape.

BIOLOGY. Our adult of *P. massa* were obtained on late April from galls of *Hedickiana levantina* (Hedicke) (*Hymenoptera Cynipidae*) on plants of *Salvia* sp.

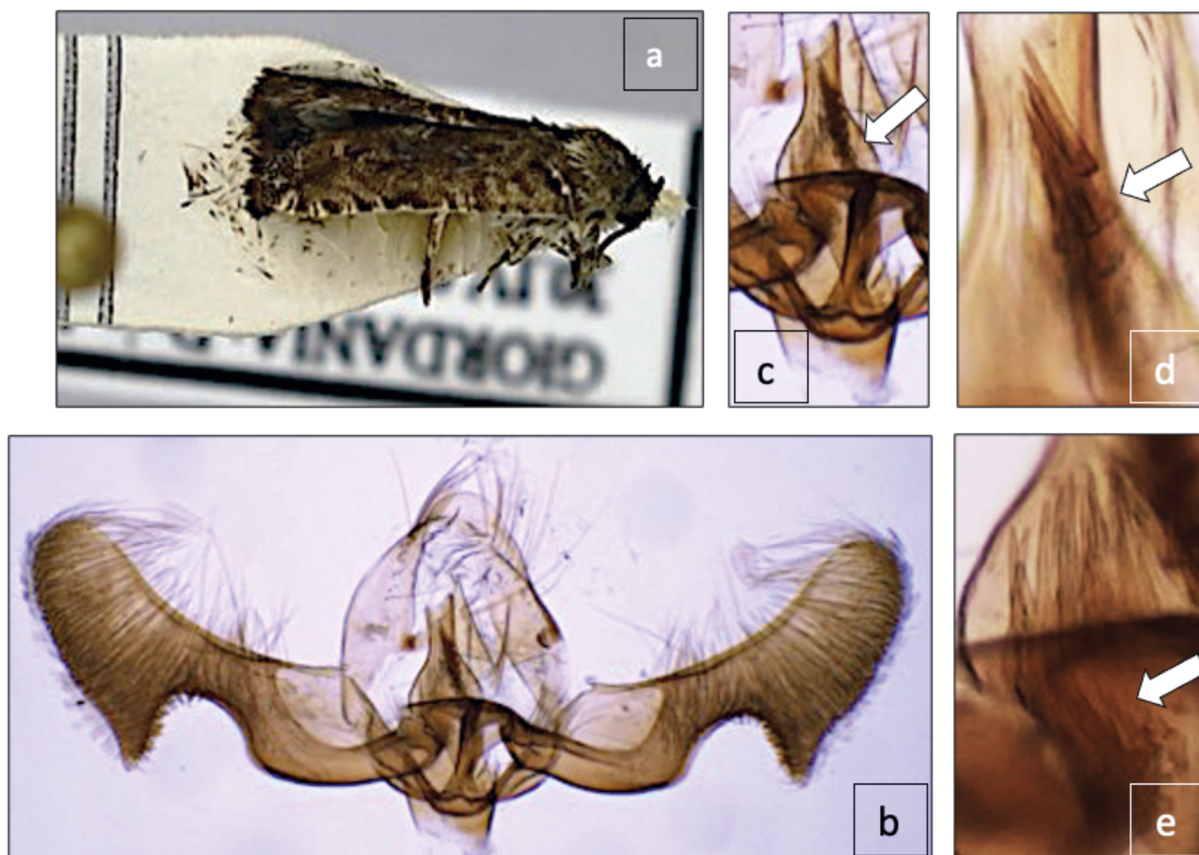
ETYMOLOGY. The name of the new species *Pammene massai* refers to the colleague prof. Bruno Massa (University of Palermo, Italy).

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**Fig. 1.** *Pammene calliprinosa* Trematerra sp. n.: adult male (a), male genitalia (b), female genitalia (c), antrum, colliculum and proximal part of corpus bursae (d).



**Fig. 2.** *Pammene massai* Trematerra sp. n.: adult male (a), male genitalia (b), aedeagus (c); spined cornuti (d), lanceolate cornuti (e).

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