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CYDIA MOLYBDANA (CONSTANT, 1884) AND
CYDIA AMPLANA (HÜBNER, [1796-1799]),
 WITH NOTES ON RELATED SPECIES
 (LEPIDOPTERA TORTRICIDAE)

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Trematerra P., Colacci M. – *Cydia molybdana* (Constant, 1884) and *Cydia amplana* (Hübner, [1796-1799]), with notes on related species (Lepidoptera Tortricidae).

The present paper reports and illustrates some morphological characters and ecological aspects on Lepidoptera Tortricidae *Cydia molybdana* (Constant) and *C. amplana* (Hübner), and on related species *C. rymarczyki* Varenne & Nel and *Cydia sammuti* Diakonoff.

KEY WORDS: *Cydia molybdana*, *Cydia amplana*, *Cydia rymarczyki*, *Cydia sammuti*.

INTRODUCTION

The genus *Cydia* Hübner, [1825] 1816 was usually subdivided in several groups treated often as subgenera. DANILEVSKY and KUZNETSON (1968) distinguished *Endopisa* Guenée, 1845, *Laspeyresia* Hübner, [1825] 1816 (= *Cydia* [1825] 1816) and *Kenneliola* Plact, 1951, separating them on basis of a combination of some minor characters. In revision of Palearctic genera of Lepidoptera Tortricidae, RAZOWSKI (1989) distinguished and characterized *Cydia* s. str., *Collicularia* Obraztsov, 1960 and *Kenneliola*, later RAZOWSKI (2003) treated these subgenera as the species group only.

In that context, DANILEVSKY and KUZNETSON (1968) considered *Cydia molybdana* (Constant, 1884) to be a subspecies of *Cydia amplana* (Hübner, [1796-1799]), consequently *C. molybdana* was treated as a synonym of *C. amplana* in RAZOWSKI (2003) and in BROWN *et al.* (2005). However, LERAUT (1980), CHAMBON (1999), KARISCH and PINZARI (2010) and VARENNE and NEL (2013) observing constant differences in the male and female genitalia removed *C. molybdana* from the synonymy of *C. amplana*. Furthermore, KARISCH and PINZARI (2010) reported that *C. molybdana* is only distributed in the coastal regions and hills close to the Mediterranean Sea, while *C. amplana* occurs in large parts of the mountains of Central and South-East Europe. *C. molybdana* was confirmed *bona species* by DNA Barcoding analysis by HUEMER *et al.* (2025).

Referring to this group of species, DIAKONOFF (1986) described *Cydia sammuti* from Malta based on a male collected at Buskett on June 1981. According to DIAKONOFF (1986), the exact position of *C. sammuti* within the subgenus *Kenneliola* was uncertain without the testimony of the females. It should probably be placed at the *exquisitana* end of it. RAZOWSKI (2003) in 'Tortricidae of Europe' placed *C. sammuti* between *C. exquisitana* (Re-

bel, 1899) and *C. leguminana* (Lienig and Zeller, 1846). However, in the opinion of KARISCH and PINZARI (2010), the figure of the male genitalia of the holotype of *C. sammuti* shows that this species belongs to *Cydia molybdana*.

At this regard, in the last years we had the opportunity to study many samples of Tortricidae collected on Maltese Islands by Paul M. Sammut (TREMATERRA and SAMMUT, 2007), and among the various specimens we found also some females of *Cydia sammuti*. Moreover, based on recently collected material from Malta, *Cydia aldocataniae* (Trematerra, 2019) was described, and *Cydia rymarczyki* Varenne and Nel, 2013 was reported for the first time from Buskett. The latter species was previously cited for coastal plain of Alpes-Maritimes (France) and Crete (Greece) (TREMATERRA, 2019).

According to VARENNE and NEL (2013), *C. rymarczyki* is closely related to *C. amplana* and *C. molybdana*, and in France the three species coexists. *C. rymarczyki* presents a habitus rather similar to that of *C. amplana* but more contrasted and browner, especially in the males. The male genitalia of *rymarczyki* are similar to those of *molybdana* and the female genitalia are related to those of *amplana* (VARENNE and NEL, 2013). About it, HUEMER and NIEUKERKEN (2021) obtained a 636 bp DNA barcode sequence of the holotype of *C. rymarczyki* which is ca. 5.9% divergent from *C. amplana*, the nearest neighbor in BOLD.

Following, in the present paper, we list the examined material and give and illustrate the morphological and ecological aspects related to *C. molybdana*, *C. amplana*, *C. rymarczyki*, and *C. sammuti*.

Cydia molybdana (Constant, 1884) Fig. I, 1-7

MATERIAL EXAMINED

Italy, Puglia, Chieuti, Torre Fantine, Foggia, 5 m, 8.X.1996 and 7.IX.1997, leg. A. Sciarretta.

ADULT (Fig. I, 1-2)

Wingspan 14-18 mm. Head light brown, cream; palps brownish with terminal segment darker, basally lighter. Thorax ochreous cream. Ground colour of forewing ochreous cream, brownish orangeous. Pattern variable, often reduced with only some silvery strigulae from costa, an interrupted silver line in marginal field and weak pale brown suffusion. Speculum with silvery outer lines and black inner spots in a more or less brownish field. Dorsal patch obsolescent. Cilia brownish. Hindwing brownish orangeous more light basally, cilia cream brownish.

From the same place some specimens with a strongly contrasting coloration, a distinct pale dorsal patch and conspicuous pale brownish and silvery strigulae. In general coloration more brownish than in *C. amplana*.

MALE GENITALIA (Fig. I, 3-5)

Tegumen slender with minute apical prominence. Caudal angle of sacculus not prominent; ventral incision only slight and cucullus joint with gentle thickening. No horn above. Basal cavity long and oval; short bristles ventro-proximal of the cavity. Processus basalis broad. Cucullus long, rounded ventro-proximal. Aedeagus rather long, angled and tapered to the apex, with many minute scales and various thorns ventro-laterally. Coecus penis enlarged.

FEMALE GENITALIA (Fig. I, 6-7)

Sterigma subtriangular, two times longer than wide, posteriorly broadened. Ostium bursae narrow, colliculum narrow. Ductus bursae rather long and thin, slightly sclerotized. Bursa copulatrix long, with two signa. Subgenital sternite broad, longer than ductus bursae, with lateral corners of hind margin triangular.

BIOLOGY

Adults are usually collected in May-July (in our case they were captured in September-October), larva feeds in acorns of *Quercus ilex* L. and *Q. suber* L., also on fruit of *Corylus* and *Juglans*, often close to moist habitats such as coastal marches and lagoons (KARISCH and PINZARI, 2010; VARENNE and NEL, 2013).

DISTRIBUTION

Reported in Southern France, Italy, former Yugoslavia (Croatia), Malta, Greece, Turkey, Crete and Cyprus (KARISCH and PINZARI, 2010; VARENNE and NEL, 2013; HUEMER *et al.*, 2025).

COMMENTS

DNA Barcoding analysis confirmed *C. molybdana* as *bona species* (HUEMER *et al.*, 2025).

Cydia amplana (Hübner, [1796-1799]) Fig. II, 1-7

MATERIAL EXAMINED

Greece, Pelion, Portaria, 750 m, 5.IX.2016, leg. Colacci.

Additional records. Bari, Puglia, Italy, 15-20.IX.1980, leg. Parenzan; Calabria, Fiume Argentino, Orsomarso, Cosenza, Italy, 4.IX.1991, leg. Hausmann; Basilicata, Rionero in Vulture, Potenza, Italy, 24.IX.2001, leg. Sciarretta-Gentile; Molise, Bosco la Difesa, Isernia, 27.VIII. 2007, leg. Sciarretta; Molise, San Giuliano del Sannio, Campobasso, 29.IX.2011, leg. Colacci.

ADULT (Fig. II, 1-2)

Wingspan 15-20 mm. Head light brownish; palps brownish, basally lighter. Thorax ochreous creamy. Ground colour of forewing ochreous creamy in distal half of wing even brownish ochreous or pale brownish orangeous; dorsal patch creamy with pale brownish lines of which the median is best developed, with oblique proximal edge and distal edge rather perpendicular to dorsum; costal strigulae whitish, dividings brown; speculum with a few inner spots and posterior refractive line better developed than the anterior line. Subtornal blotch brown-grey. Cilia dark brown. Hindwing brownish, slightly lighter basally especially in male. Cilia creamy brownish, with brown base line.

MALE GENITALIA (Fig. II, 3-5)

Tegumen slender, lateral parts scaled. Caudal angle of sacculus not prominent, indistinct; ventral incision weak marked with small median prominence and dorsal and anterior process. Basal cavity short, nearly subtriangular; field with many strong bristles ventro-proximal of the cavity. Processus basalis small. Cucullus rounded ventro-proximally. Aedeagus rather long, cylindrical, slightly angled and tapered in its distal half, with 1-3 minute dorsal thorns postmedially.

FEMALE GENITALIA (Fig. II, 6-7)

Base of apophyses spatula-shaped. Sterigma quite narrow, slightly constricted in middle, three times longer than wide. Ostium bursae enlarged, colliculum large, broad distally, slender in proximal part. Ductus bursae short, sclerotized, broadening towards ostium. Bursa copulatrix long with small neck of copulatory pouch, and two signa. Subgenital sternite rather small, long than ductus bursae, with lateral corners of hind margin extended.

BIOLOGY

Adults collected from July to October. Larva feeds in acorns of *Quercus robur* Ehrh., *Q. iberica* Steven ex M. Bieb., *Q. ilex* L., *Corylus avellana* L. and *Juglans regia* L., fruits of *Fagus sylvatica* L. and *Castanea sativa* Mill.. Occasionally recognized as pest

DISTRIBUTION

In oak-rich, thermophilus deciduous forests in Central, South-East and Southern Europe, western Europe, around the Mediterranean common in hills and mountain slopes, in deciduous forests and forest steppes of the Caucasus, and also known from Asia Minor and Syria.

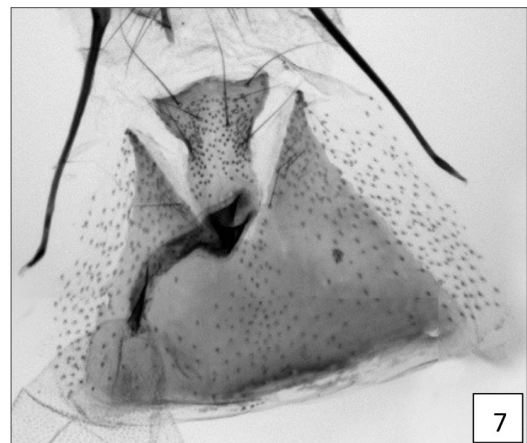
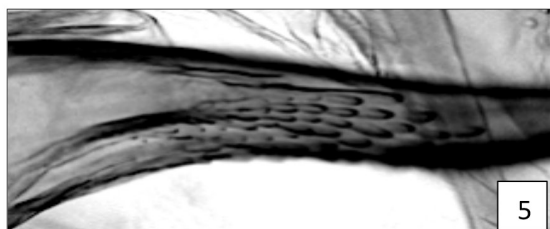
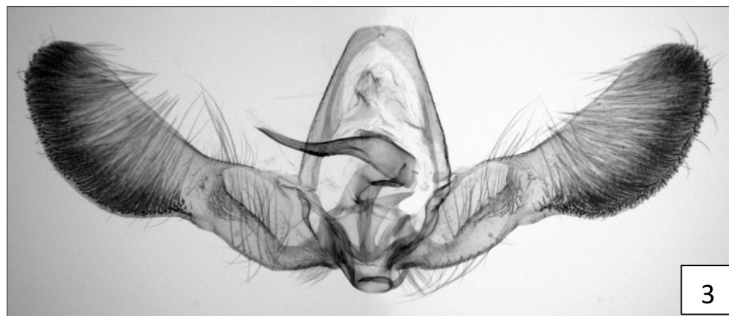


Fig. I – *Cydia molybdana* (Italy, Puglia, Chieuti, Torre Fantine, Foggia, 5 m, 8.X.1996 - 7.IX.1997, leg. A Sciarretta). Adult male (1); adult female (2); male genitalia (3); aedeagus (4), with minute thorns laterally (5); female genitalia (6); sterigma, ductus bursae and subgenital sternite (7).

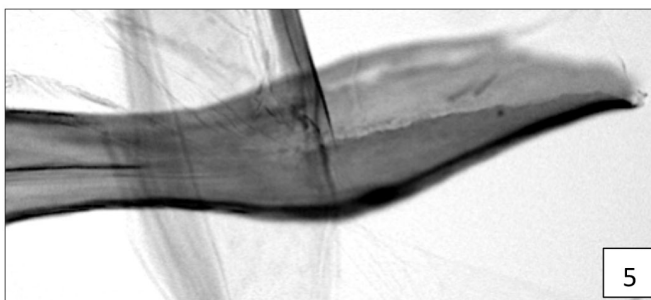
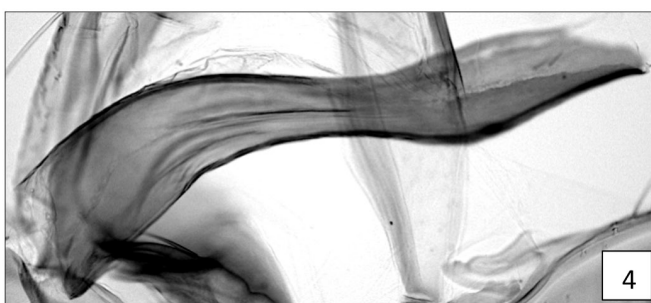
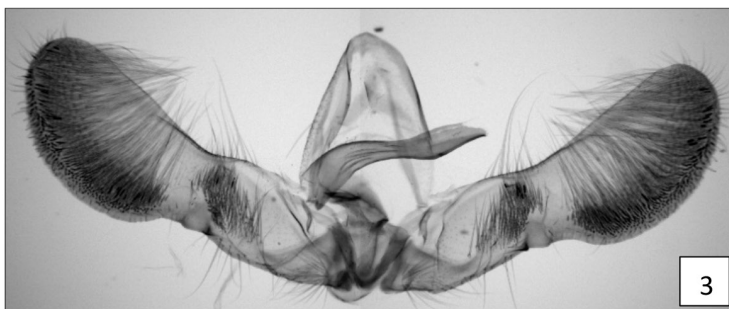


Fig. II – *Cydia amplana* (Greece, Pelion, Portaria, 750 m, 5.IX.2016, leg. M. Colacci). Adult male (1); adult female (2); male genitalia (3); aedeagus (4-5); female genitalia (6); sterigma, ductus bursae and subgenital sternite (7).

COMMENTS

C. amplana, BIN: BOLD: ABW2550; intra-BIN variation (maximum distance): 1.19%; nearest neighboring BIN: *Cydia rymarczyki* Varenne and Nel (5.92%) (LATELLA *et al.*, 2025).

***Cydia rymarczyki* Varenne & Nel, 2013 Fig. III, 1-7**

MATERIAL EXAMINED

Malta, Buskett, 30.V.2014, leg. A. Catania; Malta, Buskett, 1.VI.2014, leg. A. Catania.

Additional records. Italy, Molise, Sant'Agapito, Isernia, 679 m, 27.VIII.2019, 12.XII.2019, 16-17.XII.2019, 21.XII.2019, 27.XII.2019, 6.I.2020, leg. Colacci-Goglia.

ADULT (Fig. III, 1-2)

Wingspan 10-16 mm. Head light brown, orangeous; palps brownish, basally lighter cream, terminal segment darker. Thorax ochreous. Pattern of the forewing variable, often reduced with brownish and silvery strigulae from costa, an interrupted silver line in marginal field and weak pale brown suffusion. Speculum concolorous with wing with silvery outer lines and black inner spots. Dorsal patch of the forewing obsolescent. Cilia brownish-black. Hindwing brownish slightly lighter basally, cilia creamy brownish basally.

From the same place and date some specimens with a strongly contrasting coloration, a distinct pale dorsal patch and conspicuous pale brownish and silvery strigulae.

MALE GENITALIA (Fig. III, 3-5)

Tegumen slender, lateral parts claps-like; minute apical prominence not visible in all cases. Caudal angle of sacculus slightly prominent. Basal cavity short, nearly oval; field with many strong bristles ventro-proximal of the cavity. Processus basalis rather small. Cucullus rounded ventro-proximally. Aedeagus rather long curved and thin, slender in its distal half and with many minute scales, various thorns and 3 denticles laterally and ventrally.

FEMALE GENITALIA (Fig. III, 6-7)

Sterigma rather large, constricted in middle, proximally narrow, two times longer than wide. Colliculum large, broad distally, slender in proximal part; cingulum not differentiated. Ductus bursae curved, rather short, sclerotized, broadening towards ostium. Bursa copulatrix long, with two signa. Subgenital sternite small, slightly longer than ductus bursae, lateral corners of hind margin extended.

BIOLOGY

Bivoltine, adults collected in April-June and late in August-September. According to VARENNE AND NEL (2013), in France *C. rymarczyki* coexists with *C. amplana* and *C. molybdana*. As with these two species, hatch-

ing occurs mostly in September. From 2013 to 2017, in Malta adults of *C. rymarczyki* were obtained from late May to mid-June from larvae in acorns of *Quercus ilex* L..

DISTRIBUTION

France (coastal plain of Alpes-Maritimes), Italy, Pantelleria, and Malta (Buskett), also in Crete (previously cited as *Cydia amplana*, HUEMER *et al.*, 2025) (TREMATERRA, 2019; TIMOSSI, 2020; BARBERIS and NEL, 2023; LATELLA *et al.*, 2025).

COMMENTS

C. rymarczyki, BIN: BOLD: ACF9264; intra-BIN variation (maximum distance): 1.28%; nearest neighboring BIN: *Cydia amplana* (5.92%) (LATELLA *et al.*, 2025).

***Cydia sammuti* Diakonoff, 1986 Fig. IV, 1-7**

MATERIAL EXAMINED

Malta, Buskett, 30.V.2014, leg. P. Sammut; Malta, Buskett, 6.VI.2019, leg. P. Sammut; Malta, Buskett, 7.VI.2019, leg. P. Sammut.

ADULT (Fig. IV, 1-2)

Wingspan 13-16 mm. Head light brownish; palps cream, terminal segment pale tawny-ochreous. Thorax creamy-ochreous. Ground colour of forewing creamy orange fuscous suffused and densely strigulated with brownish grey; costal strigulae indistinct, paler than ground colour; dividings brownish grey, well developed also in basal half of wing; speculum concolorous with wing with silvery outer lines and black inner spots. Posterior refractive line better developed than the anterior line. Dorsal patch obsolescent. Cilia orange-fuscous. Hindwing dark brown, basally brownish, cilia creamy, mixed ochreous in apical half.

MALE GENITALIA (Fig. IV, 3-5)

Tegumen high, top truncate, gently notched with few setae. Valve oblong and rather narrow; cucullus oblong-semioval, densely and evenly bristled sacculus short, with a basal patch of bristles; bristles of diverse length along lower edge of basal cavity. Basal cavity elongated. Processus basalis rather broad. Aedeagus sinuate, gradually narrowed, median third with distinct sclerotic scobinations, scales and minute thorns, first spread around aedeagus, then only along ventral surface.

FEMALE GENITALIA (Fig. IV, 6-7)

Posterior and anterior apophysis of the same length. Sterigma large, subtriangular, proximally narrow. Ostium bursae large; colliculum sinuous large, broad distally, slender in proximal part; cingulum not differentiated. Ductus bursae short, sclerotized, broadening towards ostium. Bursa copulatrix long, piriform, with developed neck of copulatory pouch, and two signa. Subgenital sternite large, long as the ductus bursae, with lateral corners

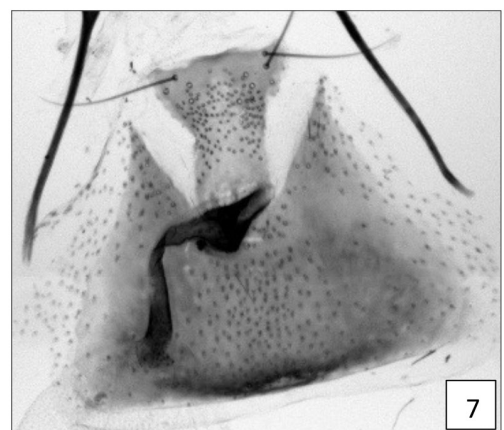
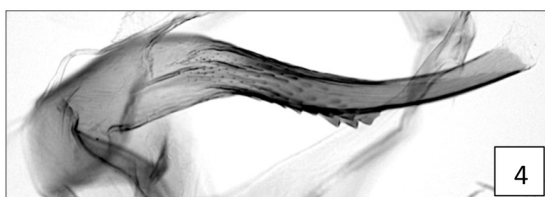
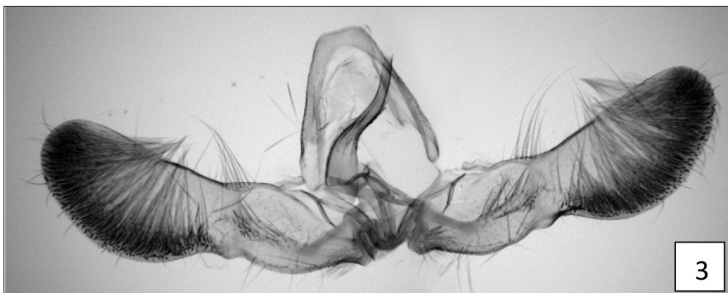


Fig. III – *Cydia rymarczyki* (Malta, Buskett, 30.V.2014-1.VI.2014, leg. A. Catania; Italy, Molise, Sant'Agapito, Isernia, 679 m, 27.VIII.2019, leg. Colacci, Goglia). Adult males, Buskett (1), adult female, Sant'Agapito (2); male genitalia (3); aedeagus (4) with minute thorns and denticles laterally (5); female genitalia (6); sterigma, ductus bursae and subgenital sternite (7).

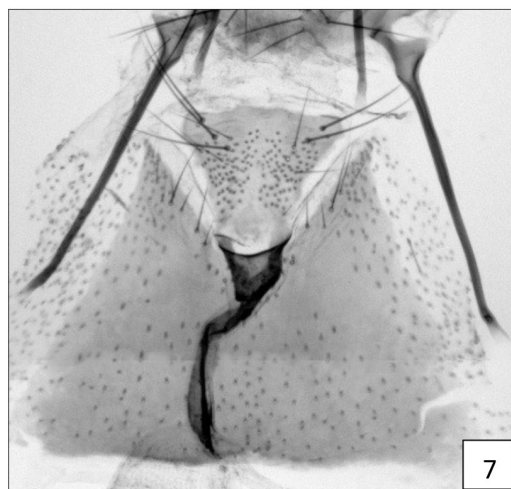
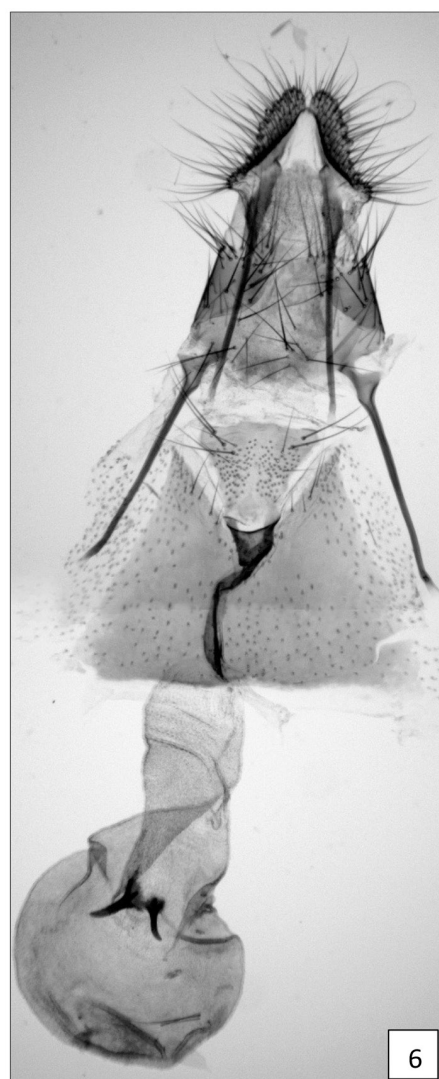
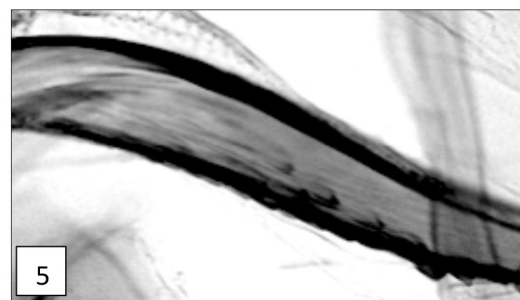
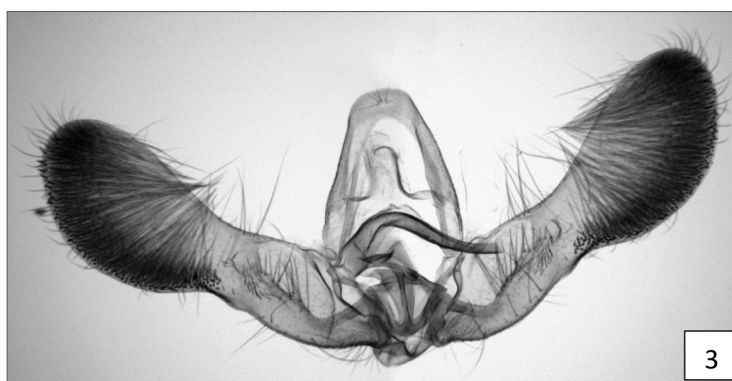


Fig. IV – *Cydia sammuti* (Malta, Buskett, 6-7.VI.2019, leg. P. Sammut). Adult male (1), adult female (2); male genitalia (3); aedeagus (4) and sclerotic combinations along ventral surface (5); female genitalia (6); sterigma, ductus bursae and subgenital sternite (7).

of hind margin extended.

BIOLOGY

Adults recorded in late May early-June at Buskett (Malta) in a locality with as chief vegetation *Pinus halepensis* Miller and the creeper *Lonicera implexa* Atton. In Italy (Veneto) was collected in September near plants of *Lonicera etrusca* Santi (TIMOSSI, 2020).

DISTRIBUTION

Reported from Buskett (Malta), Bosco Nordio, Veneto and Puglia (Italy) (TREMATERRA and SAMMUT, 2007; TIMOSSI, 2020; TREMATERRA, 2020).

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