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Notes on *Cucullia scrophulariphaga* Rambur (Noctuidae) and on a few other interesting Sardinian Lepidoptera seen on the Costa Smeralda in mid-May 1984 (*)

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Summary

The Sardinian larvae of *Cucullia scrophulariphaga* Rambur 1833, found on a hitherto unrecorded plant-species, *Scrophularia trifoliata* L., are described, illustrated and discussed : the author's (1976) tentative key to the mature larvae of the *C. verbasci* group is modified. A list of 19 other Lepidoptera species and one Coleopteron observed in N. E. Sardinia in mid-May, is given with short notes on the life history of seven of these. The larvae of *Apaidia mesogona* Godart were found on a tree, *Juniperus phoenicea*, not usually mentioned in literature as harbouring this moth. Two of the 19 appear not to have been recorded from Sardinia before : – *Thera cupessata* (Hübn.-G.) and *Eupithecia oxycedrata* Rambur. The ♀ genitalia of the latter are compared with those of *E. sardoa* Dietze (hitherto unillustrated).

Introduction

A short visit (May 13-18) to the Costa Smeralda timed to coincide with my daughter's holiday there, could not be expected to produce very valuable entomological results. The season was early, the weather mostly stormy ; the early summer lepidoptera hardly ready to fly ; but it was perhaps a good period for larvae.

This district, previously the poorest and least populated in the island, has now been developed for tourism with the accent on the conservation of the antiquities (few), and nature (flourishing). It is rocky, and its mountains do not exceed about 400 m. It is still largely covered with an intact, typical, West Mediterranean maquis. It has not been, to my knowledge, surveyed for its lepidoptera, collectors having concentrated

(*) Early stages of palaearctic Lepidoptera, XVI.

Fig. A. Lightly-marked immature larva on *Scrophularia trifoliata*.

Fig. B. Strongly-marked immature larva on *S. trifoliata*.

Figs. A-E : Larvae and foodplants of *Cucullia scrophulariphaga* Rambur.

Fig. C. Lightly-marked nearly mature larva (3/4 aspect) on *S. nodosa*.

Fig. D. Lightly-marked, nearly mature larva (lateral aspect) on *S. nodosa*.

rather on the Central heights or the warmer southern cultivated plain. The most important of these records were Turati 1913, Bytinski-Salz 1934, and Hartig & Amsel (1952) ; the most recent (but Rhopalocera only) A. Riemis 1984.

Though I found several of the endemic Lepidoptera flying, the chief interest, for me personally, rested rather in obtaining certain larvae, and trying with partial success, to breed them up. The following somewhat miscellaneous notes will, I hope, interest some readers.

Cucullia scrophulariphaga Rambur 1833

Turati (1923 : 318) was the first to record the capture of a specimen from Sardinia, of this Tyrrhenian endemic, at Aritzo (800 m) in June. It had been first recorded from Ajaccio (S.W. coast of Corsica), its larvae feeding on the coastal sand-growing herb *Scrophularia ramosissima*. Rambur (1833 : 1 ff) gave excellent coloured plates, showing its adult and larva, in that seminal article which laid the firm foundation for a study of this fascinating group of moths (summarised in Wiltshire 1976).

The Sardinian larvae were found in mid-May, still very small, on the roadside in a mountain-pass (150 m) near S. Pantaleone in N.E. Sardinia, indicating that here the moth might well be on the wing in late April.

The foodplant, *Scrophularia trifoliata* (L.), an upright, rather fleshy species with large flowers and fruits, grew in shady spots under large rocks or in road ditches near culverts ; on May 17th the larvae were all in their first or second instar. My return journey by air from Olbia necessitated holding them, it seems, too long in closed boxes, so that, unfortunately, a virus disease developed. On arrival in England they readily accepted two British species of *Scrophularia*, but the disease spread. Their growth permitted comparing them with Rambur's plate and photographing them ; some larvae were also preserved in alcohol, but not one reached the pupal stage.

I also searched *Scophularia ramosissima* on the back-slopes of a sandy beach at Liscia Ruja (near Calai Volpe) but found no larvae on this. Mons. C. E. Rungs, in a personal communication, informed me that, since residing at Ajaccio, he had often searched this plant in similar situations near by, without finding the moth-species in any stage. Can the species have retreated from its maritime habitats in both islands and now only be found in the mountains, on different species ?

Some few example of *Scrophularia peregrina* were also noted at a nuragh near Arzachena, but no larvae were found thereon.

Fig. E. Heavily marked nearly mature larva (3/4 aspect) on *S. nodosa*.

The small larvae at S. Pantaleone were of two types : with, and without, dorsal x-marks, the former type having the black markings more heavily defined, the latter having them reduced to fine spots. They agreed broadly with the RAMBUR plate and text ; this stressed the comparative smallness of the caterpillar. The only difference was that while RAMBUR spoke of a ground-colour "blanc verdâtre souvent plus ou moins teinté d'une légère couleur brunâtre", my own description and photographs indicate, for the Sardinian larvae, a pale green ground colour without brown tinge, marked with yellow also on the segmental joints in addition to the yellow subdorsal lines and yellow-marked sublateral stripe as described by RAMBUR. The dorsal area, moreover, and parts of the lateral area were pale blue in the lightly dotted forms, but darker blue in the immature, strongly marked larval form. These colour differences are perhaps due to the species' adaptation, in Sardinia, to life on a more fleshy green foodplant, instead of the woody perennial *S. ramosissima*, a recumbent dwarf-shrub of sandy soil.

RAMBUR's description of the dorsal x-marks is so worded as to suggest that this form is an alternative one to that with only spots ; however I only observed the x-markings to occur in some larvae in instars 1-3, those of the last two instars lacking the x-marks, and varying between light or heavy black spotting.

The head is concolorous, that is, greenish (NOT reddish, as in SEITZ 3 : 109 ; nor, indeed, did RAMBUR say the head was reddish).

My tentative 1976 key, therefore, (which, I repeat here, applies to *mature* larvae) needs to be corrected as follows :

Corrigendum to Wiltshire's 1976 key

Couplets 1-3, *stet*.

4. Black dorsal markings, separate, reduced to find dots or commas 5
— Black dorsal markings, uniting to form bars, streaks, heavy spots, etc. ..... (for 10 READ) 11
5. Head, red-brown. SPAIN, N-W. AFRICA .... *scrophularivora* GN. (Figs. 10 & 11)
— Head, not red-brown 6
6. With transverse yellow bands. EUROPE, N.W. AFRICA, ASIA ..... *verbasci* (L.) AB.
— With one or more yellow stripes 7
7. With subdorsal yellow strs. SARDINIA & CORSICA .... *scrophulariphaga* RBR.
— With dor. yellow str. running whole length ..... (for 7 READ) 8

Following couplets as in original key but for 7 READ 8, for 8 READ 9, etc., until :

17. Dor. X-marks enclose large yellow subd. spots and extend lat.lly as heavy W-marks. IRAN ..... *kasyi* WILTSHIRE
— Dors. X-marks and lat. spots, heavy but separate, the dorsal ones uniting to form X-marks, on abd. ss. 1-6. EGYPT, IRAQ .... *strigicosta* BOURSIN.

(Couplets 18 and f. as in original key, which, as there stated, for *C. scrophulariphaga*, was based on 1833 description and plate. This species has thus been removed from couplet 17 to couplet 7 as my observations indicated that dorsal X-marks are found in instars 1-3 but not in mature larvae).

The only other species in the *C. verbasci* group known from Sardinia appears to be *Cucullia lychnitis* RAMBUR, noted on *Verbascum* at Porto Santoru, etc., by HARTIG and AMSEL 1952 : this species is a widespread Euroriental element ranging from Britain to Iran.

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Annotated list of Lepidoptera, etc., Costa Esmeralda, mid-May 1984
(N) = apparently new for Sardinia.

Fam. Gelechiidae

Nothris verbascella (Hübner)

A larva found in a spinning on 15.v. in *Verbascum* foliage near Arzachena emerged in Britain on May 31. Euroriental, ranging from W. Europe to Iran.

Fam. Pyralidae

Udea ferrugalis (Hübner)

2 exs, to light, Porto Cervo, 18.v. A widespread migrant.

Pleurophyta ruralis (Scop.)

Two larvae found on *Parietaria* 18.v. at S. Pantaleone, were bred up on *Urtica* in Britain, and two rather yellow examples emerged on 12 & 16.vi, several weeks before British ones. Euro-Siberian.

Aphomia sociella (Hübner)

One female to light at our hotel, Porto Cervo, 17.v. Euroriental.

Acrobasis plumbeatella Turati

Flying by day in the maquis at Liscia Ruja, 2 exs., 16.v., also to light, our hotel, Porto Cervo, 17-18.v. Endemic.

Fam. Papilionidae

No *Papilio* was seen despite the conspicuous abundance of two species of *Ferula* in the district, *F. communis*, and the taller, stickier *F. chiliantha*, and the records of A. Riemis (1984 : 92-3) of both the Sardinian species of *Papilio* near Bonorva and Lenusei, further south in E. Sardinia but about the same time in May 1983. I believe that at least *P. machaon* L. will be found to inhabit N.E. Sardinia. Perhaps I was a week or two early for them there, although Bytinski-Salz (p. 60) reports from the extreme south the first brood of both *P. machaon* & *hospiton* as flying in March-April.

Fam. Pieridae

Euchloe insularis Staudinger

A ♀, on roadside wasteground at 50 m, Porto Cervo on 17.v. Two others, less certainly determined, because not captured, were seen on the

Monte di Mola on 14.v. at c. 300 m. The literature states that this endemic Tyrrhenian butterfly flies only at 1000 m upwards. The example captured was apparently an early 2nd generation specimen.

Fam. Satyridae

Pararge aegeria aegeria (L.)

1 ex. taken, others seen, in maquis behind Liscia Ruja, 16.v. and others seen, again, at sheltered spots in maquis at S. Pantaleone and Rocco Sardi. Euroriental.

Maniola jurtina hispulla Esper

A ♂ was taken flying at 4 p.m. on waste-ground by the road-side (50 m), Porto Cervo, on 17.v. Euroriental.

Coenonympha corinna Hübner

A ♂ was taken flying in the maquis behind Liscia Ruja on 16.v. A Tyrrhenian endemic.

Fam. Geometridae

Idaea dimidiata (Hufnagel)

A pale ex., referable to ab. *delictata* Prout rather than the rosy form *roseata* Turati, reported from Aritzo, was taken on 16.v. in the maquis behind Liscia Ruja. Euro-Siberian (sec. Rebel).

Scopula imitaria (Hübner)

1 ♀, to light, Porto Cervo, 17.v. Euroriental, western Europe to Armenia.

Rhodometra sacraria (L.)

One seen settled on *Scrophularia ramosissima* 16.v. at Liscia Ruja beach. A Paleo-tropical and sub-tropical migrant.

Thera cupressata (Hbn.-G.) (N)

A pupa was beaten from *Juniperus phoenicea* on the Monte di Mola (c. 300 m) and hatched 21.v. The adult also came to light at our hotel, situated in a well-preserved but narrow strip of maquis vegetation, Porto Cervo, 17-18.v. A Mediterranean element ranging from east to west, stenophagous on *J. phoenicea*.

Eupithecia oxycedrata Rambur (N.)

Numerous small larvae, beaten from *Juniperus oxycedra*, 16.v. in the maquis at Liscia Ruja, s. of Calai Volpe, were green with faint whitish lines ; they formed pupae under the foodplant sprays, some in frail cocoons. By 25.v. most had turned into small glossy green pupae. From 3-24.x.84 ten adults hatched in Britain ; the first two to emerge were ♂♂, and no eggs could be obtained. Both sexes' genitalia of these moths agreed with the figures of *oxycedrata* in Petersen's 1909 revision and differ from those of *E. sardoa* Dietze 1913 the Sardinian endemic *Eupithecia* found at Sassari, N.W. Sardinia. In particular the spining of the latter's ductus bursae and bursa copulatrix is much less (see figures F & G.). *E. oxycedrata* is a west-Mediterranean moth, monophagous on *J. oxycedra* ranging from Morocco to Macedonia.

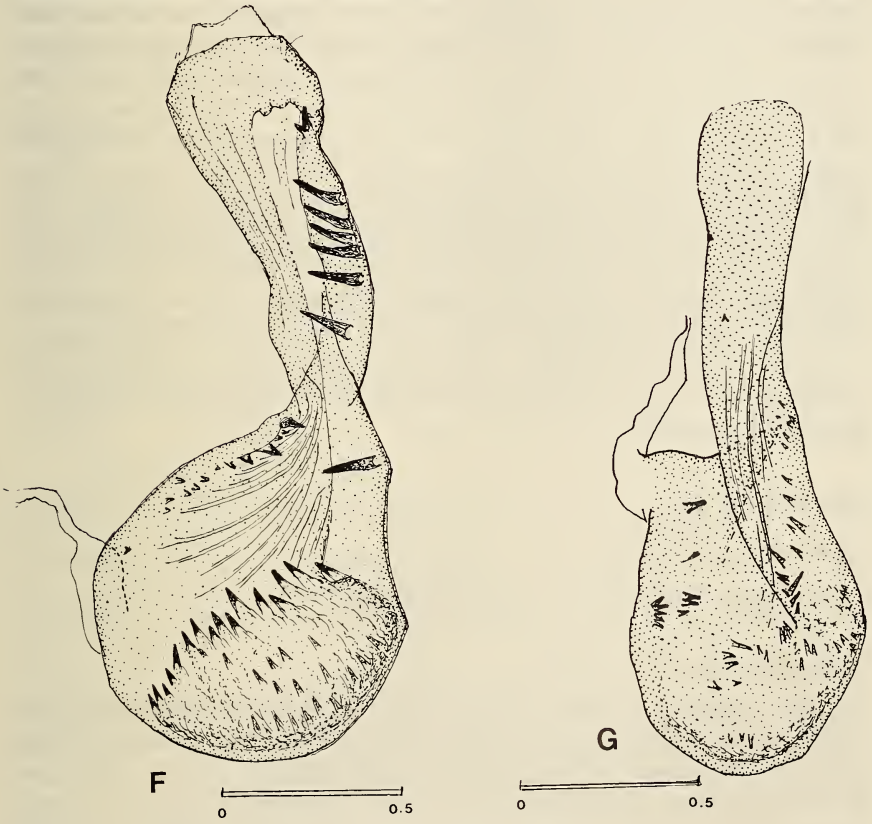

Fig. F. ♀ genitalia, *Eupithecia oxycedrata* Rambur (Sardinia).
Fig. G. ♀ genitalia, paratype, *Eupithecia sardoa* Dietze (Sassari, Sardinia) (Loan of two types of the latter by dr. Hannemann of Berlin is gratefully acknowledged).

Gymnoscelis rufifasciata (Haworth)

Several exs., Porto Cervo, 15 & 17.v., mostly attracted to light ; also bred from larvae beaten from *Tamarix gallica* in v. and hatching in Britain on 1 & 4.vi. Euroriental, from the Canaries and N. Africa to Central Asia.

Rhoptria asperaria (Hübner)

2 exs., to light, Porto Cervo, 18.v. A characteristic moth of Cistus maquis : West Mediterranean.

Family Arctiidae

Apaidia mesogona Godart

Several larvae of this moth were beaten from *Juniperus phoenicea* shady trunks, and were bred to maturity on the grey algae on the bark of this tree, and later of several kinds of English tree. The larva tapers to head and tail, and has a prismatic dorsal profile ; it is olive-green with pale greenish bristles and black dorsal V-marks, on the 7th segment. Light silken cocoons were made under the bark stripped from the original juniper branches and three moths emerged 15-22.vi. The pupa is light brown with the main sutures black-edged, and without cremaster. The cork-oak has been previously mentioned as the tree harbouring this moth, but doubtless the same or a suitable alga-species is found on various trees, if growing to sufficient size in unpolluted atmosphere and with sufficient rainfall during part of the year, so that the moth cannot be strictly attached to one or another tree genus. The multivoltine moth is known from suitable parts of S.W. Europe, the Tyrrhenian islands and Morocco : West-Mediterranean.

Fam. Noctuidae

Agrotis puta (Hübner)

1 ♀, to light, Porto Cervo, 18.v. Euroriental.

Aporophyla nigra (Haworth)

A small green larva, beaten from *Quercus coccifera* on Monte di Mola 14.v. later developed into a large green larva with white sublateral stripe and spun its cocoon in Britain on 31.v., from which a fine ♀ emerged 26.x. The species is stated by Rungs (1977 : 183) to be common around Ajaccio, S.W. Corsica, x-xii, and by Turati (1913) to fly in the mountains in ix. Euroriental, ranging from Britain to the Middle East.

COLEOPTERA

Fam. Curculionidae

Coniatus tamarisci (F.)

Small larvae, beaten in numbers, from tamarisks at Romanizzo beach at the mouth of a stream 16.v. had white dorsal stripe and black head when full-grown ; on transfer to Britain a garden cultivar of *Tamarix gallica* was accepted and they constructed roomy oval iridescent semi-transparent cocoons. Three pretty beetles hatched from these 7-11.vi.84.

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References

The following is a select list on Sardinia ; asterisks denote works containing fuller bibliographies. Bytinski Salz also critically summarised previous literature. The Dietze reference is for the description of *Eupithecia sardoa*.

* Bytinski Salz, H. (1934). Ein Beitrag zur Kenntnis der Lepidopterenfauna Sardiniens. *Int. ent. Zeit. Guben*, 28 : 41-62, 89-106. 133-137, 165-169 & 182-185.

Dietze, K. (1913). Biologie der Eupithecien (Jugendheim) Pt. 2 : 151, Pl. 77, figs. 703, 704.

* Hartig, F. & Amsel, H. G. (1952). Lepidoptera Sardinica. *Fragmenta Entomologica*, 1 (1) : 1-152.

Rambur, M. (1833). Suite du catalogue des Lépidoptères de l'Ile de Corse. *Ann. Soc. ent. Fr.*, 2 : 1 ff.

* Riemis, A. (1984). Sardinia, 14th-20th May 1983. *Entom. Rec. & Journ. Var.*, 96 (5/6) : 92-95 (Rhopalocera only).

Petersen, W. (1909). Ein Beitrag zur Kenntnis der Gattung *Eupithecia*. *Iris*, 22 : 203-313.

* Turati, E. (1913). Un recordo entomologico. Materiali per una faunula dei Lepidotteri della Sardegna. *Atti della. Soc. Ital. di Sci. nat.*, 51 : 265-365.

* Wiltshire, E. P. (1976). Early stages of Palearctic Lepidoptera XIV : *Cucullia minogenica* Rebel and some close relatives : with a provisional key to the known larvae of the *C. verbasci* group. *Proc. Brit. ent. & nat. Hist. Soc.*, 9 (1/2) : 26-32.