Nota lepid. 10 (1) : 54-60 ; 31.III.1987 ISSN 0342-7536

Notes on the distribution of *Gortyna borelii lunata* FREYER in the Carpathian Basin

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Gortyna borelii PIERRET, 1837 (*leucographa* auct., nec BORKHAUSEN) is an extremely local species, but has a very wide distribution. It is known from England (one locality only), France (Seine-et-Oise, the nominotypical form, Charente, Cher, Deux-Sevres), Spain (Catalonia : Baells, Valada), W. Germany (Baden-Württemberg, Nassau, Pfalz), E. Germany (Thüringen, Leipzig, Halle), Poland, the Carpathian Basin and S.W. Siberia. Unfortunately, many of the European populations have already disappeared. Populations in Central Europe are referrable to ssp. *lunata* FREYER, 1839, which is larger than the nominate subspecies.

In this note, the distribution of *lunata* and its foodplants in the Carpathian Basin is discussed.

I. The foodplants of *G. borelii lunata* FRR. in the Carpathian Basin.

Clearly, populations of the moth can only occur where the foodplants occur and so, first, the known distributions of the foodplants are presented. For the Carpathians and Carpathian Basin, three species are mentioned in the literature and a fourth is discussed here.

1. *Peucedanum longifolium* L. : Grows only on limestone. Occurs on the Balkan Peninsula, but also in the Carpathian Basin and the Southern Carpathians (Kazan Gorge, Mehadia, Băile Herculane, Cserna Valley) up to about 1000 m. This is the only known foodplant of the highest occurring European *borelii* population, of the Domogled, a mountain near Mehadia (F. KÖNIG, 1941).

2. *Peucedanum officinale* L. : This plant is the character species of the association *Peucedano-Galatelletum* ZÓLYOMI et TALLÓS (*Peucedano-Asteretum* auct.). It is the only known foodplant of the *borelii* populations of the Great Hungarian Plain. Apart from the sandy districts of the territory situated between the Rivers Tisza and Danube, and the Nyirség, *P. officinale* was widely distributed in the Great Hungarian Plain in the forest-steppe zone in the foothills of the Mátra, Bükk and Zempléni Mountains, the Lesser

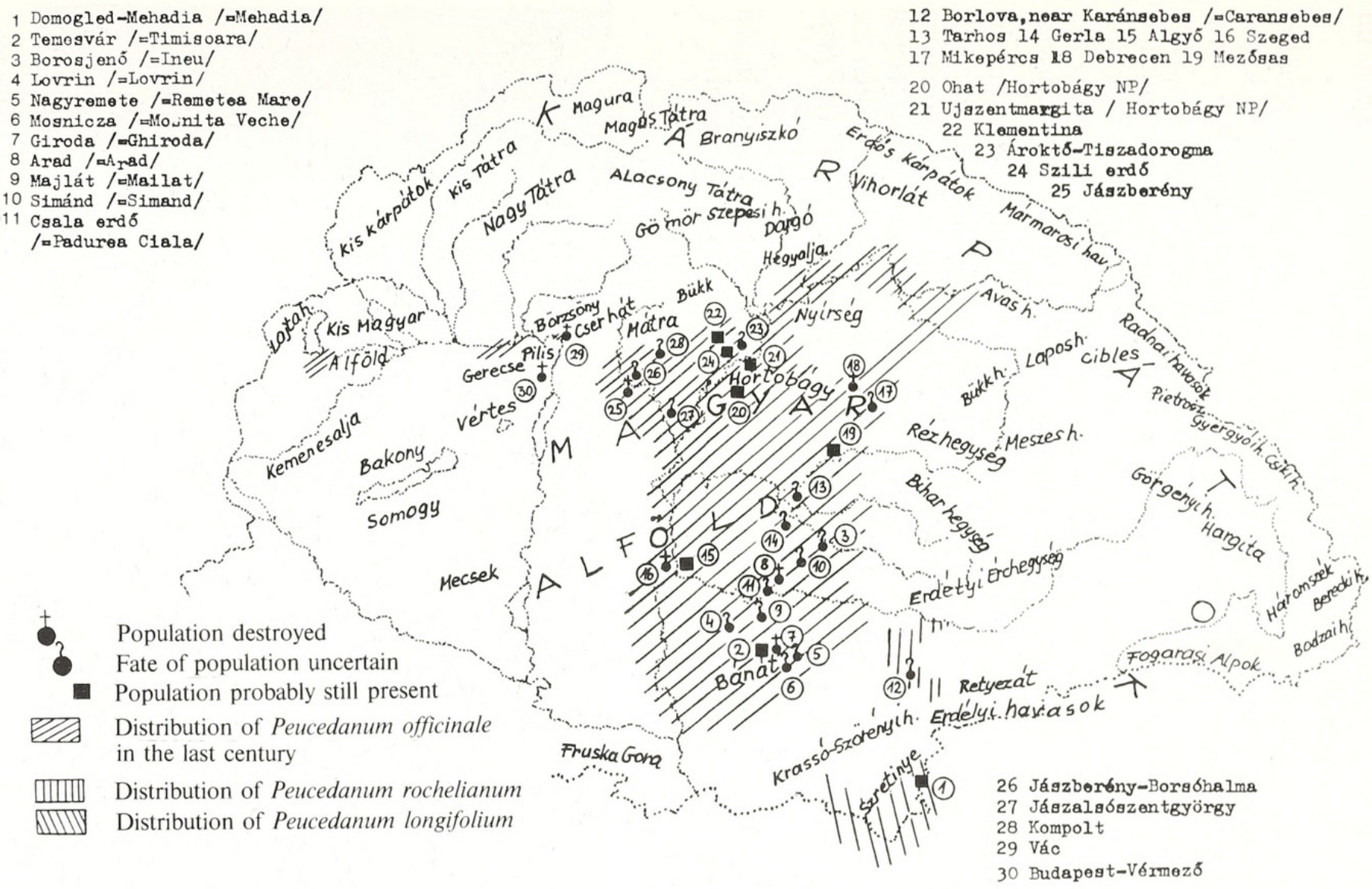

Fig. 1. Distribution of *Gortyna borelii lunata* FRR. and its foodplants in the Carpathians and Carpathian Basin.

Hungarian Plain (near Lake Fertö) and at the Danube Bend (Esztergom). Today, it can be found very locally, mostly in the clearings of the forests on basic soils, especially in the Hortobágy National Park.

3. *Ferula sadleriana* Ledeb. : This is an endemic and very local species of the Carpathian Basin, growing only in a few rocky places at low altitude : Pilis Mts., Gerecse Mts. (Pisznice), Nagymaros (Ördöghegy), Bükk Mts. (Bélkő), Tornai Karst, Transsylvania : Tordai and Bojcai (?) – hasadék (gorge). Probably a preglacial relict (Soó, 1966). This plant is mentioned by various authors as a potential foodplant, but this has never been confirmed. Indeed, *F. sadleriana* seems not to be a foodplant of *G. borelii lunata* Frr., because no moth has ever been captured where the plant is known to occur.

4. *Peucedanum rochelianum* Heuff. : This is also an endemic plant of the Carpathian Basin, and must be considered a potential foodplant of the *borelii* populations in the Bánát (S.E. part of the Carp. Basin). A single specimen of *borelii* is known from Borlova (near Karánsebes, Bánát) (in the Natural History Museum, Vienna). *P. rochelianum* is considered to have been the only possible foodplant for the larva of this specimen (F. König, pers. comm.).

G. borelii lunata has therefore only two foodplants for certain in the region of the Carpathian Basin : *Peucedanum longifolium* (Mt. Domogled, S. Carpathians) and *P. officinale* (populations of the Carpathian Basin).

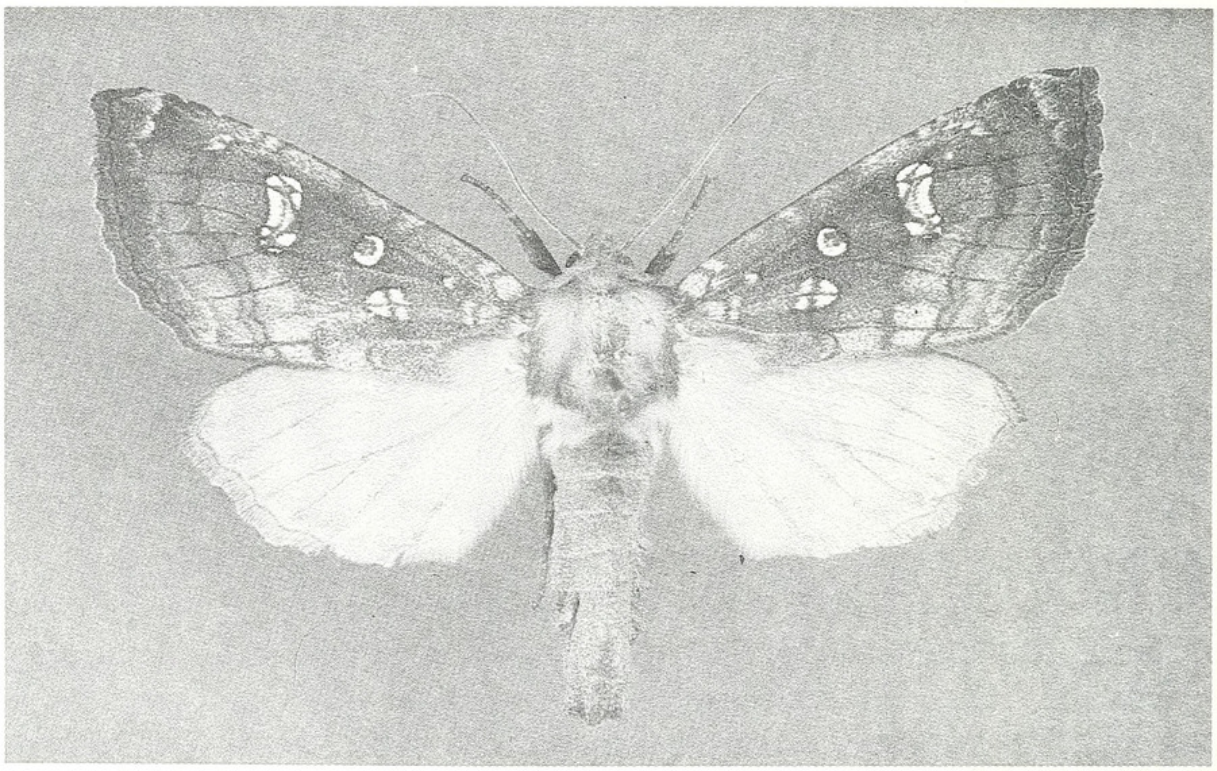

Fig. 2. *Gortyna borelii lunata* Frr. ♀, Hungary, Hortobágy Nat. Park, Újszentmargita.

II. The *G. borelii lunata* FRR. populations in the region of the Carpathian Basin and their present status.

1. The population of Mt. Domogled (S. Carpathians, 1190 m).

This was the first known locality for *borelii* in the Carpathians and Carpathian Basin and is the only mountain population. First mentioned by KINDERMANN (1835-36) from nearby Mehadia ; later by ABAFI-AIGNER (1907) and by KÖNIG (1941). It was also collected by KÖNIG in 1962. It probably still occurs very locally on the Domogled. According to Z. VARGA (1964), this population is a relict species of a drier period of the Quaternary.

2. Populations of the Bánát (S. E. Carpathian Basin, in Romania).

A large population was known near Temesvár (= Timisoara), the first specimens being taken in 1938 (KÖNIG, 1941, 1975, 1978). A number of other isolated localities are also known : Borosjenö (= Ineu, Arad County) (LIPTHAY, 1931 ; DIÓSZEGHY, 1932) ; Lovrin (= Lovrin) (KÖNIG, 1941) ; Arad, Nagyremete (= Remetea Mare), Mosnicza (= Mosnita Veche), Giroda (= Ghiroda) (KÖNIG, 1975) ; Majlat (= Mailat), Simánd (= Simand), Csala erdő (= Padurea Ciala) (KÖNIG, 1978) and Borlova near Karánsebes (= Caransebes), (KÖNIG, in litt.).

Unfortunately, most of these localities have already been destroyed. The most recent records are : Nagyremete (1971), Simánd (1972) and in one locality only near Temesvár (1985, leg. KÖNIG).

3. Populations of Békés-Csongrád County (S.E. Hungary).

Only sporadic occurrences are known : Tarhos, Gerla (RONKAY, VOJNITS & GYULAI, 1983), Algyö in 1979 and one specimen taken in the centre of the city of Szeged in 1981 (KOVÁCS, 1982-83). It is unlikely that any population has survived near Szeged.

4. Populations near Debrecen (E. Hungary).

Only a few specimens known : Mikepércs, Mezösas (leg. SARKADI, coll. VARGA) and 3 at Debrecen in 1955 (VARGA, 1957 ; RONKAY, VOJNITS & GYULAI, 1983).

The species probably no longer occurs at Debrecen, as the foodplant has been destroyed on the banks of the Tócó. The record at Mezösas demonstrates the link to the populations of Békés County and the Bánát.

5. Populations of the Hortobágy (E. Hungary).

There are two local, but large populations occurring in the clearings of the forests near Ujszentmargita and Ohat (near Egyek). The two forests are the

remains of the true "puszta with forest" (forest-steppe zone) and are protected areas belonging to the Hortobágy National Park.

The moth was discovered in the Ohat forest in 1948, by KOVÁCS (1955), but the Ujszentmargita forest population was first noted in 1971 by the author (GYULAI, 1974). *G. borelii* is a frequent species in these forests and these populations are probably the largest and certainly the most seriously protected populations in the Carpathian Basin (RONKAY, VOJNITS & GYULAI, 1983).

6. Populations of the Kis-Hortobágy (S. E. Borsod County in N. Hungary).

Two specimens were taken in 1984-85 in a light-trap near Klementina (GYULAI, in print). In the last two years, two large populations of *P. officinale* were discovered by the author, not too far from Klementina (on the bank of the River Tisza and in the Szili forest, near Ároktö-Tiszadorogma). The moth probably occurs in these two localities. Szili forest became a protected area in 1986.

7. Populations of the Jászság (C. Hungary).

KOVÁCS (1955) mentioned the possibility of the occurrence of *borelii* near Jászalsószentgyörgy. Later, it was found by BUSCHMANN (1982, 1985) in the city of Jászberény and at Borsóhalma, not too far from the place mentioned by KOVÁCS. Since then this population has probably been destroyed.

In the past, populations south of the Mátra-Bükk Mts. formed a link between the populations of the Hortobágy and Kis-Hortobágy, and those of the Jászság. This fact is evidenced by the occurrence of *borelii* near Kompolt (Heves County) at light.

8. Populations near Budapest.

Only two old specimens are known : one male, 7th. October 1937, near Vác (NAGY, 1942) and one female, at the end of October 1923, Budapest-Vérmezö (BÁNÓ, 1943). *P. officinale* was also known to occur on the Danube Bend. These populations have certainly been destroyed.

The survival of *G. borelii lunata* FRR. in the Carpathian region is ensured only in the Hortobágy National park and perhaps also in the Kis-Hortobágy and on Mt. Domogled. Unless action is taken, it is likely that all other populations will be destroyed in the near future.

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Book reviews – Buchbesprechungen – Analyses

B. GOATER : British Pyralid Moths – A Guide to their Identification. 16 × 22 cm, 175 pp., 9 colour plates, 12 figs, Harley Books, Martins, Great Horkesley, Colchester, Essex C06 4AH, England, 1986, £ 18.95 (ISBN 0-946-58908-9).

Beirne's famous work "British Pyralid and Plume Moths" was published more than 30 years ago, and has been out of print for some time. Since its publication, more than 30 species of Pyralidae have been added to the British list. A modern revision was badly needed, and the present publication supplies this want. The book provides very good colour plates, comprising photographs of the 208 British species, from which entomologists will easily be able to identify most of their material. In the case of difficult species, the text points out the important wing pattern characters and other distinguishing features. In many cases, text figures illustrate wing venation or genitalia.

The good quality of the colour plates has allowed the text to be kept short, without losing too much information. For each species, a short description of the adult is given, together with some data on the early stages, the habitat, and distribution in Great Britain. The author uses an up-to-date nomenclature. The book contains a check-list of the British Pyralidae species, a glossary, and indexes of scientific insect and foodplant names. It is hoped that a similar book on the British Plume Moths will follow soon.

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