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## THE SPHINGIDAE AND SATURNIIDAE (INSECTA, LEPIDOPTERA) OF THE SALENTO (SOUTHERN ITALY)

### RIASSUNTO

Si elencano gli Sphingidae e i Saturniidae osservati nella penisola salentina in un lasso di tempo di circa vent'anni. Si sono rinvenute nove specie della prima famiglia e due della seconda con un'indagine che ha coperto il territorio salentino in maniera abbastanza completa. Si rileva la presenza di *Daphnis nerii* e *Hippotion celerio*; la segnalazione della quale è la seconda per l'Italia meridionale peninsulare.

La relativa ricchezza in biodiversità è spiegata dalla varietà del paesaggio, che permette la stabilità di molte nicchie ecologiche, e da un'agricoltura in alcuni casi ancora poco industrializzata.

### SUMMARY

The authors list the Sphingidae and Saturniidae recorded in the Salento peninsula over a period of about twenty years. Nine species of the former and two species of the latter are listed, covering the whole of the Salento. Most remarkable are the records for *Daphnis nerii* and *Hippotion celerio*, the latter being only the second find for Southern peninsular Italy.

The relative richness in terms of biodiversity is explained by the heterogeneity of the landscape, which gives rise to a large number of ecological niches, and in some cases by the continued absence of industrialized agriculture.

### INTRODUCTION

As stated in several previous papers (DURANTE, 2009: 9), the Salento is still relatively under-investigated from the entomological point of view, although the Museo di Storia naturale del Salento (MSNS) is proceeding gradually with its surveys; we may cite here the recent works on the Noctuidae and Erebiidae (DURANTE and POTENZA, 2016; DURANTE *et al.*, 2018).

The present paper deals with two moth families, of which we have what is assumed to be a fairly complete outline.

The Sphingidae and Saturniidae families have not been dealt with in this sub-region since the minor report by DURANTE *et al.* (1996) and the geographically limited works of PARENZAN (1977, 1982). Even PARENZAN and PORCELLI (2006) look only at very specific locations in the Salento.

The reason for publishing our data on this occasion comes from the recent sighting and successful breeding of the larva of *Hippotion celerio* (Linnaeus, 1758), a species not previously recorded in the Salento (see Results and Discussion for more information).

## MATERIALS AND METHODS

Sample methods are reported in DURANTE and POTENZA (2016). The records examined in this study were created over the last twenty years.

The specimens examined are stored in the MSNS collection and the authors' private collections.

The systematic account follows the list in DE FREINA and WITT (1987) and BERTACCINI *et al.* (1994).

General and Italian distribution are from D'ABRERA (1986, 1998) and PARENZAN and PORCELLI (2006), with additional information from DE FREINA and WITT (1987), BERTACCINI *et al.* (1994), LERAUT (2006).

The chorological categories follow LA GRECA (1963), Vigna TAGLIANTI *et al.* (1992) and PARENZAN (1994). The definition of the Salento geographical area follows BALDACCI (1962) and MARCHIORI and TORNADORE (1988), with the collecting area in the Southern part, as specified in DURANTE and POTENZA (2016).

Flight and distribution data for the Salento are original unless otherwise stated.

The main collecting locations are listed in Durante (2016), but many recordings were made in other localities.

## RESULTS

Nine species belonging to the Sphingidae and two species to the Saturniidae are listed here. These species represent 37.5% of Italian Sphingidae (RAINERI *et al.*, 1995) and 69% of those found in Puglia (13 species in PARENZAN and PORCELLI, 2006).

## Systematic account

### SPHINGIDAE

#### *Agrius convolvuli* (Linnaeus, 1758)

Sub-cosmopolitan species, common in Italy, widespread and common all over the Salento.

It has two distinct broods: the first in June, and the second from August to October.

#### *Acherontia atropos* (Linnaeus, 1758)

Euro-African species whose range extends to Macaronesia and Central Asia, widespread in Italy, but not common in the northern regions, found all over the Salento, though not very common.

It has two broods: the first during spring with isolated records from January to June, and the second from July to October.

#### *Marumba quercus* ([Denis & Schiffermüller], 1775)

Turanic-Mediterranean species, with mosaic distribution in Italy; in the Salento it is associated with *Quercus* forests.

It flies from May to July and has only one brood.

Recorded by PARENZAN (1977) in only one locality in the Salento on the west coast (Lido Silvana, south of Taranto), this species is fairly widespread, though not common.

#### *Macroglossum stellatarum* (Linnaeus, 1758)

Palearctic species, common in Italy, and found all over the Salento.

It is on the wing all year (data lacking only for January), with three overlapping generations.

#### *Daphnis nerii* (Linnaeus, 1758)

Palaeotropical species, normally migrant in Europe, including Italy. BERTACCINI *et al.* (1994) reported it for some Central-Northern regions and Sicily, but PARENZAN (1995) recorded it for Central Puglia (Giovinazzo – Bari), and DURANTE *et al.* (1996) recorded it for the Salento in San Cataldo (near Lecce) and Gallipoli. Recently, its larvae have again been recorded in San Cataldo (October 2018), and in Castiglione d'Otranto (Andrano, 1 December 2019, eclosion: 7 December 2019), and its imago has been collected in Vernole (10 November 2019).

The sighting of the species in the Salento is in accordance with its recording in the rest of Europe, with a spring generation from African migration (May, June) and a second local brood in September/October, as in BERTACCINI

*et al.* (1994). The question of whether the second brood overwinters in Southern Italy due to the mild climate remains unsolved (DURANTE *et al.*, 1996).

*Hyles euphorbiae* (Linnaeus, 1758)

Palearctic species, widespread and normally common all over Italy and the Salento.

Recently, a fall in density has been seen.

It has two distinct broods: the first from May to June, and the second from July to October.

*Hyles livornica* (Esper, 1780)

Afro-Eurasian species, widespread and normally common all over Italy and the Salento.

It has two distinct broods: the first from April to June, and the second recorded only in July.

*Hippotion celerio* (Linnaeus, 1758)

Cosmopolitan species with discontinuous distribution in Italy, recorded for almost all Northern and Central regions, Calabria and Sicily; absent for the rest of Southern Italy.

Our record (Cutrofiano – Lecce) is the second for continental Southern Italy since the record in Southern Calabria in 1980 (PARENZAN, 1982). Collection and breeding of the larval stage indicates the occurrence of a second brood, probably by migrating specimens, contrary to what was stated by BERTACCINI *et al.* (1994: 184).

Larva (last instar): 20/10/2018; pupal cell building: 23/10/2018; imago eclosion: 9/11/2018. Larva bred on *Vitis* sp.

*Deilephila elpenor* (Linnaeus, 1758)

Eurasian species, found throughout Italy; recorded in the Salento along the east coast from San Cataldo to Otranto. Maybe two broods, probably overlapping, from May to August.

## SATURNIIDAE

*Saturnia pyri* ([Denis & Schiffermüller], 1775)

Turanic-Euro-Mediterranean species, found all over Italy and the Salento, but never frequent in the latter. One brood from March to May.

*Saturnia pavoniella* (Scopoli, 1763)

North-Mediterranean species, widespread all over Italy, rarely recorded in

the Salento, and only for Lecce and surrounding locations (San Cesario di Lecce and San Donato di Lecce) with no particular environmental features. This suggests that the species may be more widespread, albeit not yet recorded.

One brood from February to March.

## DISCUSSION

As already pointed out by DURANTE *et al.* (2018), the Salento is still relatively unexplored, despite its small size and its diffuse anthropization, although not particularly intense. For this reason, even concerning extensively studied and easily sampled families, it can hold surprises. We should however consider that few papers on the matter have been published and few locations have been investigated (see introduction above). Even during our research, the Salento was covered only partially and many interesting places and habitats were neglected.

The Salento's relative richness in terms of biodiversity is perhaps easier to explain in ecological than biogeographical terms. Indeed, the peninsula is highly varied, with many residual areas of Mediterranean shrub, garrigue and oak forests at various stages up to climax, as well as xerophilous, halophilous and marshy environments, all very close to each other and alternating with crops, gardens, fallow fields, pastures and towns, in an irregular mosaic pattern. Even the mostly flat terrain can contribute to bio- and landscape-diversity, as the karst substrate models the environment, creating many refuge areas such as ravines, sinkholes, caves with collapsed vaults, and, along the coast, a continuous alternation of cliffs, escarpments and sandy coves, where many floral species can survive human pressures.

On the other hand, even if anthropic presence is widely present in the Salento, human activities are not usually intense or industrial enough to badly affect the wild or semi-wild environments, so the wide variety of habitats is fairly stable, enabling the survival of species even in restricted or very restricted areas. The Salento is a living laboratory showing how wildlife can survive close to human activities.

In the specific case of the Sphingidae and Saturniidae families, we observe the recent colonization by two species that were recorded for the first time in the Salento in 1991 (*Daphnis nerii*, in DURANTE *et al.*, 1996) and in 2018 (*Hippotion celerio*, new record), as well as the spread of other species (with the probable exception of *Saturnia pavoniella*, a localised species based on current knowledge).

Although the two above-mentioned Sphingidae species are normally migrant in Europe, it should be emphasized that larval development was observed

in both cases, proving that the Salento is not yet suffering severely from human pressure (as already stated above), showing a possible reversal of trends and allowing us to hope that environmental recovery is not entirely implausible.

## REFERENCES

- BALDACCIO O., 1962 - Puglia. In: Almagià R. (ed.), *Le Regioni d'Italia*, Vol.14., UTET, Torino.
- BERTACCINI E., FIUMI G., PROVERA P., 1994 – *Bombici e Sfingi d'Italia (Lepidopera, Heterocera)*, vol. 1. Natura-Giuliano Russo Editore, Monterenzio (Bologna): 248 pp.
- D'ABRERA B., 1986 – *Sphingidae Mundi, Hawk moths of the world*. E.W. Classey Ltd, Faringdon, Oxon: 226 pp.
- D'ABRERA B., 1998 – *Saturniidae Mundi, Saturniid moths of the world*, part III. Goecke and Evers, Keltern: 171 pp.
- DE FREINA J. & WITT T., 1987 – *Die Bombyces und Sphinges der Westpalaearktis (Insecta, Lepidoptera)*, Band 1. Edition Forschung & Wissenschaft Verlag GmbH, Munchen: 708 pp.
- DURANTE A., 2009 – *Le farfalle diurne della provincia di Lecce*. Edizioni Publi-graphic, Trepuzzi (Lecce): 164 pp.
- DURANTE A., 2016 - *Farfalle diurne del Salento*. Edizioni Grifo, Lecce: 143 pp.
- DURANTE A. & POTENZA L., 2016 – Hadenini and Glottulini of the Salento (South Italy) (Lepidopera, Noctuidae). *Thalassia Salentina*, 38: 81-98.
- DURANTE A., PANZERA S., MARZANO G. 1996 – Interessanti reperti nel Salento (Italia meridionale) (Lepidoptera, Heterocera). *Lambillionea*, XCVI, 1: 219-221.
- DURANTE A., PANZERA E., POTENZA L., 2018 – New data on the Noctuidae and Erebidae of the Salento (South Italy) (Lepidoptera, Noctuoidea). *Thalassia Salentina*, 40: 49-60.
- LA GRECA M., 1963 – Le categorie corologiche degli elementi faunistici italiani – *Atti dell'Accademia Nazionale Italiana di Entomologia, Rendiconti*, 11: 231-253.
- LERAUT P., 2006 – *Moths of Europe, Saturnids, Lasiocampids, Hawkmoths, Tiger Moths...* Vol. 1. NAP Editions, Verrières le Buisson: 277 pp.
- MARCHIORI S., TORNADORE N., 1988 - Aspetti quantitativi e qualitativi della flora del Salento (Puglia meridionale - Italia). *Thalassia salentina*, 18: 21-46.
- PARENZAN P., 1977 – Contributi alla conoscenza della Lepidotterofauna dell'Italia meridionale, IV, Heterocera (Bombyces et Sphinges) di Puglie e Lucania. *Entomologica*, XIII: 183-245.
- PARENZAN P., 1982 - Bombyces et Sphinges (Lepid. - Heterocera) dell'Italia meridionale (addenda). *Entomologica*, XVII: 103-125.

- PARENZAN P., 1994 – Proposta di codificazione per una gestione informatica dei corotipi W-palearctici, con particolare riferimento alla fauna italiana. *Entomologica*, XXVIII: 93-98.
- PARENZAN P., 1995 - Nuove catture di Bombici e Sfingi. Contributi alla conoscenza della lepidottero fauna dell'Italia meridionale. XVIII. *Entomologica*, Bari, XXIX: 149-162.
- PARENZAN P., PORCELLI F., 2006 – I macrolepidotteri italiani. Fauna Lepidopterorum Italiae (Macrolepidoptera). *Phytophaga*, 15: 1-1051.
- RAINERI V., ZANGHERI S., ZILLI A., 1995 – Lepidoptera Thyridoidea, Lasiocampoidea, Bombycoidea. In MINELLI A., RUFFO S., LA POSTA S. (eds.), *Checklist delle specie della fauna italiana*, 88. Calderini, Bologna: 1-6.
- VIGNA TAGLIANTI A., AUDISIO P. A., BELFIORE C., BIONDI M., BOLOGNA M. A., CARPANETO G. M., DE BIASE A., DE FELICI S., PIATTELLA E., RACHELI T., ZAPPAROLI M., ZOIA S., 1992 – Riflessioni di gruppo sui corotipi fondamentali della fauna W-palearctica ed in particolare italiana. *Biogeographia*, XVI: 159-179.





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