

## New and rare species of Heterocera (Lepidoptera) and some notes on their distribution in different habitats in the Nestos-Delta, Macedonia, Greece

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### Summary

During the present survey 1554 Heterocera of 190 species were caught in different habitats between the years 1988 and 1993 in the western part of the Nestos-Delta, Greece (Wüst, 1997). 13 species were newly recorded for Greece : *Pelosia muscerda* (Hufnagel, 1766), *Dysauxes ancilla* (Linnaeus, 1767), *Sideridis albicolon* (Hübner, [1813]), *Hadena rivularis* (Fabricius, 1775), *Hemithea aestivaria* (Hübner, 1799), *Lycia hirtaria* (Clerck, 1759), *Cyclophora quercimontaria* (Bastelberger, 1897), *Cyclophora punctaria* (Linnaeus, 1758), *Cyclophora linearia* (Hübner, 1799), *Melanthia procellata* ([Denis & Schiffermüller], 1775), *Apeira syringaria* (Linnaeus, 1758), *Chariaspilates formosaria* (Eversmann, 1842) and *Sclerocona acutellus* (Eversmann, 1842). 14 species were recorded for the first time in the Nestos-Delta apart from being rare in other Greek regions : *Eilema muscula* (Staudinger, 1899), *Diaphora mendica* (Clerck, 1759), *Ptilodon capucina* (Linnaeus, 1758), *Cerastis rubricosa* ([Denis & Schiffermüller], 1775), *Mythimna turca* (Linnaeus, 1761), *Trachea atriplicis* (Linnaeus, 1758), *Ipimorpha subtusa* ([Denis & Schiffermüller], 1775), *Colobochyla salicalis* ([Denis & Schiffermüller], 1775), *Herminia tarsicrinialis* (Knoch, 1782), *Macaria notata* (Linnaeus, 1758), *Chloroclystis v-ata* (Haworth, 1809), *Lomographa dilectaria* (Hübner, 1799), *Ourapteryx sambucaria* (Linnaeus, 1758) and *Epione repandaria* (Hufnagel, 1767). Some of these reach their distribution limit in the Nestos-Delta.

### Zusammenfassung

Im Nestos-Delta wurden in den Jahren 1988 bis 1993 bis jetzt 1554 Nachtfalter aus 190 Arten nachgewiesen (Wüst, 1997). Dabei wurden 13 Arten erstmals für die Fauna von Griechenland nachgewiesen : *Pelosia muscerda* (Hufnagel, 1766), *Dysauxes ancilla* (Linnaeus, 1767), *Sideridis albicolon* (Hübner, [1813]), *Hadena rivularis* (Fabricius, 1775), *Hemithea aestivaria* (Hübner, 1799), *Lycia hirtaria* (Clerck, 1759), *Cyclophora quercimontaria* (Bastelberger, 1897), *Cyclophora punctaria* (Linnaeus, 1758), *Cyclophora linearia* (Hübner, 1799),

*Melanthia procellata* ([Denis & Schiffermüller], 1775), *Apeira syringaria* (Linnaeus, 1758), *Chariaspilates formosaria* (Eversmann, 1842) und *Sclerocona acutellus* (Eversmann, 1842). Es wurden 14 weitere Arten nachgewiesen die für das Nestos-Delta neu und in anderen Regionen Griechenlands sehr selten sind : *Eilema muscula* (Staudinger, 1899), *Diaphora mendica* (Clerck, 1759), *Ptilodon capucina* (Linnaeus, 1758), *Cerastis rubricosa* ([Denis & Schiffermüller], 1775), *Mythimna turca* (Linnaeus, 1761), *Trachea atriplicis* (Linnaeus, 1758), *Ipimorpha subtusa* ([Denis & Schiffermüller], 1775), *Colobochyla salicalis* ([Denis & Schiffermüller], 1775), *Herminia tarsicrinalis* (Knoch, 1782), *Macaria notata* (Linnaeus, 1758), *Chloroclystis v-ata* (Haworth, 1809), *Lomographa dilectaria* (Hübner, 1799), *Ourapteryx sambucaria* (Linnaeus, 1758) und *Epione repandaria* (Hufnagel, 1767). Einige dieser Arten leben im Nestos-Delta an der Randzone ihrer Verbreitung.

## Introduction

Heterocera were caught in different habitats in the years 1988 to 1993 in the western part of the Nestos-Delta in the North-east of Greece (40° 53' N and 24° 43' E) (Map 1). The investigation was part of a research programme conducted by the University of Essen (Sziij *et al.*, 1996).



Map 1. Position of survey area.

## Materials and methods

The Macroheterocera were caught by 15 W superactinic light traps of the Minnesota type. The traps were used at nine different sites (Wüst, 1994) (Map 2) :

- (A) on a costal salt marsh
- (B) on the beach dune of a peninsula at the west end of Keramoti, near Phragmitea
- (C) on the roof of a house in Keramoti
- (D) on a beach dune near Keramoti adjacent to the dune forest
- (E) in a dune forest of a riparian forest character
- (F + G) on an inland dune
- (H) in the centre of a native, fenced-in river forest (hardwood riparian forest)
- (J) at the edge of the river forest (H), opposite to the poplar forest
- (K) in the middle of a cultivated poplar forest consisting of *Populus canadensis* trees (hybrid)

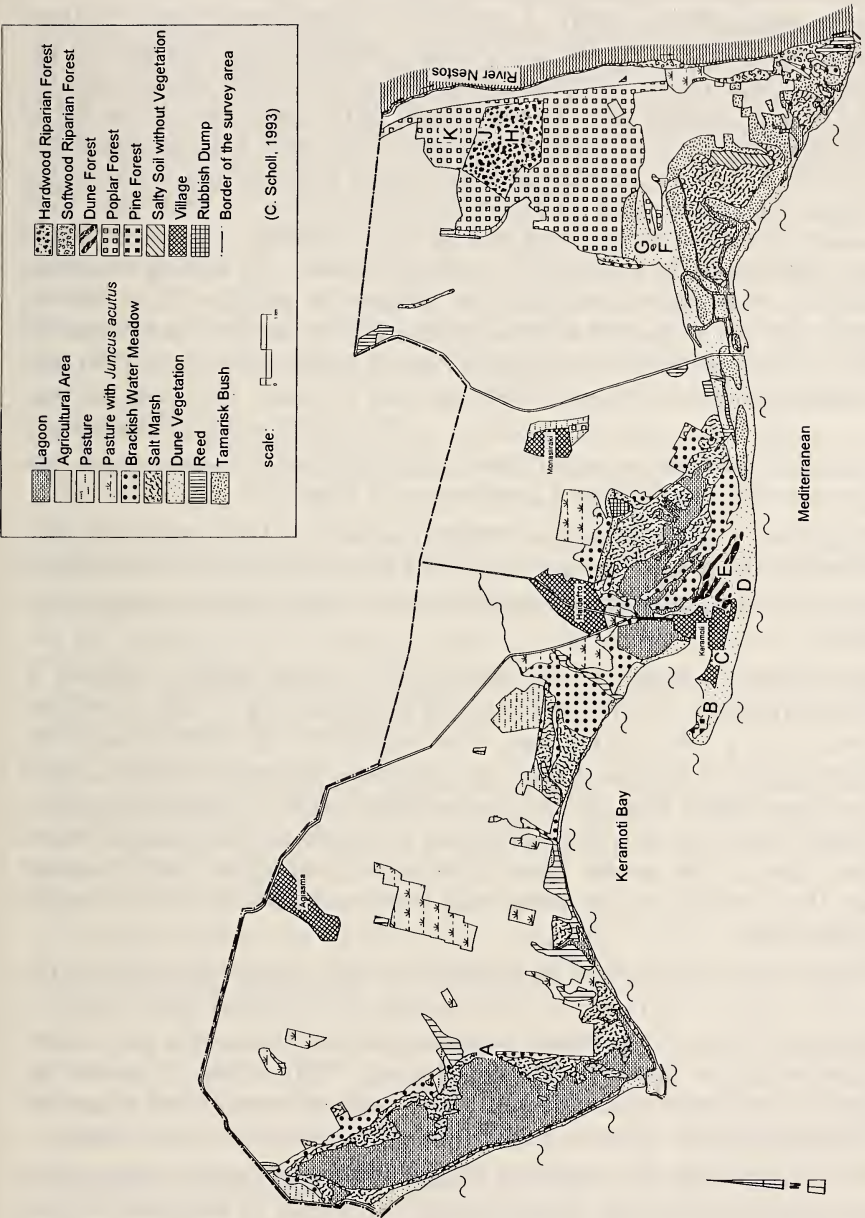
## Results

*Pelosia muscerda* (Hufnagel, 1766) was recorded in Greece for the first time. The southern distribution area of this species reaches its maximum extent in the Nestos-Delta. This species is endangered as swamps have become more and more scarce in Greece and particularly in the Nestos-Delta. In all, 13 individuals of this species were caught : three animals at the fringe of the river forest, two inside this forest, five in the poplar forest opposite and three in the dune forest. The first specimen was caught on the 12.5.1989 in the river forest. The observed flight season extended from the middle of May (12.5.) to the middle of July (14.7).

*Eilema muscula* (Staudinger, 1899) was caught in different habitats. Twenty animals were recorded altogether, the first one on the 11.5.89 at the edge of the river forest. Eight specimens were caught within the river forest, six animals in the dune forest, four animals at the coastal dune and one on the inland dune. There is a possibility that this species displays three generations, as the animals were found in the months of May, July and September. It is also possible that this species distribution further is not just restricted to the island of Rhodos and the Turkish mediterranean coast (de Freina, 1987) but may also be present in coastal areas in Greece.

Five specimens of *Diaphora mendica* (Clerck, 1759) were caught in the Nestos-Delta. The first individual was found on the 10.5.1988 at the fringe of the hardwood river forest. This shows that *D. mendica* is present at the Greek coast. Three more specimens were caught on the 9.5.89 in the same habitat and one more was found on the 25.4.92 on an inland dune.





Map 2. Map of the Vegetation in the western part of the Nestos-Delta showing the positions of the light-traps (A-K).

On the 17.5.89 *Dysauxes ancilla* (Linnaeus, 1767) was recorded in Greece for the first time and was caught at the fringe of the hardwood river forest (WÜST 1994). A total of 9 animals was found in three different habitats: on the 21.5.89 three animals were recorded in the bushy fringe of the hardwood river forest and on the 29.5.89 and the 5.7.91 one animal each time was caught at the same site. On the 8.9.93 two specimens were caught in the dune forest with a dense vegetation. On the 30.5.89 *D. ancilla* was found 150m from the water line on the beach dune dominated by *Hypericum perforatum*. As that night wind was low and the dune forest was as near as 300 m, this animal could as well have been a visitor from the dune forest. In Greece *D. ancilla* displays two generations. The first generation is active from May to July and the second from September to October. Two individuals of this species were also recorded by Peter Kuhna on the 15.10.1990 near Volakas (province Drama). Keeping that in mind, it is possible that *D. ancilla* has a wider distribution in the shady forests in Greece and also that this species would more often be found if more work was done on the distribution of Lepidoptera in Greece.

*Ptilodon capucina* (Linnaeus, 1758) reaches the southernmost limit of its distribution in the Nestos Delta and was found newly in this coastal area. One specimen was recorded on the 9.8.93 in the hardwood river forest.

As Mentzer's work on the splitting of *Noctua janthina* ([Denis & Schiffermüller], 1775) in three species was published in 1991 there have been only a few reliable data (von Mentzer *et al.*, 1991) about the distribution of *Noctua tertia* (von Mentzer, Moberg & Fibiger, 1991) in Greece since then. In the Nestos-Delta only *N. janthina* has been found until now. On the 5.7.91 four *N. janthina* were caught for the first time in the poplar forest. Two more individuals were recorded on the 11.07.91 on the coastal salt marsh and on the 14.7.91 in the dune forest.

Apart from Kozani the Nestos-Delta is the second place where *Cerastis rubricosa* ([Denis & Schiffermüller], 1775) has been found in Greece. This confirms Hackers supposition that this species has a wider distribution in Northern Greece (Hacker, 1989), where it reaches the limit of its southern distribution. Four animals were found altogether during the study, on the 9.4.93 (3) and 10.4.93 (1) in the river forest.

As regards *Sideridis albicolon* (Hübner, [1813]) Hackers supposition is confirmed that this species should be found in northeast Greece (Hacker, 1989). According to its ecology, *S. albicolon* prefers sandy

and ruderal soil. One specimen was caught on the 7.5.88 for the first time in Greece on a peninsula-like coastal dune near Keramoti.

*Hadena rivularis* (Fabricius, 1775) was found new in Greece on the 13.5.88 in its characteristic habitat at the fringe of the river forest. Eleven animals were caught altogether, at the fringe of the river forest (7), in the centre of the river forest (2), as a visitor in the poplar forest (1) and in Keramoti (1). This proves Hackers presumption (1989) that this species should be present in Northern Greece.

*Mythimna turca* (Linnaeus, 1761) has been recorded so far only in Leptokaria near the Olymp (Hacker, 1989). In the Nestos-Delta one animal of this species was caught in the poplar forest on the 17.5.89. Regarding the biology of this species it might have been a visitor from the river forest, the latter being opposite to the poplar forest. This species may also be found in low numbers in other habitats due to its specific habitat requirements.

Contrary to Hacker's presumption (1989), *Trachea atriplicis* (Linnaeus, 1758) could also be found in the northeast of Greece apart from the few specimens found in the Olymp area, the west and the northwest of Greece. On the 5.7.91 one individual was caught in the poplar forest.

*Ipimorpha subtusa* ([Denis & Schiffermüller], 1775) has been recorded for the second time in Greece i.e. after it was found in Kavisos (East-Thracia) in 1984 (Hacker, 1989). It was recorded in the poplar forest on the 17.5.89 and on the 5.7.91. *I. subtusa* might display an even wider distribution in northern Greece.

So far *Colobochyla salicalis* ([Denis & Schiffermüller], 1775) has only been found in the Disron Mountains near Terpilos in 1982 (Behounek, 1984). During the present survey 20 specimens were found in the Nestos-Delta, at the fringe of the hardwood river forest (12), in the river forest (3), in the poplar forest (2) and in the dune forest (3). On the 9.5.88 this species was found for the first time in the Nestos-Delta at the fringe of the river forest. It should be quite common in suitable habitats in northern Greece.

Since 1981 *Herminia tarsicrinalis* (Knoch, 1782) has only been reported once from Greece, in the Olymp area near Platamon (Hacker, 1989). In the Nestos-Delta this species is one of the most common. It was caught for the first time on the 11.5.89 at the fringe of the hardwood river forest. 19 animals were caught altogether, at the fringe of the river forest (17), in this forest (1) and in the poplar forest opposite to the river forest (1). This species should therefore also be common



in northern Greece especially in mixed forests consisting mainly of Beech-trees.

*Macaria notata* (Linnaeus, 1758) has so far been published only by Staudinger 1870 (leg. Krüper) as present in Greece. It probably was present in the Parnassos-region (Gozmany, pers. comm.). This eurasian species could also be found in the Nestos-Delta. Two animals were caught in the hardwood river forest and one animal in the poplar forest opposite to the river forest. The first newly found animals of this species were caught on the 17.5.89 in both habitats.

*Hemithea aestivaria* (Hübner, 1799) is an eurasian species, its distribution extends in the south from Spain to Japan. It was found for the first time in Greece on the 9.5.89 at the fringe of the hardwood river forest. In the course of this survey six animals were recorded there.

*Lycia hirtaria* (Clerck, 1759) was the third-most-frequently recorded species in the Nestos-Delta. However, more individuals were seen around the light-traps than were caught. This eurasian species is widely distributed but it was unknown for the fauna of Greece so far. This does not only depend on its early flight period but also on the scarcity of lepidopterological activities in Greece. Most of the foreign entomologists start their research in June. 74 animals were caught altogether by light-traps, at the fringe of the hardwood river forest (21), in this river forest (20), in the poplar forest opposite to the river forest (12) and on the inland dune (21). On the 24.5.89 this species was caught on the inland dune, and this for the first time in Greece. In the Nestos-Delta *L. hirtaria* was flying in one generation from early April until late May. The maximum of flight activity was recorded in late April.

The eurasian species *Cyclophora quercimontaria* (Bastelberger, 1897) is locally common in the Balkan Peninsula (Gozmany, pers. comm.). It was caught in Greece for the first time on the 10.8.93 in the river forest of the Nestos-Delta. The specimen caught was fresh, which leads to the assumption that *C. quercimontaria* has two generations in the Nestos-Delta.

One individual of the eurasian species *Cyclophora punctaria* (Linnaeus, 1758) was caught for the first time in Greece on the 23.4.92 in the hardwood river forest.

On the 12.5.89 the eurasian species *Cyclophora linearia* (Hübner, 1799) was caught for the first time in Greece. Eight specimens were recorded altogether, at the fringe of the hardwood river forest (4) and inside this forest (4).

One individual of the eurasiatic species *Melanthia procellata* ([Denis & Schiffermüller], 1775) was caught for the first time in Greece on the 14.7.91 at the fringe of the hardwood river forest.

The eurasiatic species *Chloroclystis v-ata* (Haworth, 1809) has been recorded so far only in Olympia (Hacker & Lukasch, 1984) and in Gonia (Reisser, 1974). In the Nestos-Delta one individual was caught on the 20.4.92 in its natural habitat at the edge of the hardwood riparian forest.

*Lomographa dilectaria* (Hübner, 1799) is a southeastern species known from Bulgaria and Macedonia and common in the whole of Turkey (Kuhna, pers. comm.). According to Kuhna this species should also be widely distributed throughout the whole of Greece. So far it has been recorded in Taygetos (Turner, 1967) and Asprovalta (Hacker & Lukasch, 1984). 12 animals were caught in the Nestos-Delta altogether. Here it was found near to its hostplant *Populus*. Four animals were found at the fringe of the hardwood river forest and five animals were recorded in the poplar forest. The first recording of *L. dilectaria* was on the 9.5.88 at the fringe of the river forest.

Two individuals of *Apeira syringaria* (Linnaeus, 1758), an eurasiatic species were caught in the Nestos-Delta. One was recorded at the fringe of the river forest and one in the forest. *A. syringaria* was first recorded in Greece on the 13.5.89 in the river forest.

*Ourapteryx sambucaria* (Linnaeus, 1758) was known to be present in two places in Greece. In 1988 Hassler, Schmidt and Feil caught this species in Neraidorachi (mount Chelmos, 1800 m, 16.7.) and in Xirokambi (Taygetos, 1000 m, 27.7.) (Gozmany, pers. comm.). The third record for Greece was on the 5.7.91 in the poplar forest. Therefore the distribution of *O. sambucaria* is extended in Greece from the coast to mountaneous regions.

The eurasiatic species *Epione repandaria* (Hufnagel, 1767) has so far been recorded and published by Rebel (1905) from Kalavryta, Peloponnese. This species was found in two habitats with moist soil: on the 21.5.89 at the fringe of the river forest and on the 28.5.89 in the dune forest.

The distribution area of *Chariaspilates formosaria* (Eversmann, 1842) is postglacially disjunct. *C. formosaria* lives in warm swamps of south-eastern Europe, e.g. in Hungary and it should thus be present in the Romanian swamps of the Danube (Gozmany, pers. comm.). In the Far East it can be found in the Amur region. In Greece, *C. formosaria*



was recorded on the 26.5.89 for the first time. It was caught on an inland dune of the Nestos-Delta. There it lives in damp dune valleys with *Phragmitetea* (Sziij *et al.*, 1996). This patchily distributed, rare species is more and more endangered in Greece by farming activities in the Nestos-Delta.

*Sclerocona acutellus* (Eversmann, 1842) was recorded on the 19.5.89 for the first time in Greece in the river forest. This species is rare everywhere in Europe because it is characteristically found in swamps (Gozmany, pers. comm.). It is especially endangered in the Nestos-Delta as damp biotopes become more and more scarce.

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