

Polymixis bischoffi (HERRICH-SCHÄFFER, 1850) — a species new to Europe (Lepidoptera : Noctuidae)

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Summary

In 1986 RONKAY & VARGA raised the status of *Polymixis culoti* (SCHAWERDA, 1921) from a synonym of *Polymixis bischoffi* (HERRICH-SCHÄFFER, 1850) to bona species. The true *P. culoti* occurs in the southern parts of the Balkans, Yugoslavia and Greece, whereas *P. bischoffi* had only been found outside Europe and Asia Minor. In 1988, the author found *Polymixis bischoffi* for the first time in Europe when he took four specimens on the Greek island of Samos. A comparative diagnosis and figures of the genitalia of both species are given, together with information on the biology and distribution.

Résumé

En 1986, RONKAY & VARGA ont modifié le statut de *Polymixis culoti* (SCHAWERDA, 1921), considéré comme synonyme de *Polymixis bischoffi* (HERRICH-SCHÄFFER, 1850), pour l'élever au rang de bona species. Le véritable *P. culoti* se trouve dans la partie méridionale des Balkans : en Yougoslavie et en Grèce, tandis que *P. bischoffi* n'avait été trouvé qu'à l'extérieur de l'Europe, en Asie Mineure. En 1988, l'auteur a pris *Polymixis bischoffi* pour la première fois en Europe : quatre exemplaires dans l'île grecque de Samos. L'auteur présente un diagnostic comparatif des deux espèces, figure leurs genitalia et donne des renseignements sur leur biologie et leur répartition.

Introduction

In October 1988 I visited the Greek island of Samos for one week, and collected Heterocera at several places on the island. Samos is one of the largest islands in the Aegean and is the one closest to the coast of Asia Minor, from which it is separated by a strip of sea, the Straits of Mykali. On the Turkish bank lie the Mykali Mountains, with which Samos was previously connected. Samos is 476 km² long with an east-

west axis and high mountains running along its centre. Mt. Kerkis rises at the western end and at 1440 m it is higher than all the mountains of the surrounding islands. The central section of the island is dominated by the mountain range called Mt. Ambelos (formerly Mt. Karvouni), the highest point of which is 1140 m. With these high peaks, the terrain in Samos is intensely varied, but without abrupt transitions. The mountains frequently terminate in small plains and gentle hills, while sheer slopes contrast with gentle inclines leading smoothly to peaceful shores.

The whole island is covered with lush vegetation, the like of which is rarely found on the other islands in the area. Dense forests, mainly of pine, but also of olive and plane trees, oak and cypress, cover the land from one end to the other. Where these cease, at lower elevations, they are replaced by vineyards and other cultivated land. In the summers of 1987 and 1988 I visited Samos and collected Heterocera at different places on the island. I found several interesting species, some of them new to Europe, which I shall publish separately, together with a full list of the recorded Heterocera from Samos.

Results

In the autumn of 1988, I visited the island for the third time, and collected with Hg-lamps in the northern and southern part of the island. Two lights were placed on the Ambelos Mountains in the northern part of the island, between the two villages Ambelos and Stavrinides at an altitude of 350 m.

At these two lights I found several interesting Noctuidae species, among others : *Episema korsakovi* (CHRISTOPH, 1885) — new to the Aegean area, *Gortyna moesiaca* HERRICH-SCHÄFFER, 1849, fourth record from Greece, new to the Aegean area, *Agrochola osthelderi* BOURSIN, 1951, third record from Greece, new to the Aegean area, *Agrochola thurneri* BOURSIN, 1953 and *Agrochola gratiosa* (STAUDINGER, 1881) — both new to the Aegean area. Two *Polymixis* species, *P. canescens* DUPONCHEL, 1826) and *P. serpentina* (TREITSCHKE, 1825) were also present.

P. bischoffi (HERRICH-SCHÄFFER) and *P. culoti* (SCHAWERDA)

At this locality, between the 18th and 20th October 1988, three specimens of a *Polymixis* species were recorded which looked like *Polymixis culoti* (SCHAWERDA, 1921). However, later investigations made by Michael FIBIGER proved them to be a species new to Europe :

Polymixis bischoffi (HERRICH-SCHÄFFER, 1850). One more specimen of *bischoffi* was recorded on the 20th October 1988 at light on a range of hills near the city Pythagorion on the southern part of the island. At this light I also found e.g. *Polyphaenis subsericata* (HERRICH-SCHÄFFER, 1861), *Trichoplusia circumscripta* (FREYER, 1831) and *Ctenoplusia accentifera* (LEFEBVRE, 1827).

Based on one male and one female, *Polymixis bischoffi* was originally described by HERRICH-SCHÄFFER in 1850. The female is now in the FRIVALDSKY collection in Budapest, Hungary (Hungarian Natural History Museum), whereas the male is probably destroyed. RONKAY & VARGA (1986) assume that the figure of the male in HERRICH-SCHÄFFER (1850) is not *bischoffi*, but that it belongs to an *Apamea* species. The female is preserved in good condition, and represents the species *bischoffi*; it is designated as lectotype by RONKAY & VARGA (1986). The data of the female is : Smyrna, coll. E. FRIVALDSKY „Friv. 1306“ slide no. 1616 ; RONKAY deposited, coll. HNHM. Budapest. In 1897, STAUDINGER described a large relatively dark, greenish female specimen from Beirut in Lebanon as *apora*. This specimen was later synonymised to *bischoffi* (DRAUDT in SEITZ, 1937 and BOURSIN, 1940). *Polymixis* specimens from Dalmatia in Yugoslavia have for many years also been identified as *bischoffi* and a single similar specimen from Corfu, Greece, was described by SCHAWERDA (1921) as *bischoffi* subspecies (var.) *culoti*. This specimen is deposited in the Natural History Museum in Vienna, Austria. However, RONKAY & VARGA (1986) investigated a large number of *Polymixis* specimens from Dalmatia, Greece, Crete and several parts of eastern Asia and concluded that *bischoffi* and *culoti* represent two distinct species.

Taxonomic notes

WILTSHIRE (1941) described a new subspecies, *Polymixis bischoffi zagrobia* from S.W. Iran (Khurramabad and Shapur), but WILTSHIRE (pers. comm., 1990) has informed me that *zagrobia* may well be a new species, as it looks smaller and rather different from the Lebanon and N. Iraq forms of *bischoffi*. WILTSHIRE will investigate this in his further studies of the species.

Polymixis culoti has been separated into two subspecies : The nominate *culoti* is found on the Adriatic coast (Dalmatia, Yugoslavia and Corfu, Greece). RONKAY & VARGA (1986) described a new subspecies *Polymixis culoti cretica* from Crete. This subspecies differs from the nominate race in a series of distinguishing characters as follows : The ground colour of the forewing is much darker, the characteristic reddish-

ochreous shine of the nominate race is absent and the markings of the hindwing and underside of both wings is much more intensive.

The populations of *Polymixis culoti* occurring in the Peloponnesus represent according to RONKAY & VARGA (1986) an intermediate form between the two taxa, being more closely related to the nominate race than to *Polymixis culoti cretica*. Only the olive-greenish ground colour slightly resembles the latter race.

Diagnosis

EXTERNAL CHARACTERS : The main external characters distinguishing *Polymixis bischoffi* (Fig. 1) from *Polymixis culoti* (Fig. 2) are as follows : *P. bischoffi* is larger, wings broader, body more robust, ground colour of the forewing greenish without or with only very slight pastel-like ochreous-reddish shade. Hindwing with much stronger cellular lunule, transverse line and darker margin.



Fig. 1. *Polymixis bischoffi* (H.-S.) ♂. Greece, Samos, Ambelos Mountains, Stavrinides, 350 m, 18.X.1988, leg. Poul SVENDSEN. Wingspan 45 mm.



Fig. 2. *Polymixis culoti* (SCHAWERDA) ♂. Hellas, Attiki, Erythrae, 650 m, 29-30.IX.1984, leg. Michael FIBIGER. Wingspan 43 mm.

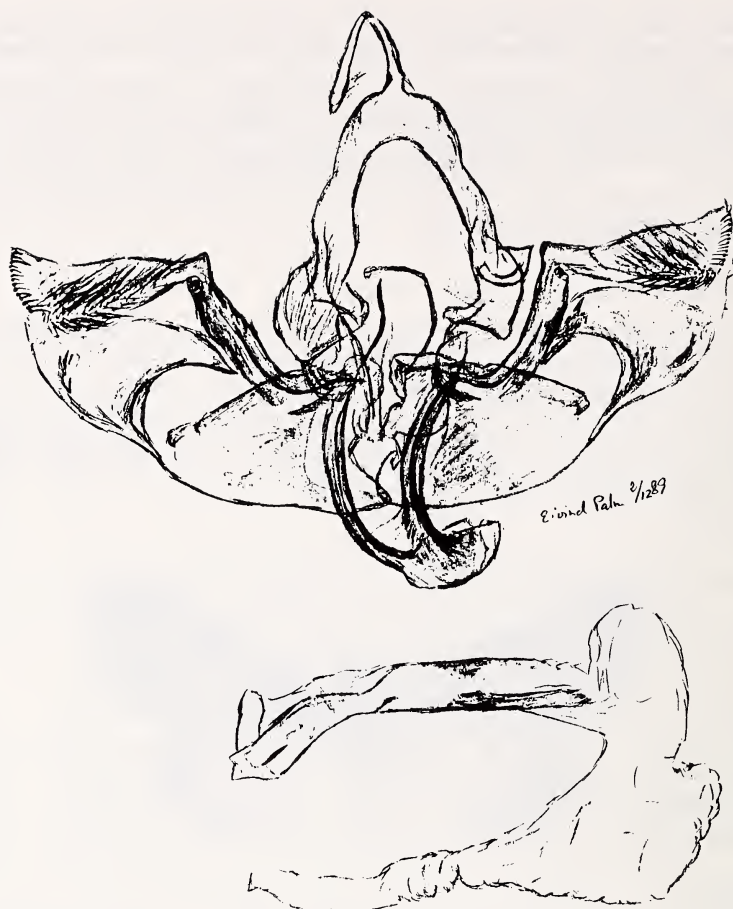


Fig. 3. *Polymixis bischoffi* (H.-S.), male genitalia, aedoeagus with vesica everted. Greece, Samos, Ambelos Mountains, Stavrínides, 350 m, 18.X.1988, leg. Poul SVENDSEN. Genit. präp. M. FIBIGER no.1300. E. PALM del.

Polymixis bischoffi

MALE GENITALIA (Fig. 3): Valvae large, strong and robust, apico-medially dilated. Sacculus large with very strongly sclerotised upper margin. Clavus very large, recurved into the ventral side. Harpe flattened, strongly arcuate. Ampulla absent. Costal margin broken rectangularly near its middle, apex of valvae pointed. Corona slightly developed. Aedoeagus long and strong with heavily sclerotised distal laminae. The everted vesica simple, without cornuti and with a large rounded basal diverticulum.

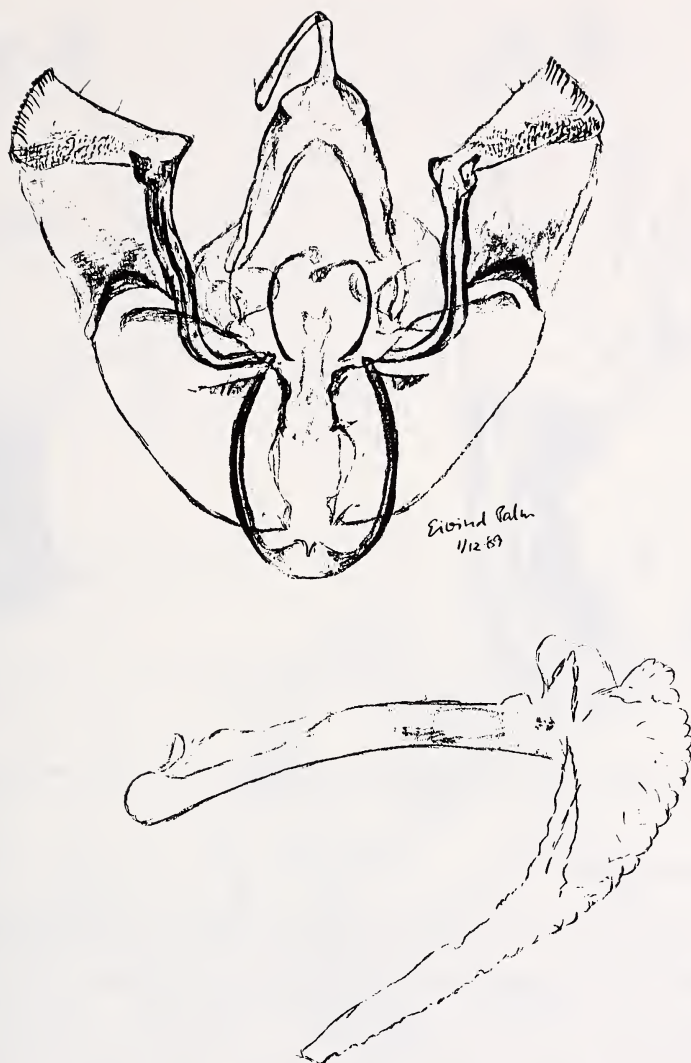


Fig. 4. *Polymixis culoti* (SCHAWERDA), male genitalia, aedeagus with vesica everted. Greece, Attiki, Erythrae, 650 m, 29-30.IX.1984, leg. M. FIBIGER. Genit. präp. M. FIBIGER no. 1299. E. PALM del.

FEMALE GENITALIA (Fig. 5) : Ostium bursae short and wide, strongly sclerotised. Ductus bursae heavily sclerotised, relatively long and slightly twisted. Bursa copulatrix long and relatively narrow, with two long ribbon-like signa.



5



6

Figs 5,6. Female genitalia. 5. *Polymixis bischoffi* (H.-S.). 6. *Polymixis culoti cretica* RONKAY & VARGA (after RONKAY & VARGA, 1986).

Polymixis culoti

MALE GENITALIA (Fig. 2) : The configuration of the male genitalia is somewhat similar to that of *bischoffi*. The distinctive features are as follows : Valvae smaller, less robust, clavus much smaller, more regular. Harpe less strong and arcuate, costal protuberance much larger and stronger, curved and flattened at the tip. Aedoeagus somewhat smaller. The everted vesica banana-shaped, shorter than that of *P. bischoffi*. Basal diverticulum much smaller.

FEMALE GENITALIA (Fig. 6) : Generally similar to that of *P. bischoffi*, but ductus bursae shorter and not twisted, plicae of both less sclerotised. The genitalia figured are of ssp. *cretica* RONKAY & VARGA, 1986.

Bionomics

Polymixis bischoffi is a xerothermophilic species which prefers rocky

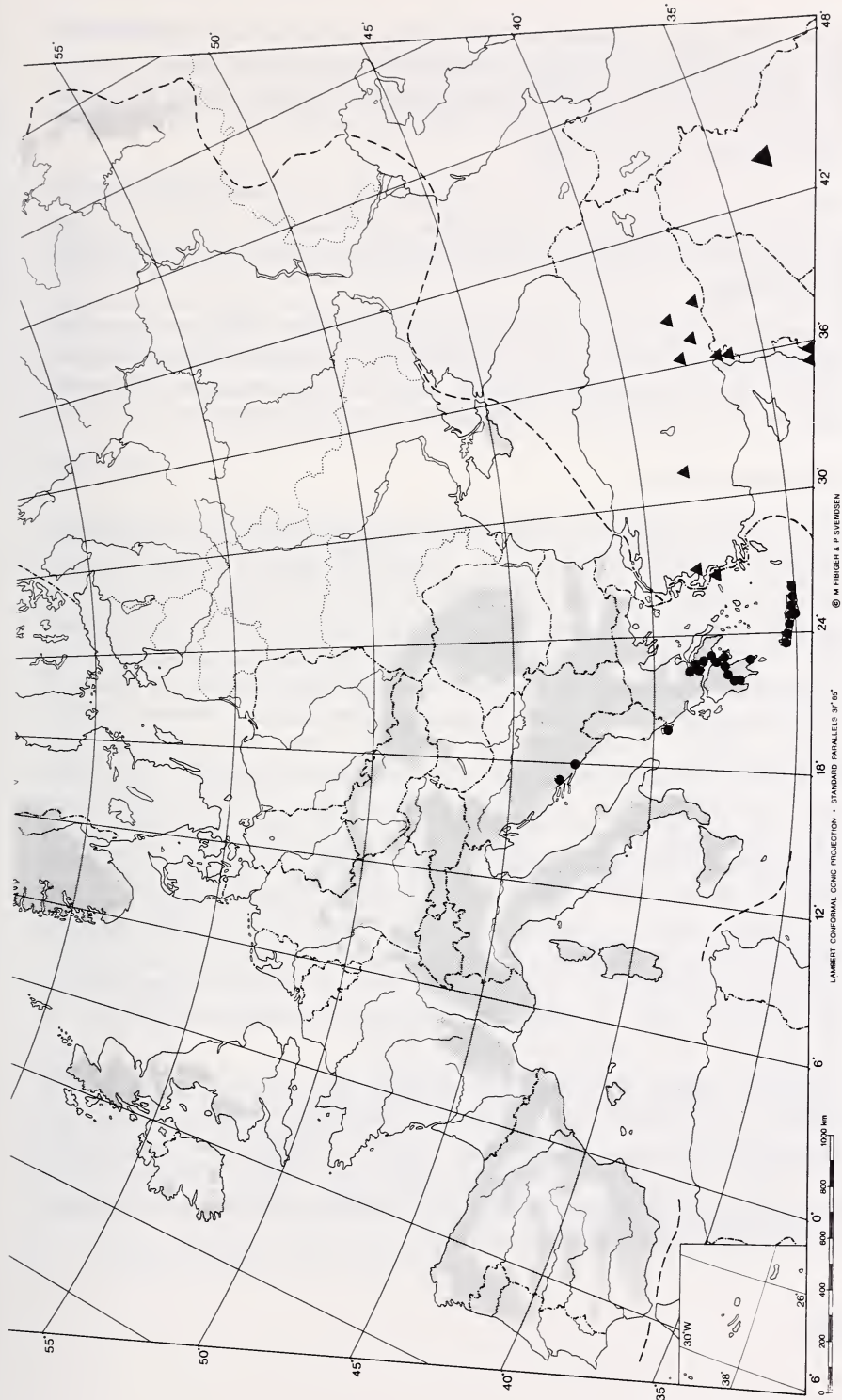


Fig. 7. The distribution of *Polymixis bischoffi* (H.S.) (triangles) and *Polymixis culoti* (Schawerda) (dots).

areas with scarce vegetation in mountain areas around 300-1000 m. The locality in the Ambelos Mountains on Samos fits the above description. WILTSHIRE (1957) describes the biotope of *bischoffi* as the woodland zone of mountains. According to HACKER (pers. comm., 1990) it prefers sugar to light.

The larvae of *bischoffi* feed polyphagously on low plants such as *Sonchus* and *Taraxacum* in November and December. The early stages are described by WILTSHIRE (1935). The moth appears from September to November.

Polymixis culoti is also a xerothermophilic species, which prefers south facing rocky areas with scarce vegetation at altitudes between 300 and 1100 m. The biology and immature stages are not described. The moth appears from September to December, in one generation.

Distribution (Fig. 7)

Polymixis bischoffi (H.-S.) occurs in Asia Minor, where the westernmost locality was the lectotype locality : Smyrna in western Turkey. Smyrna is now called Izmir and is only about 80 km from Samos. It is therefore not astonishing that *bischoffi* was found on Samos. Other Greek islands like Chios, which are also close to Turkey and Izmir might also have a population of *Polymixis bischoffi*. The known distribution of *bischoffi* is : **Greece**, Samos : Ambelos Mountains, Stavrinides/ Ambelos ; Pythagorion. **Turkey** : Izmir (lectotype locality), Prov. Hatay, Iskenderun, 25.X.1984, 1♀ (leg. SCHREIER), Prov. Seyhan, Saimbeyli, 23.X.1984 (leg. SCHREIER), Prov. Urfa, in the neighbourhood of Urfa, 30.X.1984 (leg. DITTRICH), Prov. Urfa, Halfeti, 26.X.1984 (leg. DITTRICH) (HACKER & WEIGERT, 1986). Prov. Hatay, Antakya, 10.X.1986 (HACKER & SCHREIER 1989). Prov. Malatya, Resadiye Gecidi, 3 km s. Erkenek, 1300 m, 5.X.1986 (HACKER, pers. comm., 1990). Aksehir (SCHWINGENSCHUSS, 1938), Marasch (OSTHELDER & PFEIFFER, 1933). **Lebanon** : Beirut (STAUDINGER, 1897), Dour el Choueir (Jabal Jannine Mountains), 1300 m (formerly known as Schweir) (ELLISON & WILTSHIRE, 1939). **Iraq** (WILTSHIRE, 1957).

Polymixis culoti (SCHAWERDA) inhabits the southern parts of the Balkans. It is known from Yugoslavia, Dalmatia : Dubrovnik (Ragusa) (SCHWINGENSCHUSS & WAGNER, 1925), Podgara Makarska, 17-18.X.1980 (leg. HENTSCHELEK) (HACKER, 1989). Greece, Corfu (SCHAWERDA, 1921) and central and southern Greece, Peloponnesus and Crete (HACKER, 1989).

Remarks

CULOT (1909) erroneously illustrated *Yigoga forcipula lithargyrula* (TURATI, 1919) as *Agrotis bischoffi* from Italy and Sicily (FIBIGER, 1990).

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