

Parna apicalis (Brischke, 1888) and *Hinatara recta* (G.C Thomson, 1871) (Symphyta: Tenthredinidae) in Hungary

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EDMUNDS, R: *Parna apicalis* (Brischke, 1888) and *Hinatara recta* (G.C Thomson, 1871) (Symphyta: Tenthredinidae) in Hungary.

Abstract: *Parna apicalis* (Brischke, 1888) is described as new to the Carpathian Basin and Hungary and *Hinatara recta* (G.C Thomson, 1871) represents the first record in over 100 years in Hungary.

Keywords: *Parna apicalis* (Brischke, 1888), *Hinatara recta* (G.C Thomson, 1871), Hymenoptera, Symphyta, Tenthredinidae, Hungary, Carpathian Basin, sclerotization, leaf mine, Tilia, phenology, morphology

Introduction

Following the classification of ROLLER and HARIS (2008), mining sawflies in the Carpathian Basin consist of 14 genera, of 2 subfamilies of Tenthredinidae namely: subfamily Heterarthrinae: *Endophytus* Hering, 1934; *Heterarthrus* Stephens, 1835; *Silliana* Malaise, 1949; *Hinatara* Benson, 1936; *Fenella* Westwood, 1840; *Fenusa* Leach, 1817; *Fenusella* Enslin, 1912; *Kaliofenusa* Viereck, 1910; *Parna* Benson, 1936; *Profenusa* MacGillivray, 1914; *Scolioneura* Konow, 1890; *Messa* Leach, 1817; *Metallus* Forbes, 1885 and subfamily: Nematinae: *Pseudodineura* Konow, 1885.

A search of the Fauna Europea website and the checklist of TAEGER et al. 2006, and LISTON 1995 seemed to indicate that both species were new to Hungary. Andrew Liston confirmed this with respect to data available to him. (In Fauna Europea *Parna apicalis* is listed as *Parna reseri* Liston, 1993). Checking the available faunistic literature from the Carpathian Basin, *Hinatara recta* (G.C Thomson, 1871), was recorded by several authors from Hungary (BÍRÓ 1881, CHYZER 1901, MOCSÁRY 1900, ROLLER and HARIS 2008) although even the youngest record is 115 years old. In detail, the following works provide faunistic data on the distribution of the genus *Parna* Benson, 1936 in the Carpathian Basin: HARIS 1998, MOCSÁRY 1900, SCOBIOLOA-PALADE 1974, 1981, HRUBÍK 1988, ROLLER 2005, 2007, ROLLER and HARIS 2008, ZOMBORI 1990b, NIESABITOWSKI 1899, NUNBERG 1948 and BEIGER 1982. All of them refer only to one species, namely *Parna tenella* (Kulg, 1816).

For the distribution of *Hinatara recta* (C. G. Thomson, 1871) in the Carpathian Basin, we have the following data: Újhely (BÍRÓ 1885 and CHYZER 1901), Sátoraljaújhely (MOCSÁRY 1900) Detonáta (Detunata) (ZILAHÍ KISS 1915, MÜLLER 1920), Erdély (Siebenbürgen) (SCOBIOLOA-PALADE 1974), Krassó-Szörény (Caras-Severin), Erdélyi

Szigethegység (Muntii Apuseni) (SCOBIOLA-PALADE 1981) and Trepcza k. Sanoka (BEIGER 1982).

ALTENHOFER, E., & PSCHORN-WALCHER (1998) described the leaf mines and larvae of *Hinatara* species.

Material and methods

On the last day of our city break in Budapest (21.iv.2016) my wife and I visited Margaret Island, where I found a leaf mine of *Parna apicalis* around 47°31'45.30"N and 19° 3'2.52"E and later the Gellért Monument approximately 47°29'19.86"N and 19° 2'49.89"E, where there was a leaf mine of *Hinatara recta*.

Results

Parna apicalis (Brischke, 1888)

Our boat trip along the Danube allowed us a break on Margaret Island and we walked around the Northern end of the island. It was here that I saw the mine of *Parna apicalis* on *Tilia* sp., this is a mine I am familiar with since its discovery in the UK (EDMUNDS et al. 2007).

On *Tilia* there are two sawfly leaf miners, which are separable on the basis of phenology and morphology - *Parna apicalis* (Brischke, 1888) and *Parna tenella* (Klug, 1816). Both are univoltine but *P. apicalis* forms leaf mines from late April to early June, whereas *P. tenella* mines from late May until early August.

The leaf mines of *P. apicalis* are smaller and found as semicircular blotch mines at the leaf edge, whereas those of *P. tenella* are much larger and cause the leaf to roll upwards. There may be several mines in a leaf in this latter species, whereas in *P. apicalis* there is usually only one. *P. tenella* also tends to be found in suckers at the base of its food plant, whereas *P. apicalis* is found in the leaf canopy of the tree (Fig. 1). HALSTEAD (2009), details differences in the frass of the two species with *P. apicalis* having small frass pellets 0.5mm long. Those of *P. tenella* are much larger at up to 2mm in length.

Both species feed on a number of *Tilia* species. In Germany, LISTON (2006), found *P. apicalis* mines on *T. cordata*, *T. platyphyllos*, *T. petiolaris*, *T. mongolica*, *T. x moltkei* and *T. x euchlora*. HALSTEAD (2009), lists the host plants for this species in the UK as *T. americana*, *T. cordata*, *T. 'Emerald Spire'*, *T. europaea*, *T. heterophylla*, *T. mexicana*, *T. mongolica*, *T. orbicularis*, *T. platyphyllos* and *T. tormentosa*.

HALSTEAD (2004) lists the *Tilia* species mined by *P. tenella* in the UK as *T. americana*, *T. chenmoui*, *T. chinensis*, *T. chingiana*, *T. cordata*, *T. x europaea*, *T. heterophylla*, *T. mexicana*, *T. 'Moltkei'*, *T. mongolica*, *T. oliveri* and *T. platyphyllos*.

The larvae of both species appear very similar (Fig. 2) but the adults can be separated on morphology. The adults of *P. apicalis* appear all to be female (ALTENHOFER 1980) and so the development of this species is parthenogenetically.



Fig. 1: Mines of *Parna apicalis* (Brischke, 1888) left and *Parna tenella* (Klug, 1816) right



Fig. 2: Larvae of *Parna apicalis* (Brischke, 1888) left and *Parna tenella* (Klug, 1816) right

The adults of *P. apicalis* and *P. tenella* may be distinguished as follows:

1. Rear legs with coxa, trochanters and base of femora black. Tegulae yellowish. Body length: 3.5-4.0 mm. Male unknown: probably does not occur in nature.....*P. apicalis*
- Rear legs with at most coxa black marked. Trochanters and femora entirely yellow. Tegulae dark brown or fuscous. Body length: 4.0-5.0 mm. Male frequent.....*P. tenella*

This record of *P. apicalis* is the first for Hungary and also the Carpathian Basin. It is present in Northern Europe up to Estonia and Finland.

It may be that it is an overlooked species as we found in the UK. Once identified it was discovered to occur widely (EDMUNDS 2009).

Hinatara recta (G. C. Thomson, 1871)

We spent the afternoon in Buda and walked back to our hotel in Pest, climbing up to the Szent Gellért Monument (bishop St. Gerard) from Hegyalja utca. Whilst climbing the stairs to this monument I noticed the distinctive leaf mine of *Hinatara recta* on *Acer platanoides*.

H. recta forms leaf mines on the tips of the young tender, freshly emerged leaves of *Acer platanoides* – usually on saplings and close to the ground. The initial mine is transparent but rapidly turns brown and the leaf tip shrivels. The frass is typically scattered throughout the mine. Mines are formed from late April through to June (Fig. 3 and 4).



Fig. 3: Mine of *Hinatara recta*
(C. G. Thomson, 1871)



Fig. 4: Larva of *Hinatara recta*
(C. G. Thomson, 1871)

This leaf miner is extremely rare in the Carpathian Basin with only historical records: Újhely (old name of Sátoraljaújhely which is now partly in Hungary and partly in Slovakia) Sátoraljaújhely (still in Hungary but probably same with the Újhely record). The part of Újhely which remained in Hungary is still called Újhely or Sátorajjáújhely while the disconnected part of the town is called now Slovenské Nové Mesto. Detonata (now in Romania, as Detunata), one indefinite record from SCOBOLA-PALADE (1981) from Krassó-Szörény county (now Județul Caras-Severin) and Trepca k Sanoka (Carpathian Basin part of Poland). That is all. From these 5 records, three of them are between 1885 and 1901 (ROLLER and HARIS 2008).

In Europe it is found mostly in Northern Europe and as far north as Sweden and down to Romania.

Further details on these leaf miners: EDMUNDS (2016) <http://www.leafmines.co.uk>; ELLIS (2016) <http://www.bladmineerders.nl>

Acknowledgements

Ewald Altenhofer for permission to use photos taken of his specimens, Willem Ellis and Andrew Halstead for help with references, Attila Haris for his help with distribution data and references and Andrew Liston for his help, suggestions and permission to use the key for separating the adults of *Parna* species on *Tilia*.

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Submitted: 12. 05. 2016

Accepted: 30. 05. 2016

Published: 30. 09. 2016