

Trifurcula headleyella, a new nepticulid moth for the Dutch fauna (Lepidoptera: Nepticulidae)

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Abstract: The nepticulid moth *Trifurcula headleyella* is recorded for the first time from The Netherlands. Dozens of adults of this species were found on the Brielsegatdam near Oostvoorne (province of South-Holland) on 26 July 2000. Two months later, at the same locality the larvae were collected on their foodplant, selfheal (*Prunella vulgaris*). This new locality for *T. headleyella* lies at a remote distance from the most nearby localities in Germany and England; nevertheless it seems that the species has become a resident here. Distinguishing characters, bionomics and geographical distribution are discussed.

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Introduction

In the second half of July 2000 we stayed on Voorne (province of South-Holland) for a couple of days. A slight improvement of the predominantly unfavourable weather led us to the decision to add a short visit to the parking-place at the beginning of the Brielsegatdam on 26 July 2000 before returning home the same evening. The parking-place struck us earlier because of its remarkable vegetation which shows a close resemblance to that of wet dune valleys. Shortly after our arrival we swept within a couple of minutes about thirty adults of a rather small nepticulid species from the low vegetation. At home it soon became clear that we were dealing with the well-recognizable nepticulid moth *Trifurcula headleyella* (Stainton), a species hitherto not recorded from The Netherlands.

In the next sections attention will be paid to identification, bionomics and geographical distribution of this rare species. Moreover, the results of our efforts to find the mines will be discussed.

In the Dutch checklist (Kuchlein & De Vos, 1999) *T. headleyella* (Stainton) has to be inserted as 0074a between *Stigmella roborella* (Johansson) and *Trifurcula cryptella* (Stainton). According to the letter code system adopted in The Netherlands and

Belgium the species will be coded as TRIFHEAD.

Identification

Trifurcula headleyella (fig. 1) is a small to medium-sized nepticulid moth with a wingspan of 4.2-5.8 mm. The ground colour of the forewing is blackish brown (in the female the basal third is shining lead grey), with a metallic silver tornal and dorsal spot. The frontal tuft and collar of the head are dark ferruginous to blackish brown in the male, in the female they are dark brown to black.

Trifurcula headleyella can be distinguished from all other *Trifurcula*-species of the Dutch list (viz. *T. cryptella* (Stainton), *T. eurema* (Tutt), *T. immundella* (Zeller), *T. squamatella* (Stainton) and *T. subnitidella* (Duponchel)) by the dark head and the presence of the two shining silvery spots on the forewing. Sometimes *T. eurema* and also *T. thymi* (Szöcs) (not Dutch), have pale spots, but these are small and dull whitish, not shining silvery. However, *T. headleyella* shows more similarity to some *Ectoedemia*-species (viz. *E. albifasciella* (Von Heinemann), *E. subbimaculella* (Haworth), *E. heringi* (Toll) and *E. erythrogenella* (De Joannis) (the latter not Dutch)), but can be separated from these species by the position of

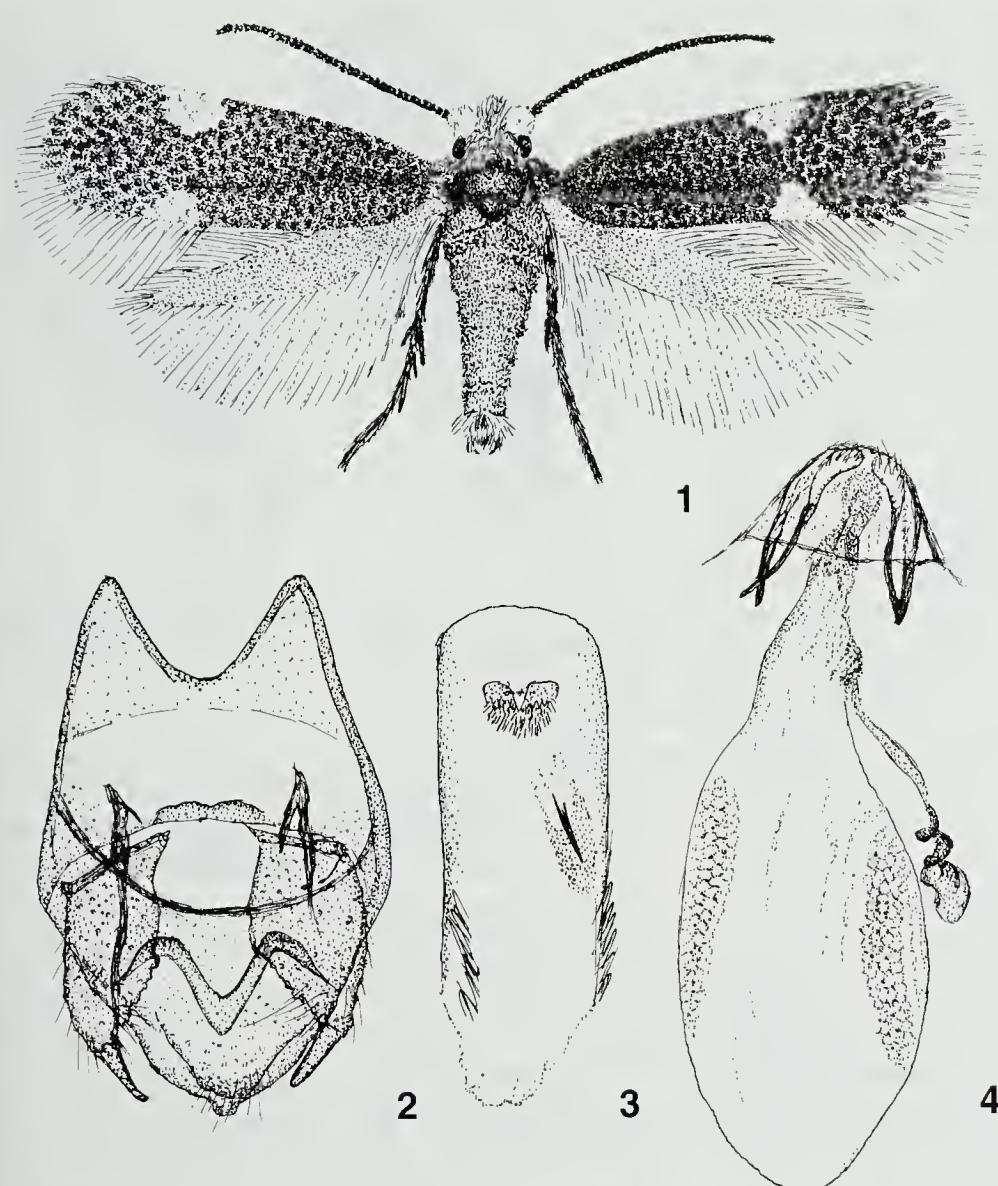


Fig. 1-4. *Trifurcula headleyella*. 1, male; 2, male genitalia; 3, aedeagus; 4, female genitalia.

the costal spot. In *Trifurcula headleyella* this spot is situated distinctly postmedial, whereas in the just mentioned *Ectoedemia*-species the spot is situated before or in the middle of the costa.

In the male genitalia (fig. 2) the uncus is pointed, and the valvae are triangular. The aedeagus (fig. 3) has one rather long and straight, pointed cornutus, and this character is unique among the thirty Dutch species belonging to the tribus Trifurculini. In *E. thymi* (not Dutch) the cornutus is similar, but curved and considerably longer.

The female genitalia (fig. 4) can be distinguished from other *Trifurcula*-species by the ductus spermathecae which has two distinct convolutions, preceded by a straight basal part. This ductus is relatively long: longer than half of the length of the corpus bursae. The vestibulum has no sclerotizations.

Bionomics

The vegetation on the sandy parking-place at the base of the Brielsegatdam shows a remarkable resemblance with that of wet dune valleys. It has a luxuriance of parnassia (*Parnassia palustris* L.), and also orchids, self-heal (*Prunella vulgaris* L.), black bog-rush (*Schoenus nigricans* L.) and creeping willow (*Salix repens* L.). This type of vegetation has now disappeared from large parts of the dunes in the provinces of North- and South-Holland and Zeeland; it still occurs, however, in the dunes of Voorne, near the site on the Brielsegatdam. The parking-place has to be considered therefore as a recently developed habitat as the Brielsegatdam was built about thirty years ago.

Trifurcula headleyella is the only nepticulid-species occurring on *Prunella*. According

to the literature (e.g. Johansson et al., 1990) the larva mines the leaves of selfheal (*Prunella vulgaris* L.), large selfheal (*P. grandiflora* L.) and cut-leaved selfheal (*P. laciniata* L.). In Central-Europe the mines have often been found on *P. grandiflora* (l.c.), but this foodplant does not occur in The Netherlands, nor does *P. laciniata*. For England only *P. vulgaris* is reported as a foodplant (Emmet, 1976), though all three mentioned *Prunella*-species are known from Britain.

Because selfheal occurs in large quantities on the site on Brielsegatdam it was a challenge to attempt to find the mines. On 24 september 2000 we paid a visit to the parking place, together with Mr C. J. M. Alders and Mr J. H. Donner. The plants of *P. vulgaris* on the Dutch location are relatively short, and the mined leaves are close to the ground, often hidden between the low vegetation. Yet we had no great difficulty in finding many dozens of mines, most of them occupied by larvae in various stages of their development. The mine starts as a narrow gallery with linear frass (fig. 5). The feeding-habits of the larva of *T. headleyella* are quite exceptional among nepticulid-moths, because the larva usually mines a second leaf (fig. 6). For that the larva bores down the petiole into the stem; sometimes even a third leaf is mined. The mine of the older larva is broader, sometimes blotch-like, with more irregular margins, causing the leaf to discolour purplish.

Most probably *T. headleyella* is univoltine throughout its distributional range with extended periods of larval feeding and periods of emergence. According to Emmet (1976) adults have been observed from late May to August and the larvae have been found from July until October, being most plentiful in September.

Geographical distribution

As far as we now can judge the distribution of *T. headleyella* shows disjunctions (fig. 7). The main centre of its distributional range is Central-Europe. At the northern edge of the range there are localities in Thuringia (Germany) (Steuer, 1995) and southern Poland

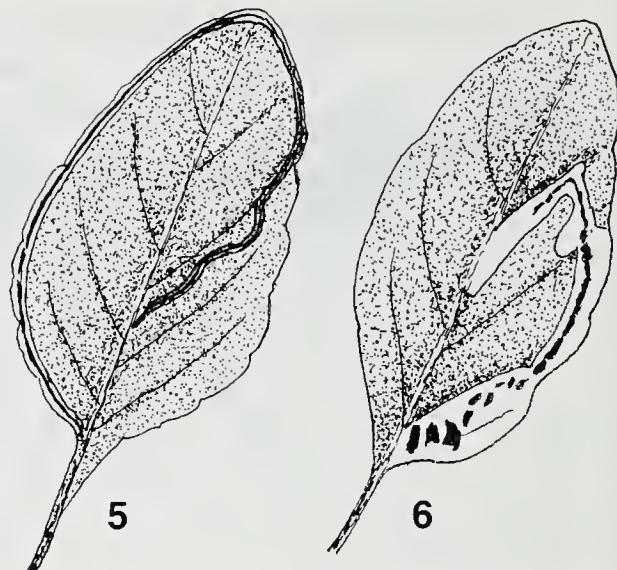


Fig 5-6. Leaves of selfheal (*Prunella vulgaris*) with mines of *Trifurcula headleyella*. 5, mine of the young larva; 6, mine of the older larva.

(Borkowski, 1969). In North Europe it occurs in a small belt extending from East Denmark, South Sweden, the three Baltic states and South Finland to Karelia (according to Puplesis (1994) the only territory in Russia where the species has been found). Still smaller territories occur in South England (Emmet, 1976) and in Northwest Germany where Biesenbaum (in litt.) captured six adults on three localities in the northern part of the Eifel (Nordrhein-Westfalen). Recently the species has also been recorded from France (Leraut, 1997) (not drawn on the distribution map). Furthermore there are findings from Italy, Rumania, Croatia and Greece.

The Dutch locality appears to be an isolated one. The distance to the localities in the Eifel in Germany amounts to about 260 km. Yet we consider *T. headleyella* as a resident in the coastal habitat and that means the addition of an interesting species to the Dutch fauna.

Samenvatting

De nepticulide *Trifurcula headleyella* wordt als nieuw voor de Nederlandse fauna gemeld. Van deze soort werd op 26 juli 2000 aan het begin van de Brielsegatdam bij Oostvoorne (provincie Zuid-Holland) een dertigtal adulten waargenomen en bovendien werden daar op 24 september van dat jaar tientallen rupsen verzameld op brunel (*Prunella vulgaris*). Deze nieuwe locatie ligt ver verwijderd van de dichtstbijzijnde vindplaatsen in Enge-

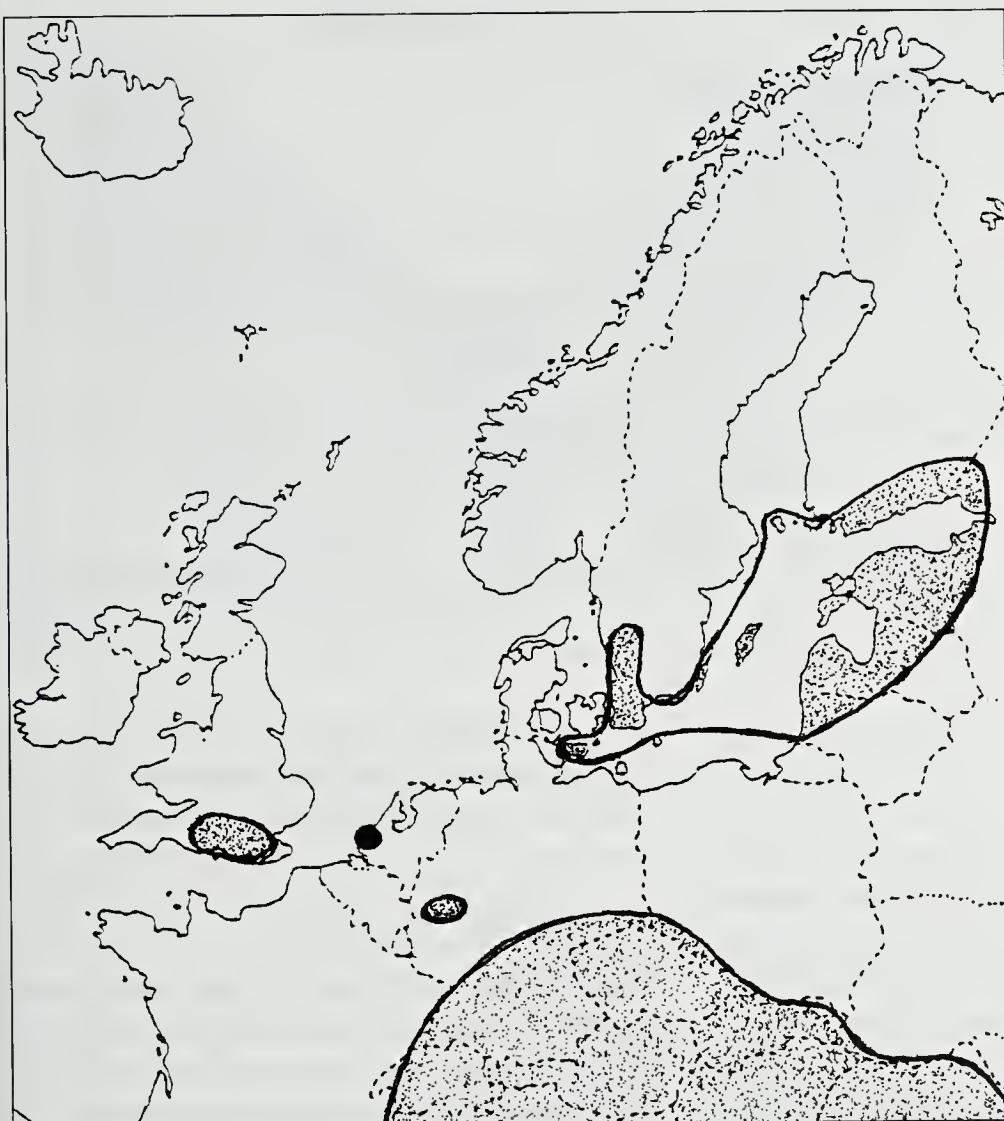


Fig. 7. Distributional range of *Trifurcula headleyella*.

land, Frankrijk en Duitsland, maar het ziet er toch naar uit dat *T. headleyella* op deze plek een standvlijnder is. Voorts worden in dit artikel onderscheidende kenmerken, levenswijze en geografische verspreiding behandeld.

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