

Agdistis adactyla, a new plume moth for The Netherlands (Lepidoptera: Pterophoridae)

J. B. WOLSCHRIJN & J. H. KUCHLEIN

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Abstract: The plume moth *Agdistis adactyla* is recorded for the first time from The Netherlands. One female of this species was captured at Twello (province of Gelderland) on 6 July 1999. This locality is situated far beyond the north-west limits of its range, which runs from Southern France to Northern Germany and Poland. External characters and the genitalia of the adults are depicted, and the bionomics and geographical distribution of the species are discussed.

J. B. Wolschrijn, Rijksweg 56, 7391 MS Twello, The Netherlands.

J. H. Kuchlein, Tinea Foundation, Zoölogisch Museum, University of Amsterdam, Plantage Middenlaan 64, 1018 DH Amsterdam, The Netherlands.

Introduction

Additions to the Dutch list of plume moths do not occur frequently. The last one dates back to more than 20 years (Kuchlein & Gielis, 1980; Gielis, 1983). However, the first author captured a female of a species of *Agdistis*, attracted to light at Twello (province of Gelderland) on 6 July 1999, which turned out to be *Agdistis adactyla* (Hübner). This species was hitherto not recorded from The Netherlands.

From Europe 24 species of *Agdistis* are known (Bigot & Picard, 1996) of which two are recorded now from The Netherlands. Besides *A. adactyla* only *A. bennetii* (Curtis,

1833) is found in our country, where it occurs in coastal salt-marshes.

In the Dutch checklist (Kuchlein & De Vos, 1999) *A. adactyla* (Hübner, 1819) can be inserted as 1215a between *Alucita grammodactyla* Zeller, 1841 and *Agdistis bennetii*. The finding of *A. adactyla* in The Netherlands deserves closer attention, because the species of the genus *Agdistis* present considerable identification problems, and also because the Dutch locality is far removed from the known range-limits of the species.

Identification

Species belonging to the pterophorid subfamily Agdistinae are easily recognized as such, in spite of the fact, that in contrast to other plume moths the wings are entire, not cleft. This is possible because the Agdistinae none the less show the characteristic appearance of a pterophorid.

Agdistis adactyla (fig. 1) is externally well



Fig. 1. Female of *Agdistis adactyla*.



Fig. 2. Forewing of *Agdistis bennetii* (upperside).

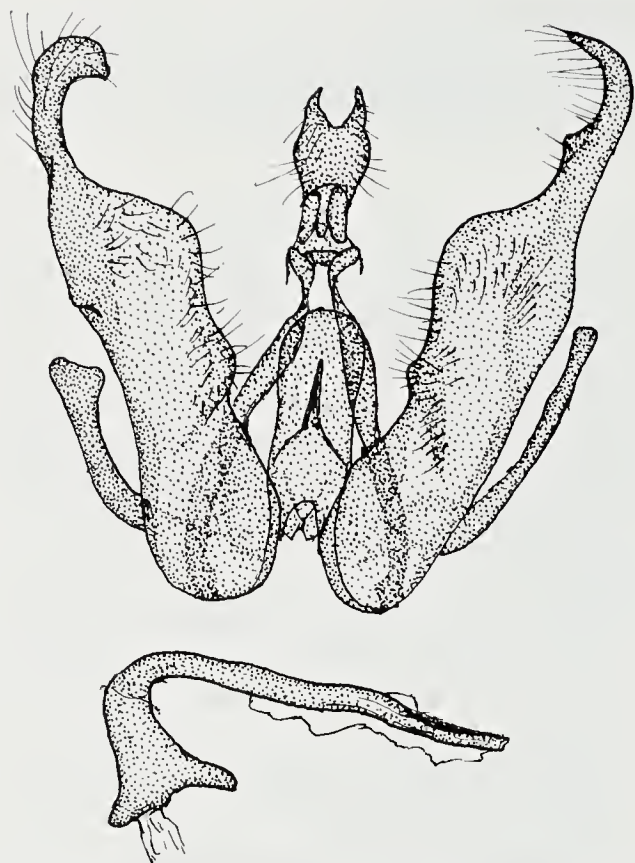


Fig. 3. Male genitalia of *Agdistis adactyla* (after Buszko, 1986; Arenberger, 1995).

distinguished from *A. bennetii* (fig. 2), the only other Dutch *Agdistis*-species, by its generally smaller size (20-26 versus 24-30 mm), and by the presence of four blackish dots on the cilia of the distal third of the forewing's costa. These dots are most pronounced on the underside of the wing. Moreover, there are some subtle differences in presence and distinctness of the forewing-markings. From Central and Western Europe eight more species of *Agdistis* are recorded, but it is often difficult to distinguish these from the Dutch species without dissection.

However, the recognition of the Central and Western European *Agdistis*-species by means of their genitalia does not present problems. The genitalia of *A. adactyla* can be characterized as follows. In the male (fig. 3) costal arms are present, the eighth sternite is connected with the saccus by a sclerotized hinge-like structure, and the uncus has two tips (the uncus does not consist of two parts as in *A. bennetii*). In the female (fig. 4) the caudal margin of the antrum lacks pointed processes; apophyses anteriores are present, but reduced

to short processes (of about one quarter of the length of the apophyses posteriores).

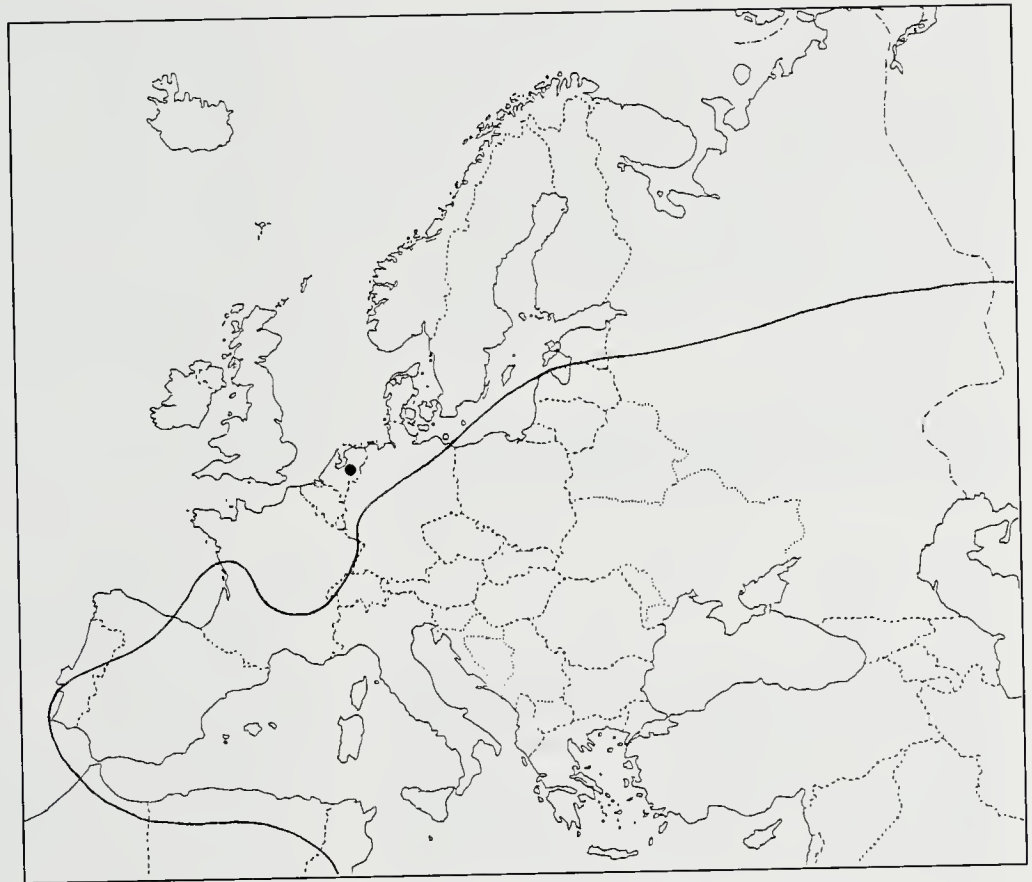
Bionomics

The main foodplant of *Agdistis adactyla* is *Artemisia campestris* L., of which the larva eats the leaves (Stange, 1900; Arenberger, 1995). Stange (1900) succeeded in obtaining the moths from larvae, found on *A. campestris*, but bred with *A. vulgaris* L. Buszko



Fig. 4. Female genitalia of *Agdistis adactyla*.

Fig. 5. Geographical distribution of *Agdistis adactyla* in Europe.



(1985) also mentioned *A. scoparia* Waldst. et Kit, but he did not repeat this in his review of the Polish Pterophoridae (Buszko, 1986).

In The Netherlands *Artemisia campestris* has its main distribution in the Rhine and IJssel part of the Fluviale phytogeographical district and in the inner dunes around Haarlem (Mennema et al., 1985). The Dutch specimen of *A. adactyla* was found about 2 km from the IJssel.

Besides *Artemisia* a lot of other foodplants are reported in the literature, viz. *Erica cinerea* L., *Santolina chamaecyparissus* L. (Lhomme, 1939), *Chenopodium fruticosum* L. (Arenberger, 1977), and *Helianthemum sessiflorum* (Desf.) Pers. (Arenberger, 1995). However, all these additional foodplants need confirmation.

In Northern Germany the larva lives until the end of June, by day much concealed in the lowest parts of the leaves or on the ground. It is very inactive and slow, and when touched assumes a peculiar condition of rigidity with the second and third segments elevated in a characteristic manner (Hofmann, 1896).

In Central Europe *A. adactyla* has one generation per year, the moths appearing in Ger-

many in June and July (Hofmann, 1896). In Southern Europe and Northern Africa apparently more than one generation occurs (Lhomme, 1939; Arenberger, 1995).

According to Sutter (1991) the moths start to fly just before dusk, but are not attracted to light. Curiously, the Dutch specimen came to light.

Geographical distribution

The distributional range of *Agdistis adactyla* covers large parts of the Palearctic Region, extending in a broad belt from Western Europe to Central Asia (Arenberger, 1995). In Europe it seems that the western limits of this range – roughly spoken – are constituted by a line from Portugal to Latvia (fig. 5). The locality nearest to the Dutch location is Kaub, which lies 25 km south of Koblenz in Rheinland-Pfalz, Germany (Arenberger, 1995). The distance from Kaub to Twello amounts to about 250 km.

As far as we know there is no evidence for recent expansion of *A. adactyla* in North-west Europe. Rather the contrary seems to happen, because many records in Western and North-

ern Germany refer to very old findings. This would indicate that we are dealing with a rare vagrant. On the other hand the Dutch specimen was captured, as explained already, in a region where the main foodplant occurs. Yet we prefer to consider *A. adactyla* here as a casual vagrant, awaiting further records from this part of Europe.

Note added in proof:

Mr W. Biesenbaum (Velbert-Langenberg, Germany) informed us that he captured a specimen in the Nahetal (Rheinland-Pfalz) this year, i.e. on the range border drawn in fig. 5.

Samenvatting

De vedermot *Agdistis adactyla* wordt voor het eerst uit Nederland gemeld. Van deze soort werd op 6 juli 1999 een wijfje gevangen te Twello (provincie Gelderland). Deze nieuwe vindplaats ligt ver buiten het areaal, waarvan de grens in Noordwest-Europa van West-Frankrijk naar Noord-Duitsland en Polen loopt. Uitwendige kenmerken en genitaliën van de adulten, alsmede levenswijze en geografische verspreiding van de soort worden behandeld.

Acknowledgement

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