

## **New aphid (Aphidoidea) records for the Netherlands (1984–2005)**

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**Key words:** Homoptera, food-plant, global warming, virus transmission, new taxa, aphid-host plant association

**Abstract:** Presented are 18 species of aphids in combination with their food-plants found in The Netherlands from 1984 to 2005 not earlier described here. Among these are well-known species that are caught with the high suction trap and/or MOERICKE yellow water traps and aphids new for The Netherlands. The taxa new for The Netherlands are: *Aphis nerii*, *Appendiseta robiniae*, *Myzocallis walshii*, *Myzus persicae nicotianae*, *Takecallis arundicolens* and *Takecallis arundinariae*. The aphid-host plant association *Aphis nasturtii* + *Aesculus hippocastanum* is the first observation at all as far as I know (BLACKMAN & EASTOP 1994). Some of these species are restricted to warmer regions but are able now to survive in Western Europe. This could be related to higher temperatures and/or milder winters in Western Europe in the last decade.

### **Introduction**

The aphid observations mentioned in this paper were done by VAN FRANKENHUYZEN (Wageningen), PONSEN (Wageningen) and the author himself. Most observations by VAN FRANKENHUYZEN were made on his trips through the surroundings of Wageningen to make photographs for his books on insects (VAN FRANKENHUYZEN 1992, 1996). However, not all the species they found I did see, in that case the description is from literature.

A number of the mentioned species are already well-known in The Netherlands since they are frequently caught with suction traps and MOERICKE yellow water traps, but never have been described on their food plants. Since aphids are important as vectors of plant viruses it is necessary to have information on their distribution and host plant relationships.

Mentioned are aphid-host plant associations together with a small (striking) description of the alatae. Only plants with colonies are mentioned to be sure that the plant is really a food-plant for that special aphid species. All colonies consisted of winged and wingless individuals with the exception of one, *Aulacorthum circumflexum* (Buckton) on *Astilbe chinensis*, of which just wingless individuals were present. Mentioned host plants occur in The Netherlands.

The aphids are arranged according to BLACKMAN & EASTOP (1994) and the genus names are in conformity with REMAUDIÈRE & REMAUDIÈRE (1997).

## Aphid species

### Calaphidinae: Panaphidini

#### *Appendiseta robiniae* (Gillette, 1907)

Found on the underside of the leaves of *Robinia pseudoacacia* in Wageningen (1989).

Pale yellow green with spinopleural and marginal longitudinal rows of pale powdery spots. Antennal segment III with 7–8 secondary rhinaria. Knobbed cauda.

Host plants are *Robinia pseudoacacia* and *Sophora japonica* (BLACKMAN & EASTOP 1994).

#### *Myzocallis walshii* (Monell, 1879)

Found on the underside of the leaves of *Quercus rubra* in Bennekom (23.VI.2000; VAN FRANKENHUYZEN).

Abdomen is entirely pale yellow. Antennae ringed with black broad bands of black pigment running down sides of thorax.

Host plants are *Quercus* spp., *Q. rubra* (BLACKMAN & EASTOP 1994; QUEDNAU 1999).

*Takecallis arundicolens* (Clarke, 1903)

Found on the underside of the leaves of *Pseudosasa japonica* in Wageningen (8.V.1998; VAN FRANKENHUYZEN).

Abdomen entirely pale yellow or greyish-yellow, antennae about 1.1 times as long as body. Short cornicles, somewhat shorter than breadth, pale with black tip, cauda knobbed and pitch black. Antennal segment III black on area of secondary rhinaria and on apex; antennal segment III with 4–7 secondary rhinaria. Wings with dark second branch of first cubital vein.

Host plants are *Arundinaria* sp., *Bambusa* sp., *Pseudosasa japonica*, *Phyllostachys* sp. (HIGUCHI 1968; HILLE RIS LAMBERS 1947).

*Takecallis arundinariae* (Essig, 1917)

Found on the underside of the leaves of *Phyllostachys* sp. in the atrium of I.B.N. (Institute for Forestry and Nature Research) in Wageningen (7.V.1999; PONSEN).

Head with a longitudinal brown line. Antennae about 1.2 times as long as body, antennal segment III with 4–8 secondary rhinaria. Short cornicles, somewhat shorter than breadth. Sclerotized knobbed cauda, double row of brown spinal tubercles on the abdomen.

Host plants are *Phyllostachys* spp. (HIGUCHI 1968).

Chaitophorinae: Chaitophorini

*Periphyllus californiensis* (Shinji, 1917)

Found on the underside of the leaves of *Acer campestre* in Wageningen (29.IV.1991; VAN FRANKENHUYZEN).

Abdomen with dark marginal sclerites and dorsal cross bands darker than the pterostigma. Antennal segment III with 7–25 secondary rhinaria. Cross bar on abdominal segment V with more than 6 hairs.

Host plants are *Acer campestre* and *Acer* spp.

Aphidinae: Aphidina

*Aphis frangulae beccabungae* Koch, 1855

Found on the underside of the leaves of *Solanum tuberosum* cultivar 'Bintje' in Wageningen (VII, 1996).

Coloration of abdomen very variable: from green to green-yellow, yellowish brown or light brown. Proximal parts of antennal segments III and IV pale and antennal segment III with 5–10 secondary rhinaria. Cornicles black. Cauda brown or green.

As *Aphis frangulae frangulae* its primary host is *Frangula alnus*. *A. frangulae beccabungae* has a number of secondary hosts (no Cucurbitaceae) among which is *S. tuberosum* one of them (HEIE 1986).

*Aphis nasturtii* Kaltenbach, 1843

Found on the underside of the leaves of *Aesculus hippocastanum* in Wageningen (28.VIII.2005).

Abdomen yellow or green, with dark marginal sclerites and occasionally also cross bars on tergites VII and VIII. Cornicles are dusky, dark green or brown; cauda paler than cornicles. Antennae, except base of segment III, dark, about 0.8 times body. Antennal segment III with 6–16, IV with 1–6 and V with 0–2 secondary rhinaria.

Its primary host is *Rhamnus catharticus* and secondary hosts are a. o. *Nasturtium* spp., *Polygonum* spp., *Solanum tuberosum* (BLACKMAN & EASTOP 1994).

*Aphis nerii* Boyer de Fonscolombe, 1841

Found on young stems of *Asclepias* sp. in Arnhem (28.IX.1999).

Body is bright yellow/orange-yellow with black cornicles and cauda, antennae and legs also predominantly dark and dark wing veins. Antennal segment III with 6–13 and IV with 0–5 secondary rhinaria. Cornicles are cylindrical and about equal in length to the terminal process.

Host plants are of the families Asclepiadaceae and Apocynaceae. The aphids live on the upper and lower sides of leaves and flower stalks.

*Aphis verbasci* Schrank, 1801

Found on the undersides of the leaves of *Buddleja davidii* in Arnhem (19.V.1991; VAN FRANKENHUYZEN).

Abdomen is bright golden yellow to pale green with black cornicles. Antennal segments III+IV with 9-23 secondary rhinaria.

Its host plants are *Buddleja* spp. and *Verbascum* spp. (BLACKMAN & EASTOP 1994).

#### Aphidinae: Rhopalosiphina

*Rhopalosiphum nymphaeae* (Linnaeus, 1761)

Found on *Stratiotes aloides* in Rhenen (5.VIII.1999).

Abdomen is greenish-brown. Antennal segment III with 14–24 and IV with 0–8 secondary rhinaria. Cornicles more than twice as long as the cauda, swollen, with apical constriction.

Its primary hosts are *Prunus* spp. And its secondary hosts are aquatic plants, especially (on the lower side of leaves of) Nymphaeae (HEIE 1986).

Aphidinae: Macrosiphini

*Aulacorthum circumflexum* (Buckton, 1876)

Found on *Astilbe chinensis* in Wageningen (VI.2004).

Only wingless individuals were available. Typical dark brown to black patch on the pale bright green abdomen. The antennae somewhat longer as body, antennal segment III with 0–2 secondary rhinaria. Cornicles pale with a flange. Cauda pale.

*A. circumflexum* is polyphagous.

*Aulacorthum solani* (Kaltenbach, 1843)

Found on *Pelargonium* spp. (VI.1991) and on *Hibiscus rosa-sinensis* in Wageningen (3.X.2005).

Abdomen green, with dark brown or black, dorsal, transverse bands and dashes. The antennae are dark brown to black with segment II and the bases of segments III to V light brown. Antennal segment III with 5–26 secondary rhinaria. Cornicles are pale with black tips and have a distinct flange. Cauda is pale. Wings each with 1 oblique vein.

*A. solani* is polyphagous.

*Brachycaudus cardui* (Linnaeus, 1758)

Found on *Chrysanthemum leucanthemum* in Wageningen (VII.1991).

Abdomen with dark marginal sclerites and a large dorsal patch on segments III–VII, on posterior segments consisting of separate cross bars. Antenna 0.8–0.9 times the body; terminal process 3–5 times base of VI. Antennal segment III with 15–33 secondary rhinaria. Cornicles are approximately 3–4 times as long as wide.

The primary hosts are *Prunus* spp. The secondary hosts are many kinds of herbaceous plants, primarily Asteraceae and Boraginaceae.

*Macrosiphoniella tanacetaria* (Kaltenbach, 1843)

Found on *Chrysanthemum leucanthemum* in Wageningen (VII.1991).

Abdomen is light grey green. The antennae are somewhat longer than the body, antennal segment III with 40–63 secondary rhinaria. Cornicles are dark and approximately 1/8 length of the body. Cauda is dark.

Host plants are *Tanacetum vulgare*, *Tanacetum* spp. (HILLE RIS LAMBERS 1938).

*Macrosiphum euphorbiae* (Thomas, 1878)

Found on *Brassica napus*, *Solanum melongena* and *Vicia faba* in Wageningen (VII.2003).

Abdomen is light green to pink with dark blackish-brown to black antennal segments III (except base) IV to VI. The antennae are longer than the body, antennal segment III with 12–21 secondary rhinaria along one side. Cornicles are long, slender and twice as long as the cauda. Cauda is very long and narrow.

*M. euphorbiae* is polyphagous; host plants are a. o. *Solanum tuberosum*, *Beta vulgaris*, *Freesia* spp., *Cineraria* spp. (HILLE RIS LAMBERS 1939).

*Myzus persicae nicotianae* Blackman, 1987

Found on *Capsicum annuum* (1993), *Cucumis sativus*, *Solanum melongena*, *Gypsophila muralis*, *Alstroemeria aurantiaca* (1994) and *Brassica chinensis* (1998); (VAN STEENIS, GULDEMOND, DIELEMAN).

Abdomen is dark pink, red. Not that dark red as the red form of *Myzus persicae* mentioned here. Antennal segment III with 7–16 secondary rhinaria arranged in a row on its entire length. Has somewhat darker cornicles.

Host plants are a. o. *Cucumis sativus*, *Solanum melongena*, *Capsicum annuum*, *Brassica chinensis*, *Alstroemeria aurantiaca*, etc. (GULDEMOND & DIELEMAN 1994).

*Myzus persicae* (Sulzer, 1776) (dark red form).

Found on *Solanum tuberosum* cultivar 'Bintje' in Wageningen (30.VII.2004).

Rather rare winged individuals are developed. The abdomen is dark-red with a black, dorsal patch on tergites III–VI. The cornicles are blackish-brown and somewhat swollen distally, over twice as long as the cauda. Antennal segment III with 6–17 secondary rhinaria arranged in a row on its entire length.

*Myzus varians* Davidson, 1912

Found on *Clematis* sp. in Wageningen (VIII.1983).

*M. varians* has a dark appearance with a dark patch on the dorsum, hind wings with 2 oblique veins, completely dark antennae. The antennae are shorter than the body, antennal segment III with 5–12 secondary rhinaria. Dark, slightly tapered cornicles, longer than cauda. Cauda is pale, more than twice as long as wide.

The primary host is *Prunus persica* (rather damaging) and the secondary host is *Clematis* spp. (STOETZEL & MILLER 1998).

## Acknowledgements

I wish to express my thanks to the late Mr. A. VAN FRANKENHUYZEN (Wageningen, The Netherlands) for sampling a part of the mentioned aphid species. To Mr. M. B. PONSEN (Hollandseweg 204, 6706 KW Wageningen, The Netherlands) for lending me his manuscript before publishing. To Dr. S. SUGIMOTO and Dr. K. KITAGAWA (Ministry of Agriculture, Forestry and Fisheries, Plant Protection Division, Tokyo, Japan) for supplying me copies of *Insecta Matsumurana*.

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Band/Volume: [33 2009](#)

Autor(en)/Author(s): Piron Paul G. M.

Artikel/Article: [New aphid \(Aphidoidea\) records for the Netherlands \(1984–2005\)  
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