

**NOTES ON TWO NEW APHID SPECIES  
(HEMIPTERA: APHIDIDAE) DETECTED IN CHILE**

VICTOR F. EASTOP<sup>1</sup>, OLE E. HEIE<sup>2</sup>, EDUARDO FUENTES-CONTRERAS<sup>3</sup>, JAN PETTERSSON<sup>4</sup>,  
AND HERMANN M. NIEMEYER<sup>3</sup>

ABSTRACT

Two new aphidinae species for Chile, *Aphis nasturtii* Kaltenbach and *Wahlgreniella nervata* (Gillette), were collected in the Área Metropolitana. Morphological characters and biological features of these species are briefly reviewed.

Key words: Chile, *Aphis*, *Wahlgreniella*, new records.

RESUMEN

Dos especies de Aphidinae nuevas para Chile, *Aphis nasturtii* Kaltenbach y *Wahlgreniella nervata* (Gillette), fueron colectadas en el Área Metropolitana. Se revisan brevemente algunos antecedentes biológicos y caracteres morfológicos de estas especies.

Palabras clave: Chile, *Aphis*, *Wahlgreniella*, nuevos registros.

***Aphis nasturtii* Kaltenbach, 1843**

Synonyms (following Eastop & Hille Ris  
Lambers, 1976)

- = *Aphis abbreviata* Patch, 1912
- = *Aphis acetosella* Theobald, 1918
- = *Aphis cathartica* del Guercio, 1909
- = *Aphis githaginella* Theobald, 1927
- = *Aphis linguae* Opmanis, 1928
- = *Aphis mathiolae* Theobald, 1928
- = *Aphis neopolygona* Theobald, 1927
- = *Aphis pedicularis* Buckton, 1879
- = *Aphis polygona* van der Goot, 1912 nec  
Walker, 1848; Macchiatti, 1885

- = *Aphis rhamnii* auctt. nec Boyer de  
Fonscolombe, 1841
- = *Aphis transiens* Walker, 1849  
(Figures 1b, 2b,2d)

**Morphological description:** (Plate 32, page 427 in Blackman & Eastop, 1984) This species has egg-shaped yellow, yellowish green or light green apterae 0.9-2.4 mm long, with rather short antennae, 0.5-0.8 times as long as the body. The siphunculi are rather short, 0.11-0.15 times as long as the body, cylindrical and pale with dark apices. Alatae have a yellow or green abdomen with dark spots along the margins. *A. nasturtii* is generally similar to *A. gossypii* Glover, but they can be separated as follows:

**Apterae viviparae**

1. Siphunculi uniformly dark (Figure 1a). Hairs on femora shorter than the basal diameter of the femur (Figure 1a). Processus terminalis 1.3 - 2.7 times as long as the cauda ..... *A. gossypii*
- Siphunculi paler at the base than apex (Figure 1b). Many hairs on femora as long as or larger than the basal diameter of the femur (Figure 2b). Processus terminalis 1.0 - 1.6 times as long as the cauda ..... *A. nasturtii*

<sup>1</sup>Department of Entomology, The Natural History Museum, London, SW7 5DB, U.K.

<sup>2</sup>Department of Biology, DLH, Emdrupvej 101, DK-2400 Copenhagen NV, Denmark.

<sup>3</sup>Departamento de Ciencias Ecológicas, Facultad de Ciencias, Universidad de Chile, Casilla 653, Santiago, Chile.

<sup>4</sup>Department of Entomology, Swedish University of Agricultural Sciences, P.O. Box 7044, S-750 07.

(Received: August 4, 1996. Accepted: February 12, 1997)

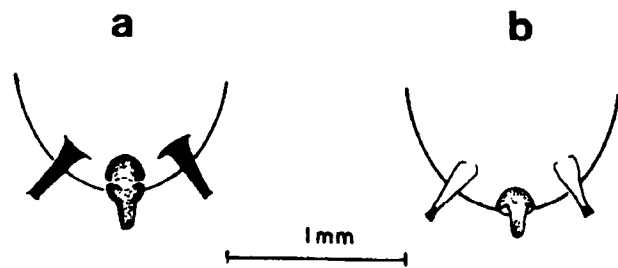


Figure 1: Abdomen of apterae. a. *A. gossypii*; b. *A. nasturtii*.

#### Alatae viviparae

1. Antennae with secondary rhinaria distributed III 3-16; IV 0 (Figure 2c), exceptionally 1-3; V 0. Processus terminalis 1.8 - 3.5 times as long as the cauda ..... *A. gossypii*
- Secondary rhinaria distributed III 8-16; IV 1-6 (Figure 2d), V 0-2. Processus terminalis 1.4 - 2.1 times as long as the cauda ..... *A. nasturtii*

Remaudière (1994) provides a key for the identification of further South American species of the genus *Aphis*.

**Biological features:** In the Northern hemisphere this species is holocyclic, alternating between *Rhamnus cathartica* (and *R. alnifolia*) and a wide variety of secondary hosts, among them *Solanum tuberosum*. Spring colonies on *Rhamnus* cause typical distortion of young leaves (Blackman & Eastop, 1994; Heie, 1986). In Argentina it has been collected on *Rumex* sp. and *Rumex crispus* (Starý & Delfino, 1987; Nieto Nafría *et al.*, 1994).

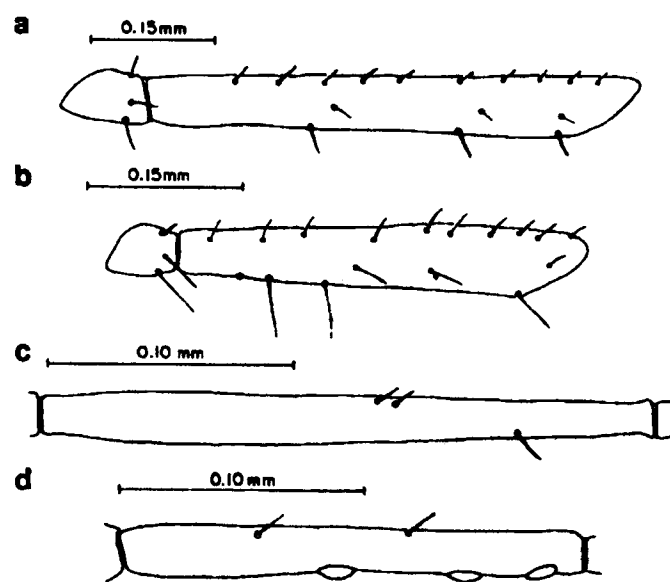


Figure 2: Hind trochanter and femur of apterae. a. *A. gossypii*; b. *A. nasturtii*. Fourth antennal segment of alatae. c. *A. gossypii*; d. *A. nasturtii*, showing three secondary rhinaria.

**Geographical distribution:** It is widely distributed in the Northern hemisphere, mainly in Europe across Asia to Japan, introduced and widespread in North America as well (Blackman & Eastop, 1994). In the Neotropical area has been previously reported from Argentina (Smith & Cermeli, 1979; Starý & Delfino, 1987; Nieto Nafría *et al.*, 1994).

**Collection site and date:** One apterous viviparous female on *Drimys winteri* J.R. et G. Forster var. *winteri* (Winteraceae) at the botanical garden of the Campus Juan Gómez Millas, Universidad de Chile, (October 23, 1991).

#### *Wahlgreniella nervata* (Gillette), 1908

Synonyms (following Eastop & Hille Ris Lambers, 1976)

- = *Amphorophora cicutae* Shinji, 1917
  - = *Amphorophora halli* Knowlton, 1927
  - = *Amphorophora henryi* Balachowsky & Cairaschi, 1941
  - = *Amphorophora janesi* Knowlton, 1938
  - = *Aulacorthum clavicornis* Richards, 1972
  - = *Rhopalosiphum arbuti* Davidson, 1910
  - = *Rhopalosiphum nervata* Gillette, 1908
- (Figure 3)

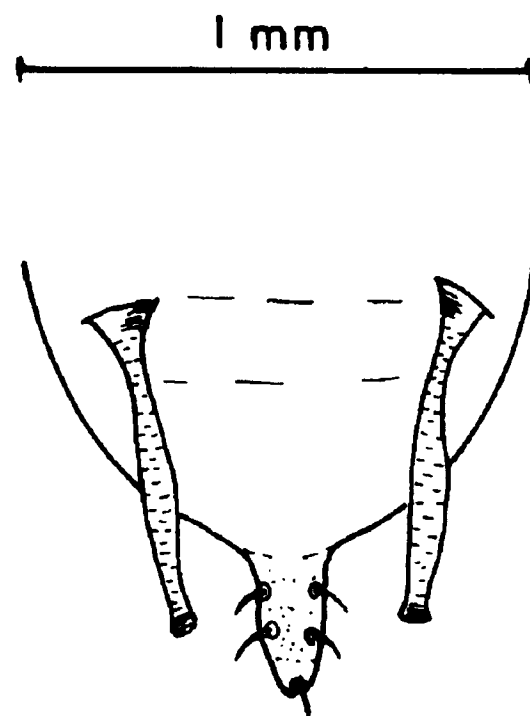


Figure 3: Abdomen of apterae of *W. nervata* showing clavate siphunculi and five caudal hairs.

**Morphological description:** (Plate 128, page 459 in Blackman & Eastop, 1984) This species has spindle-shaped pale green apterae 1.4-2.5 mm long, with long slender swollen pale siphunculi with dark apices. Alatae have a green abdomen with variably developed dorsal pigmentation which is sometimes barely detectable and at the other extreme forms a much perforated central patch. *Wahlgreniella* Hille Ris Lambers 1949 differs from other genera of Macrosiphini by the combination of smooth, slender clavate siphunculi, a pointed cauda usually bearing only 5 (rarely up to 7) hairs (Figure 3), the absence of secondary rhinaria from the antennae of apterae, and by the dark wing veins of the alatae (Hille Ris Lambers, 1949). Only one other species of *Wahlgreniella* is recorded from South-America, *W. australis* Delfino (Delfino, 1981) which appears to be a synonym of '*Amphorophora*' *peruviana* Essig (Essig, 1953). *W. australis* was described from *Cayaponia* sp. (Cucurbitaceae), a surprising host for *Wahlgreniella* which is mostly associated with Rosaceae and Ericaceae. The host of *A. peruviana* is not known. The two species can be separated by the following key for the South American species of *Wahlgreniella*.

#### Apterae viviparae

1. Body 2.3 - 3.2 times as long as the siphunculi which are 4.5 - 6.3 times as long as the base of the sixth antennal segment; cauda 1.9 - 2.8 times as long as the base of the last antennal segment, on *Rosa* spp ..... *W. nervata*
- Body 4.1 - 5.2 times as long as the siphunculi which are 2.5 - 3.3 times as long as the base of the last antennal segment; cauda 1.2 - 1.5 times as long as the base of the last antennal segment, on *Cayaponia* sp ..... *W. australis*

#### Alatae viviparae

1. Body 2.8 - 4.0 times as long as the siphunculi which are 3.9 - 5.6 times as long as the base of the last antennal segment; cauda 1.5 - 2.3 times as long as the base of the last antennal segment, on *Rosa* spp ..... *W. nervata*
- Body 4.9 - 5.6 times as long as the siphunculi which are 2.3 - 2.8 times as long as the base of the last antennal segment; cauda 1.0 - 1.3 times as long as the base of the last antennal segment, on *Cayaponia* sp ..... *W. australis*

**Biological features:** In North America this species seems to be holocyclic and heteroecious between *Rosa* spp. and Ericaceae, including *Arbutus* spp., while in Europe introduced anholocyclic populations occur on both host-plants (Blackman

& Eastop, 1994). In Argentina it has been collected on *Rosa* sp. (Nieto Nafria *et al.*, 1994).

**Geographical distribution:** Nearctic and introduced to Palearctic Europe. In the Neotropical region it has been previously reported from Brazil (Smith & Cermeli, 1979) and Argentina (Nieto Nafria *et al.*, 1994).

**Collection site and date:** Apterae and alatae viviparous on *Rosa* sp. (Rosaceae) at the botanical garden of the Campus Juan Gómez Millas, Universidad de Chile, Santiago (September 26, 1995). The rose bushes were also infected with the "rose aphid" *Macrosiphum rosae* (L.). The aphids were preyed on by syrphid larvae and the plants were searched by females of *Diplazon laetatorius* (F.) (Ichneumonidae: Diplazontinae) a parthenogenetic parasite of Syrphidae.

#### ACKNOWLEDGEMENTS

We thank Dr. Mike Mofitton from The Natural History Museum (London, UK) for the identification of the parasitoid species. Financial support of International Program in the Chemical Sciences (IPICS), International Foundation for Science (IFS) and the Department of Research Co-operation (SAREC, Sweden) is gratefully acknowledged. EFC wishes to acknowledge a Doctoral Fellowship from CONICYT-Chile.

#### LITERATURE CITED

- BLACKMAN, R.L. & V.F. EASTOP. 1984. Aphids on the World's Crops. An identification Guide. Wiley-Interscience Publications, Chichester, 466 pp.
- BLACKMAN, R.L. & V.F. EASTOP. 1994. Aphids on the World's Trees. An identification and Information Guide. CAB International, Cambridge, 986 pp.
- DELFINO, M.A. 1981. Una nueva especie del género *Wahlgreniella* Hille Ris Lambers, 1949 (Homoptera: Aphididae). Revista de la Sociedad Entomológica Argentina, 40: 183-186.
- EASTOP, V.F. & D. HILLE RIS LAMBERS. 1976. Survey of the world's aphids. Dr. W. Junk b.v., Publishers, The Hague, 573 pp.
- ESSIG, E. 1953. Some new and noteworthy Aphidae from Western and Southern South America (Hemiptera-Homoptera). Proceedings of the California Academy of Sciences, Ser. 4, 28: 59-164.
- HEIE, O.E. 1986. The Aphidoidea (Hemiptera) of Fennoscandia and Denmark III. Pterocommatinae and Aphidinae, Aphidini. Fauna Entomologica Scandinavica, 17: 1-314.

- HILLE RIS LAMBERS, D. 1949. Contributions to a monograph of the Aphididae of Europe. *Temminckia*, 8: 183-186.
- REMAUDIÈRE, G. 1994. Revue et clé des espèces sud-américaines d' Aphidina et description d'un *Aphis* nouveau (Homoptera, Aphididae). *Revue Française de Entomologie (N.S.)*, 16: 109-119.
- SMITH, C.F. & M.M. CERMELI. 1979. An annotated list of Aphididae (Homoptera) of the Caribbean Islands and South and Central America. North Carolina Agricultural Research Service, Technical Bulletin, 259: 1-131.
- STARÝ, P. & M.A. DELFINO. 1987. Parasitoids (Hym.; Aphidiidae) of aphids (Hom.; Aphididae) in Tucumán, Argentina. *Bolletino del Laboratorio di Entomologia Agraria Filippo Silvestri*, 43: 41-50.
- NIETO NAFRÍA, J.M.; M.A. DELFINO & M.P. MIER DURANTE. 1994. La afidofauna de la Argentina, su conocimiento en 1992. *Secretariado de Publicaciones Universidad de León, León*, 235 pp.