

**DESCRIPTION OF APTEROUS AND ALATE
VIVIPAROUS FEMALE OF
NASONOVIA (HYPEROMYZUS) LACTUCAE LINNAEUS
(HOMOPTERA : APHIDIDAE)**

SHAHINAZ A. ABD EL-SALAM AND H.E. MEGAHED

Plant Protection Research Institute, Agricultural Research Centre, Dokki, Giza, Egypt.

(Manuscript received February 2001)

Abstract

Hyperomyzus lactucae Linnaeus was recorded in Egypt on *Sonchus oleraceus* at Giza and North Sinai Governorates.

The main characters of *H. lactucae* L. are the great number of secondary sensoria on the 3rd, 4th and 5th antennal segments, the presence of an irregular broken area dorsally on the abdominal 3-5 segments and the swollen cornicles.

Measurements and descriptions of different forms of the aphid species were studied.

SYNONYMY

Aphis lactucae Kaltenvach, M. der Fam. der Pfl. p. 37 (1843).

Aphis lactucae Linnaeus, Ann. Nat. Hist., Ser. 2, Vol. 2, p. 49 (1849).

Rhopalosiphum ribis Linnaeus, Koch, Die Pfl. Aph. p. 39 (1854).

Rhopalosiphum lactucae (Kaltenbach) Passerini, Aphididae, Italicae, p. 20 (1863).

Amphorophora cosmopolitana Mason, Proc. V. S. Nat. Mus., Vol. 67, p. 16-26 (1925).

Hyperomyzus lactucae Börner, KL. Mitt. Ufer Blattl. (ed. Börner), p. 2.

Nasonovia (Hyperomyzus) lactucae, Eastop, Colonial Office, Hull Printers Limited, London.

INTRODUCTION

Nasonovia (Hyperomyzus) lactucae Linnaeus was recorded on *Sonchus oleraceus* in Egypt, at Sinai Governorate during 2001. Aphids were observed feeding on the lower surfaces of the young leaves all year round. The infestation was severe during two periods; the first during March till May, while the second during August and September.

H. lactucae was described by Mason (1925) as *Amphorophora cosmopolitana* M. and found it infesting *Ribes* sp. and *Cichorium* sp. Theobald (1926) described it under

the same name and mentioned that this species infests currant, lettuce and southistles. Hille Res Lambers (1949) and Bodenheimer and Swirski (1957) reported *Ribes* sp., *Sonchus* sp. and *Lactuca sativa* as host plants of this species. Habib and El-Kady (1961) gave a brief description to the alate form. Eastop (1966) described it under the name of *Hyperomyzus lactucae* L.

The main characterized feature of *H. lactucae* L. are the greatly number of secondary sensoria on the 3rd, 4th and 5th antennal segments, presence of an irregular broken area dorsally on the abdominal 3-5 segments. The present study reveals descriptions of different forms of this aphid species *N. lactucae*.

MATERIAL AND METHODS

Thirty specimens from apterae and alatae forms of the aphid species were collected from *Sonchus oleraceus* leaves during March and April 2000 at Giza and North Sinai Governorates. Specimens were kept in 70 % alcohol, macerated in potassium hydroxide solution 10 % and lactic acid, for apterae and alatae forms, respectively, cleared in phenol-chlorohydrate and mounted in Swan's medium or Canada balsam for taxonomic studies.

RESULTS

Description of *Hyperomyzus lactucae* Linnaeus

A. Apterous viviparous female, Fig. 1.

1. Colour : General colour green to yellowish green. Head generally palest, mostly white. Eyes brown. Antennae pale green, apices of segments dusky. Legs yellowish green, apices of femora and tibia dark, tarsi and claws dusky. Abdomen pale yellowish green. Cornicles and Cauda green.

2. Morphology and measurements : Body broadly, spindle in shape. Body length 2.75 mm ranging between 2.52-2.90 mm. Body width 1.38 mm, ranging between 1.23-1.49 mm. Body hairs short. Head with distinct, smooth, frontal tubercles, which are slightly rounded at their inner apices; median tubercle, well developed conspicuous. Tip of the rostrum closely reaching hind coxae. Apical rostral segment bears 6 pairs of secondary hairs, 0.126 mm long.

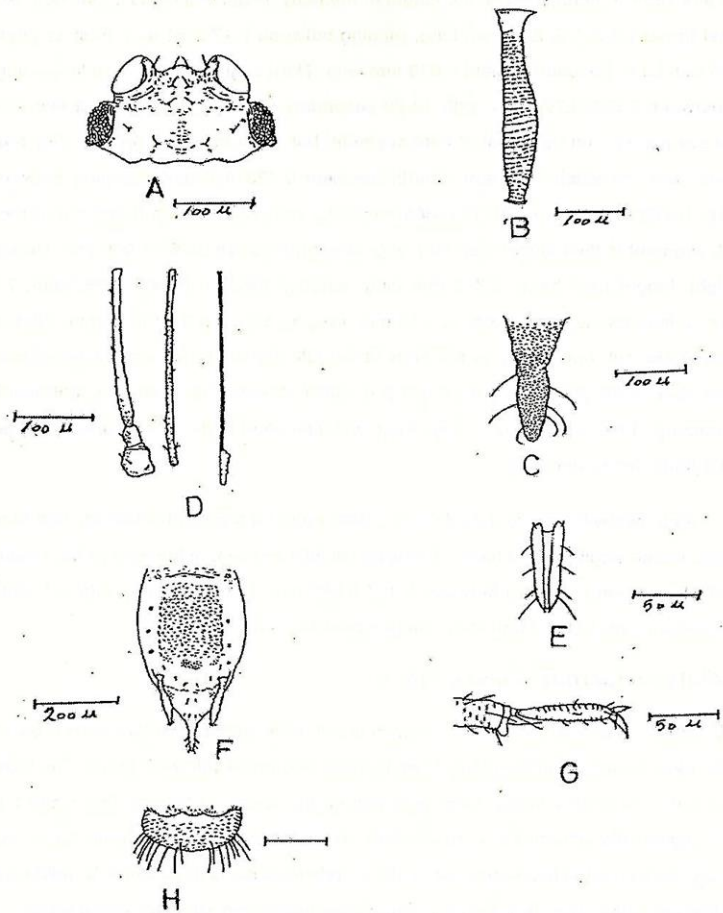


Fig. 1. Apterous viviparous female of *Nasonovia (Hypomyzus) lactucae* (L.): A- Head (dorsal view), B- Siphunculus, C- Cauda, D- Antennae, E- Apical rostral segment (ventral view), F- Abdomen (dorsal view), G- Hind tarsal segment, H- Anal plate.

Antennal tubercles moderately developed. Antennal tapering; 6 segments, antennal hairs short. Antennae equal the length of the body, distal segments imbricated. Antennal formula 6-3-4-5, 2.59 mm long, ranging between 2.17-2.84 mm. First segment 0.126 mm long. Second segment 0.078 mm long. Third segment 0.697 mm long, ranging between 0.599-0.773 mm, with 12-20 secondary sensoria, when only a few sensoria are present, on the basal of third segment, but when more are present they may extend over the whole segment. Fourth segment 0.423 mm long, ranging between 0.315- 0.473 mm. Fifth segment 0.365 mm long, ranging between 0.284-0.410 mm. Sixth segment is the longest 0.90 mm long, ranging between 0.757-1.009 mm. Unguis straight, longer than base, 0.778 mm long, ranging between 0.646- 0.883 mm, 7-8 times as long as the width which is 0.12 mm, ranging between 0.11-0.14 mm. Primary sensoria present, one placed at the apex of the fifth segment and another one placed at the apex of the sixth segment. A group of small accessory sensoria present beside the primary at the last segment. Legs long, with fine short hairs, apical tarsal segment with 5 hairs, 0.142 mm long.

Abdomen without any dorsal black patch. Hairs on tergites I-VII short, with blunt apices, eighth tergite with 4 hairs. Cornicles slightly swollen, imbricated at tip, moderate 0.516 mm long, ranging between 0.457-0.552 mm. Cauda laterally with 6-7 hairs, reticulated at apex 0.353 mm long, ranging between 0.315-0.378 mm.

B. Alate viviparous female, Fig. 2.

1. Colour : General colour pale yellowish green. Head and thorax dark shiny brown to black. Eyes brown. Antennae dark brown to black. Pronotum yellowish green. The broad band across prothorax dusky. Legs yellowish green, apices of femora, tibiae and tarsi dark. Stigma yellowish-brown, veins blackish. Abdomen yellowish- green with an sclerotic area, olive green to blackish brown. Lateral abdominal spots dark. Cornicle yellow, the swollen part paler, apex faintly dusky. Cauda pale yellow and with dark lateral edges.

2. Morphology and measurements : Body elongated with spindle-shape. Medium sized, body length 2.64 mm., ranging between 2.34-2.94 mm. Body width 1.14 mm., ranging between 0.95-1.26 mm. Body hairs short. Head with distinct, smooth, frontal tubercles, which are slightly rounded at inner apex median tubercle well developed, conspicuous. Tip of the rostrum reaching the hind coxae. Apical rostral segment

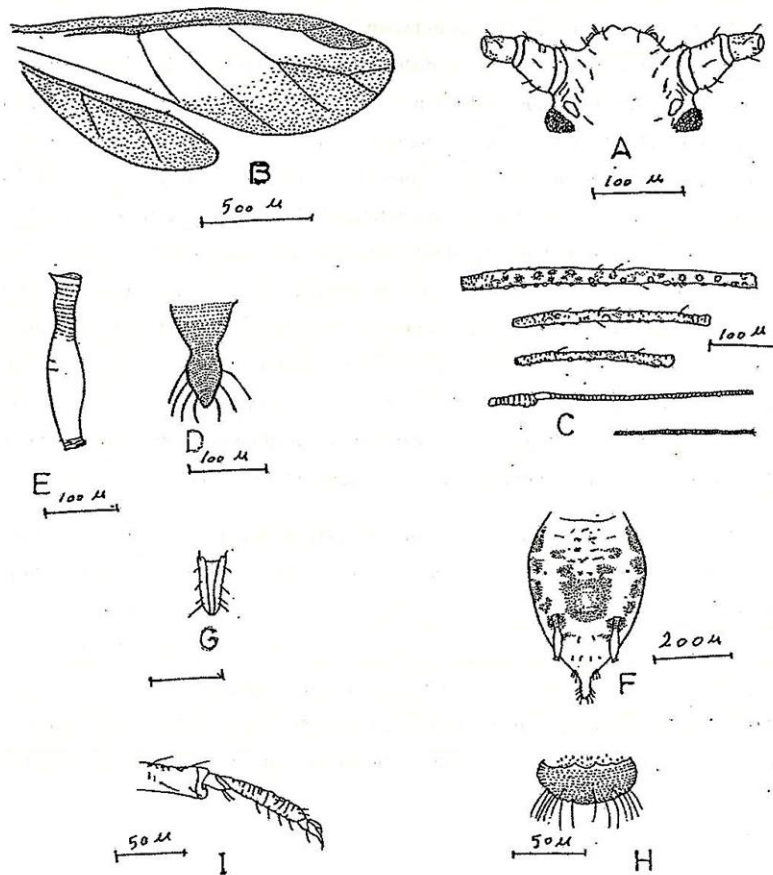


Fig. 2. Alate viviparous female of *Nasonovia* (*Hypromyzus*) *lactucae* (L.): A- Head (dorsal view), B- Fore and hind wings, C- Antennae, D- Cauda, E- Siphunculus, F- Abdomen (dorsal view), G- Apical rostral segment (ventral view), H- Anal plate, I- Hind tarsal segment.

bears 6 pairs of secondary hairs, 0.142 mm long.

Antennal tubercles very small. Antennae tapering, imbricated, 6 segmented, antennal hairs more shorter, somewhat capitate. Antennae as long as body. Antennal formula 6-3-4-5, 2.55 mm long, ranging between 2.41-2.69 mm. Sensoria are great in numbers characterized by sub-circular, distributed and different in size. First segment 0.11 mm long. Second segment 0.078 mm long. Third segment 0.7 mm long, ranging between 0.63-0.76 mm, with 37-56 secondary sensoria. Fourth segment averaged 0.4 mm in long, ranging between 0.35-0.46 mm, with 11-18 secondary sensoria. Fifth segment averaged 0.35 mm long, ranging between 0.33-0.41 mm, with 2-9 secondary sensoria. Sixth segment is the longest 0.81 mm, ranging between 0.87-0.95 mm. Unguis straight longer than the width, 0.797 mm, ranging between 0.76- 0.84 mm, 8-9 times as long as the base, which is 0.12 mm long. Primary sensoria present, one placed at the apex of the fifth segment and another one placed at the apex of the basal part of the sixth segment. A group of small accessory sensoria present beside the primary of the last segment. Legs long, with fine short hairs, apical tarsal segment with 5 hairs, 0.126 mm long. Prothoracic lateral tubercles present, a hair in front of each.

Abdomen with an irregular broken area dorsally, 3- 5 segments. Small lateral abdominal tubercles mostly present on the segments 2-4. Three pairs of three large spots and one small lateral spot, each spot imbricated with several hairs, a large dorsal patch above and between the base of cornicles. Hairs on the tergites I- VI short, with blunt apices, eight tergite with 4 hairs. Cornicles distinctly swollen, with a few apical reticulations, 0.43 mm long, ranging between 0.36-0.46 mm. Cauda slender, strongly constructed, with 3 pairs of lateral hairs, reticulated at apex, 0.27 mm long, ranging between 0.24-0.32 mm.

REFERENCES

1. Bodenheimer, F. and E. Swirski. 1957. Aphidoidea of the Middle East. Weizman Science Press, Jerusalem, p. 274.
2. Eastop, V.F. 1966. A taxonomic study of Australian Aphidoidea. Aust. Zool., 14 : 446-449.
3. Habib, A. and E.A. El-Kady. 1961. The Aphididae of Egypt (Hemiptera-Homoptera). Bull. Soc. ent. Egypte, XLV : 88-90.
4. Hille Res Lambers, D. 1949. Contributions to a monograph of the Aphididae of Europe. IV- Temmincka, 8 : 182-329.
5. Mason, W.P. 1925. A revision of the insects of the aphid genus *Amphorophora* : No. 2592. Proceedings of the National Museum, Vol. 67 Art., 20 : 19-23.
6. Theobald, F.V. 1926. The plant lice Aphididae of Great Britain. Headly Bros., Ashford, Kent, 1 : 199- 204.

وصف الإناث المجنحة وغير المجنحة لحشرة
Nasonovia (Hyperomyzus) lactucae Linnaeus

شاهيناز عطية عبد السلام ، حمدى السعيد مجاهد

معهد بحوث وقاية النباتات - مركز البحوث الزراعية - الدقى - الجيزة.

وجد نوع المن *Hyperomyzus lactucae* L. على حشيشة الجعضيض فى محافظتى الجيزة وشمال سيناء. حيث تعيش الحشرات على السطح السفلى للأوراق الأولى فى الفترة من شهر مارس إلى شهر مايو.

يمتاز هذا النوع بوجود عدد كبير من أعضاء الحس الثانوية على عقل قرن الإستشعار من الثالثة حتى الخامسة فى الأمهات الولودة المجنحة، بالإضافة إلى وجود صفائح ظهرية على السطح الظهري للبطن فى الحلقات ٣، ٤، ٥.