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**A NEW RECORD OF THE HONEYSUCKLE APHID, *Hyadaphis foeniculi*
PASSERINI, ON MEDICAL PLANTS IN NORTH SINAI
GOVERNORATE, EGYPT
BY**

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ABSTRACT

Hyadaphis foeniculi Passerini was recorded for the first time during 2005 in North Sinai Governorate, Egypt. This aphid species was identified in the Agriculture Research Service in Maryland U.S.A. This article dealt with the taxonomical characteristics of *H. foeniculi*. The aphid attacks leaves and stems of dill-seed, cow parsley, march parsley, carrot and common fennel all the year round. Heavy infestation occurred during the period from March to May. Infested leaves return curled and smallled in size. Morphological and taxonomical studies on the aphid species were carried out.

Synonyms :

Aphis xylostei De Geer, 1773

Aphis lonicerae Siebald, 1839

Hyadaphis foeniculi Passerini, 1860

Hyadaphis hyadaphis Kirkaldy, 1905

Hyadaphis foeniculi Schouteden, 1906

Hyadaphis conii Davidson, 1909

Hyadaphis conillum Theobald, 1925

Hyadaphis melliformum Hottes, 1930

INTRODUCTION

Medical plants comprise important cash crops in many countries. They usually have relatively high economic values. These important, plants are attacked by several pest species. Aphids are the most injurious insect pests infesting medical plants, reducing their yields qualitatively and quantitatively. The honeysuckle aphid, *Hyadaphis foeniculi* is recorded as one of the aphid species infesting some plants species.

Morphological and taxonomical information about the aphid species *Hyadaphis foeniculi* were mentioned by. Kirkaldy (1904) and Davidson (1909) in U.S.A. Theobald (1927) in Great Britain. Hottes (1930) in U.S.A., Hille Ris Lambers (1930) in Holland and Mimeur (1934) in Morocco. In Illinois State, U.S.A. Frederick and Theodore (1931), recorded this aphid species infesting honeysuckle plants under the name of *H melliformum* Hottes. Bodenheimer and Swirski (1957) mentioned that this species was found on Umbelliferae plants

during April and May in Israel. According to Eastop (1958) and Blackman and Eastop (1984), this aphid is one of the most injurious aphid infesting *Lonicera* sp. and Umbelliferae plants. Roberti (1958) in Puerto Rico and Volgthin (1984) in Great Lakes described the morphs of *H. foeniculi*.

MATERIALS AND METHODS

Alatae and apterous forms of *H. foeniculi* adults were collected from some medical host plants during the period March - April 2005. Specimens were preserved in absolute alcohol and then macerated in lactic acid. They were washed in distilled water and dehydrated in series of alcohol concentrations (50, 70, 85 and 96 %, ten minutes each, successively).

Specimens were cleared in fresh prepared chloralphenol and mounted on glass slides in Swan's medium and in Canada balsam for taxonomical studies. The aphid species was identified by Dr. G.L. Miller, Agriculture Research Service Maryland, U.S.A. to whom the authors express their deep thanks and gratitude.

RESULTS AND DISCUSSION

The honeysuckle aphid *Hyadaphis foeniculi* Pass. was recorded for the first time in Egypt on common fennel (*Foeniculum vulgare*), cow parsley (*Anthriscus sylvestris*) march parsley (*Apium graveolens*) and carrot (*Daucus carota*) at North Sinai Governorate, north east of Egypt during 2005. The insect attacks the leaves and the stems of these plants all the year round. It is possible to recognize *H. foeniculi* for its colour and some distinctive morphological characteristics.

On common fennel, *F. vulgare* which was mentioned as one of *H. foeniculi* hosts, Hamed (1993) mentioned that the stems and bases of the compound leaves of this plant are infested with the cabbage aphid, *Brevicoryne brassica* in Giza Governorate, Egypt.

A- Apterous viviparous female (Fig. 1):

I- Morphological characteristics:

Apterous female form is oval in shape, 2.43 mm. long and 1.53 mm. at its widest part and greyish-green in colour. Body surface covers with a light pulverulence masking. Head is narrow and dark green. Eyes are brown. Rostrum is yellowish green and extends up to the middle of the coxae. Antennal segments are dark except for the basal 2/3 of the 3rd segment which is pale.

Thorax is dark green in colour. Thoracic segments marked by sutures. Legs short and dark. Few sets of hairs are obvious on femur and tibiae.

Abdomen is pale yellow green with small lateral tubercles. Abdominal segments marked by sutures. Cornicles are dark green with a green patch at the base. Cornicles are expanded at the base and constructed at the tip, with a swelling in the apical half. Cauda is dark green with two transverse dark patches

in the front of the cauda. Cauda is large compared with that of the alate females. Anal plate is dusky.

II- Microscopic description:

Apterous body length averaged 2.43 (2.2 - 2.5) mm long, averaged 1.35 mm. Rostrum does not quite reach the mid coax. Apical rostral segment measured 0.12 mm long with 6 secondary hairs.

Antennal tubercles are moderately developed and provided with a few short hairs. Antennal formula is 6-3-5-4, 6 segmented, 1.28 (1.19 - 1.43) mm long. The first segment is wide and as long as the second, 0.37 mm long and ranged between 0.36 and 0.42 mm. Measurements of the remaining 4 segments (3rd - 6th) are 0.18, 0.18, 0.15 and 0.42 mm long, respectively. Unguis about three folds as long as basal part. Basal part is 0.09 mm long and while the unguis is 0.33 (0.29 - 0.35) mm long. Antennae without secondary rhinaria. Primary rhinaria present. One circular at the apex of the fifth segment, the other one is placed at apex of the basal part of the sixth segment. A group of small accessory rhinaria are present beside the primary ones of the sixth segment.

Tarsus two segmented, terminal segment is longer than basal. It is about 0.09 mm long with 4 secondary hairs and two claws.

Cornicle of the apterous form is slightly longer than those found in alate forms. It is 0.35 mm long. Cauda is 0.35 mm long, 6-7 hairs, 2 pairs laterally and 2 or 3 hairs on dorsal surface near the tip. Anal plate is provided with numerous hairs.

B- Alate viviparous female (Fig. 2) :

I- Morphological characteristics :

Alate form is oval, measures 1.98 mm. long and 0.88 mm. at its widest part and dark green in colour. The body dusted with fine white wax. Head is broad and black. Vertex is convex. Eyes are red. Rostrum is yellowish green. Antennae are dark brownish green. Segments 3-6 are imbricated. Third segment is tuberculate.

Thorax is black. Legs are short smoky, with olive femura and tibial points. A set of few hairs are obvious on femur and tibiae. Wings are broad and rounded at the tip and venation is normal. Insertions and cubitus are greenish. Stigma is grey.

Abdomen is flat, broad and green mottled with a dark green and with a darker patch around the base of each siphunculi. Alatae are without dorsal abdominal pigmentation but the lateral sclerites are dark. Abdomen is with small lateral tubercles. Cornicles are yellowish green, clavate and tapering are with convex sides. Cauda is green, acuminate and swollen at the base. Anal plate is dusky.

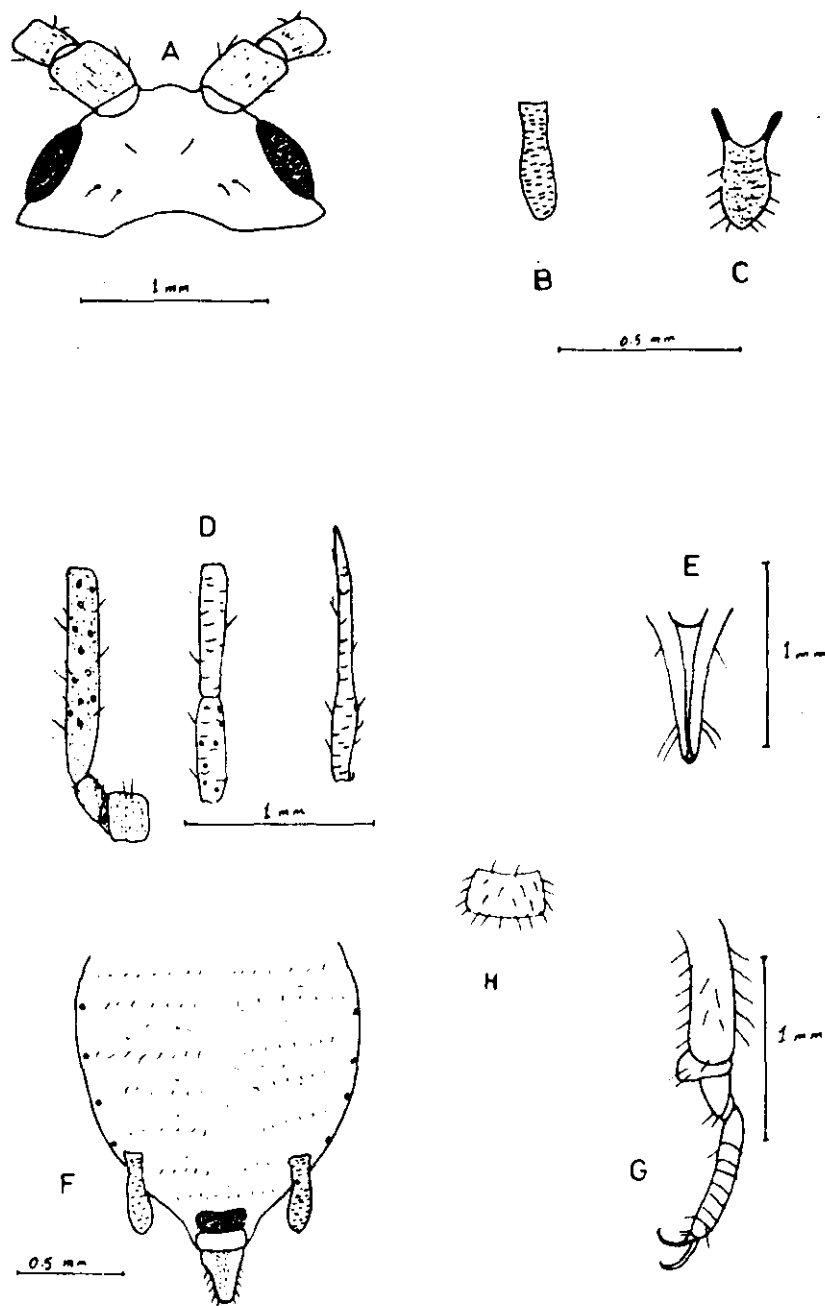


Fig. 1.- Apterous viviparous female of *Hydaphis foeniculi* (Pass.). A- Head (dorsal view), B- Siphunculus, C- Cauda, D- Antennae, E- Apical rostral segment (ventral view), F- Abdomen (dorsal view), G- Hind tarsal segment, H- Anal plate.

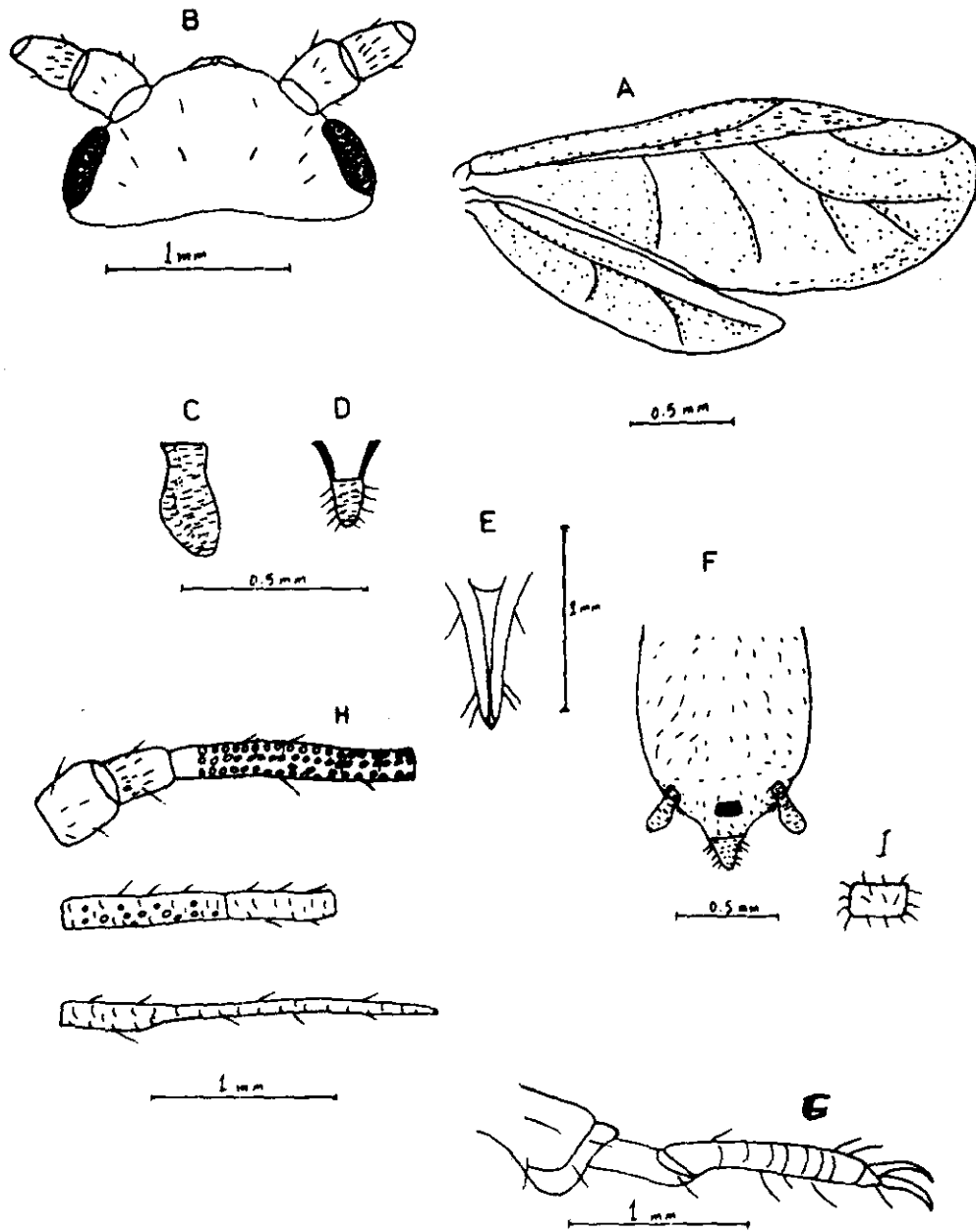


Fig. 2.- Alate viviparous female of *Hyadaphis foeniculi* (Pass.). A- Fore and hind wings, B- Head (dorsal view), C- Siphunculus, D- Cauda, E- Apical rostral segment (ventral view), F- Abdomen (dorsal view), G- Hind tarsal segment, H- Antennae, I- Anal plate.

II- Microscopic description:

Alate body length averaged 1.98 (1.86 – 2.12) mm long and 0.88 (0.83 – 1.01) mm. in width. Rostrum does not quite reach the second coxae. Apical rostral segment is 0.1 mm long and with 6 secondary hairs.

Antennal tubercle is moderately developed are provided with few short hairs. Antennal formula is 6- 3-5-4 and six segmented. Antennae are shorter than body, measuring 1.35 (1.19 - 1.46) mm long. First segment is broad and as long as the second and is 0.07 mm long. Third segment is 0.62 mm long and ranged between 0.33 and 0.53. Fourth segment is 0.18 mm long and ranged between 0.13 and 0.20 mm. Fifth segment is 0.13 mm long and ranged between 0.12 and 0.15 mm. Sixth segment 0.48 mm long and ranged between 0.45 and 0.55 mm. Unguis is about three folds as long as the basal part. Basal part is 0.09 mm long and unguis is 0.39 (0.35 - 0.45) mm long.

Antennae with secondary rhinaria. The third and the fourth antennal segments consist of 23-41 and 7-13 secondary rhinaria, respectively. Primary rhinaria are present, one circular at the apex of the fifth segment and second one is placed at the apex of the basal part of the sixth segment. A group of small accessory rhinaria is present beside the primary of the sixth segment.

Tarsus is two segments. Terminal segment is longer than the basal one, 0.09 mm long and with 4 secondary hairs and two claws.

Cornicle is 0.25 mm. long. Cauda is 0.25 mm long, with 6-7 hairs and 2 pairs laterally and 2 or 3 hairs on dorsal surface near the tip. Anal plate is provided with few hairs.

REFERENCES

- Blackman, R.L. and Eastop, V.F. (1984): *Aphids on the World's Crops : An Identification and Information Guide*, 281 p.
- Bodenheimer, F.S. and Swirski, E. (1957): *Aphidoidea of the Middle East*. Weizman Science Press, Jerusalem, 258 p.
- Davidson, W.M. (1909): Notes of Aphididae collected in the vicinity Standard University. *J. Econ. Entomol.*, vol. 4 : 559-562.
- Eastop, V.F. (1958): A study of the Aphididae (Homoptera) of East of Africa. 41 p.
- Frederick, C.H. and Theodore, H.F. (1931): *The plant lice or Aphidiidae of Illinois*. 238 p.
- Hamed, A. El-Dayem (1993): *Studies on the aphid fauna of medical and aromatic plants in Egypt*. M.Sc., Fac. of Agric., Al-Azhar University.
- Hille Ris Lambers, D. (1930): Contribution to the knowledge of the Aphididae. *U- Tijdschr. Ent.*, 54 : 169-183.
- Hottes, F.C. (1930): *Aphis homonyms*. *Proc. Biol. Soc. Wash.*, 43 : 174-184.
- Kirkaldy, G.W. (1904): Biological and nomenclature notes on the Hemiptera. No. *Entomologist*, 37 : 279-283.

- Mimeur, J.M. (1934): Gave a brief account of *Hyadaphis foeniculi* from Morocco. Mem. Soc. nat Moroc, 40 : 18- 19.
- Roberti, D. (1958): Descried and illustrated the viviparae of *H. foeniculi*. Bull. Lab. Ent. Portrico, 16 . 12- 15.
- Theobald, F.V. (1927): The plant lice or Aphididae of Great Britain. Vol. 2, pp. 294-296.
- Volgthin, D. (1984): Described and illustrated the morphs of *Hyadaphis foeniculi*. Great Lakes Entomologist, 17 : 55- 67.

تسجيل نوع جديد من حشرات المنّ *Hyadaphis foeniculi* Passerini على النباتات الطبية في شمال سيناء، مصر

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تم تسجيل نوع المنّ *Hyadaphis foeniculi* Passerini لأول مرة فى سنة ٢٠٠٥ فى محافظة شمال سيناء بمصر. وجد أن الحشرة تصيب سيقان وأعناق الأوراق والسطح السفلى لأوراق نباتات الثبث، البقدونس، الكرفس، الجزر طالما وجدت هذه النباتات، تشتد الإصابة بهذا النوع من المنّ خلال الفترة من شهر مارس إلى شهر مايو، وتؤدى الإصابة إلى صفر حجم الأوراق بالإضافة إلى تجمعها. وقد تم التأكد من اسم هذا النوع من المنّ بولاية ميريلاند بالولايات المتحدة الأمريكية. ويمكن تمييز النوع بلونه وصفاته المورفولوجية. وقد تم إجراء الدراسات المورفولوجية والتقسيمية والقياسية لهذا النوع من حشرات المنّ.