

***Greenidea ficicola* (Takahashi) (Hemiptera: Sternorrhyncha: Aphididae) A Newly Recorded Aphid in Egypt**

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ABSTRACT

Greenidea ficicola aphid was recorded in this work for the first time in *Ficus* trees in April 2022 in Alexandria, Egypt. This species was mainly found to infest ornamental *Ficus* trees which are widely used in landscapes. *G. ficicola* is pear-shaped, yellowish-brown to dark brown. Nymphs are yellow with brown siphunculi. *G. ficicola* is characterized by a weakly-developed antennal tubercle, broadly rounded cauda with apical papilla, and conspicuous setae arising from dark patches. Alate with elongated body dark abdomen supported with longer siphunculi. Despite the distribution of this species in Asia, Nearctic, Neotropic, West Palaearctic, Afrotropical and Australian origins, it is recorded here for the first time from Egypt. Apart from the wilt caused through the plant juice suction via the infestations of this pest, several aphid-borne viruses are being transmitted to the *Ficus* plants, leading to tremendous economic loss.

Keywords: *Greenidea ficicola*; *Ficus*; Egypt; First record.

INTRODUCTION

Aphids are considered among the most serious insect pests of different economic plants in Egypt as well as all over the world. They suck the plant sap and secrete honeydew, which causes the development of sooty molds which reduce photosynthesis and may cause stopping the growth of the plant. In addition to transmission of viral diseases from infected to healthy plants (Heie, 1980; Darwish, 1983; Blackman and Eastop, 1984; Sanz *et al.*, 2001; Tawfeek, 2001; Ali *et al.* 2006). In Egypt Habib and El-Kady (1961) listed 80 species of aphids. Due to the economic importance of aphids, several studies have been conducted in Egypt (e.g. Attia *et al.* (1986), Darwish (1983 & 1989), El-Heneidy and Adly (2012), Tabikha and Adss (2021).

The genus *Greenidea* Schouteden (Aphididae: Greenideinae: Greenideini) is represented by about 45 species. The species of this genus attack shoots and young leaves of *Ficus* (Moraceae), sometimes infested plants belonging to families, Betulaceae, Juglandaceae, and a few members of families such as Myrtaceae and Theaceae (Heie, 1980; Ghosh, 1987; Blackman & Eastop, 1994, 2000 and Pérez Hidalgo *et al.*, 2009).

G. ficicola was detected for the first time in Europe in 2004 in Italy (Barbagallo *et al.*, 2005), in Brazil (Souze-Silva *et al.* 2005), in Malta (Mifsud 2008) in Spain (Perez Hidalgo *et al.* 2009) and in Hawaii (Walter and Garcia 2012). In Africa, *G. ficicola* was noticed in Burundi (Remaudière *et al.* 1992), in Tunisia (Ben Halima, 2009) and Northern Sahara of Algeria (Bakroune *et al.* 2021).

By revising CABI (Centre for Agriculture and Biosciences International) and EPPO (European

Plant Protection Organization) Global Database and the head of Department of Piercing – Sucking insects in Plant Protection Institute, Ministry of Agriculture Dokki, Giza, Egypt, they confirmed that neither the genus nor species were known to exist in Egypt. Therefore, *G. ficicola* is first recorded in Egypt in this work.

MATERIALS AND METHODS

Small branches carrying colonies of aphids were picked out from infested *Ficus* trees cultivated in landscapes closed to Faculty of Engineering, El-Shatby, Alexandria (31.20593,29.92486) in April 2022. The collected specimens were kept in polyethylene bags and transferred to the laboratory for examination. The specimens were transferred from host plants to small labeled glass tubes provided with 70% ethyl alcohol using moistened brush when needed. The preparation methods used were according to Darwish (1983) as follows:

The specimens were transferred to glass tube containing 10% caustic potash (KOH) and boil for 5–10 minutes in water bath. After that the specimens were rinsed in 90% ethyl alcohol several times to remove any trace of KOH. Clearing specimens were performed in clearing fluid consisting of Chloral hydrate 47.05% (10 gm.), Phenol 47.05% (80 gm.) and 50% glucose syrup (80 gm) for 20–30 minute using warm water bath. Specimens were transferred to watch glass then mounted on clean slides in Hoyer's solution. The mounted labeled slides were dried in an oven at 50°C for one to two weeks.

Identification of this insect based on microscopic morphological characters that can only be studied at high magnification (Blackman and Estop 1984).

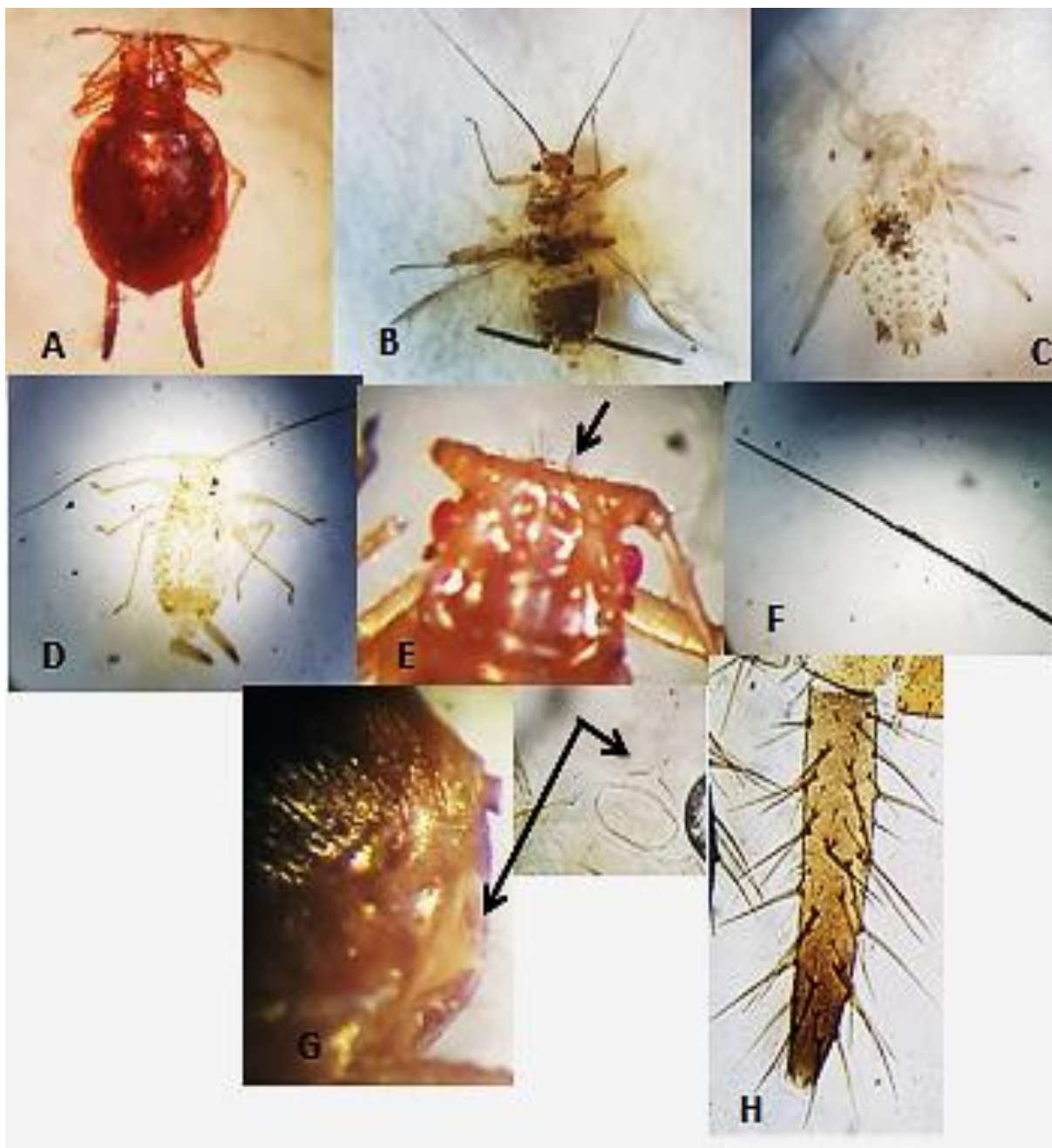


Figure 1: *Greenidea ficicola* A: Adult apterae, B: Alate adult, C: nymph of alate individual, D: nymph of winged individual, E: antennal tubercle, F: terminal antennal segments, G: cauda, H: hairy siphunculi. Arrows show cauda

RESULTS AND DISCUSSION

Common name:

Fig aphid

Synonyms:

Greenidea ficicola Takahashi

Greenidea neoficicola Ghosh

Field character:

This species was mainly found to infest ornamental *Ficus* trees which are widely used in tree planting programs especially along road sides. Apteræ *G. ficicola* body is pear-shaped (Fig. 1 A), yellowish-brown to dark brown. Alatae (Fig. 1 B) have an elongate body with dark brown abdomen. Nymphs are yellow with brown siphunculi (Figs 1 C & D).

Recognition character:

Apterae are small, body length is 1.6 mm. Their antennae are six segmented gradually darker towards the apex. The antennal terminal segment (Fig. 1F) is 0.8 mm. in length, the basal part is 0.2 mm. while the terminal process is 0.58 mm. The antennal tubercle weakly developed (Fig. 1E). Siphunculi or cornicles (Fig. 1H) are very long about one third of bod length, have the base pale brown and get darker towards the apices with numerous long hairs as well as numerous minute setae on its apical parts and the reticulations covering most of its length. The cauda (Fig., 1G) broadly rounded with an apical papilla. Dorsum of body covered by conspicuous setae arising from different shape dark patches. Alatae have an elongated body with dark-brown abdomen and longer siphunculi, and more slender than apterae (Fig. 1 B) about two thirds of body length.

World distribution:

Distribution of *G. ficicola* in India, Pakistan, Bangladesh, Nepal, eastern Russia, China, Taiwan, Japan, Philippines, Indonesia, Malaysia and Australia. Recently, this aphid was also reported from the Afrotropical Region (Burundi) (Remaudière *et al.*, 1992), from the Nearctic Region (Florida) (Halbert, 2004), from the Neotropics (Brasil) (Sousa-Silva *et al.*, 2005) and from the West Palaearctic (Italy) (Barbagallo *et al.*, 2005). It could have reached the Maltese Islands either through imports of ornamental *Ficus* spp. or via wind currents which facilitate transport of winged forms. (Barbagallo *et al.* 2005). Also, Walter and Garcia (2012) recorded it as new aphid in Hawaii.

Hosts:

Ficus benjamina, *Ficus hookeri*, and *Psidium guajava*

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الملخص العربي

Greenidea ficicola (Takahashi) (Hemiptera: Sternorrhyncha:

Aphididae) نوع من المن مسجل لأول مرة في مصر

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تم في هذا البحث تسجيل النوع *Greenidea ficicola* (Takahashi) من المن لأول مرة على أشجار الفيكس في أبريل ٢٠٢٢ في الإسكندرية، مصر. هذا النوع يصيب نباتات وأشجار الفيكس بشكل أساسي والتي تستخدم على نطاق واسع في تزيين المدن والحدائق وتزرع على طول جوانب الطرق. الافراد غير المجنحة كمشوية الشكل، بني مصفر إلى بني غامق. الحوريات صفراء اللون والـ siphunculi بني. الـ cauda عريضة ودائرية وبها حلمة قمية، مع وجود شعيرات تبرز من مناطق داكنة. الافراد المجنحة مطاولة داكنة اللون والـ sphinunculi طويل ورفيع. وعلى الرغم من توزيع هذا النوع في آسيا، Neotropic, West Palaearctic, Afrotropical, وأستراليا، فقد تم تسجيله هنا لأول مرة من مصر. وبصرف النظر عن الذبول الناجم عن امتصاص عصارة النبات فان العديد من انواع المن تنتقل العديد من الفيروسات مما يؤدي إلى خسائر اقتصادية هائلة.

الكلمات المفتاحية: *Greenidea ficicola*؛ نباتات الفيكس، تسجيل لأول مرة في مصر