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The Planthopper family Achilidae (Hemiptera: Auchenorrhyncha: Fulgoroidea) in the United Arab Emirates

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ABSTRACT

This is first review of the planthopper family Achilidae of the United Arab Emirates. Two achilid species are reported from the country – *Akotropis fulgens* Linnavuori, 1973 and *Deferunda incompta* Dlabola, 1961. The finding of *D. incompta* in the UAE is the most western point of the genus *Deferunda* Distant, 1912 distribution and the first record of this genus from the Arabian Peninsula. External view photos of *A. fulgens* and *D. incompta* are provided and the latter is illustrated for the first time.

Key words: *Akotropis*, Arabian Peninsula, *Deferunda*, new record, Plectoderini

Цикадовые семейства Achilidae (Hemiptera: Auchenorrhyncha: Fulgoroidea) в Объединенных Арабских Эмиратах

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РЕЗЮМЕ

Это первый обзор цикадовых семейства Achilidae Объединенных Арабских Эмиратов. Два вида ахилид указаны для страны – *Akotropis fulgens* Linnavuori, 1973 и *Deferunda incompta* Dlabola, 1961. Находка *D. incompta* в ОАЭ является самой западной точкой ареала рода *Deferunda* Distant, 1912 и первым указанием этого рода с Аравийского полуострова. Даны фотографии внешнего вида *A. fulgens* и *D. incompta*, причем, последний вид проиллюстрирован впервые.

Ключевые слова: *Akotropis*, Аравийский полуостров, *Deferunda*, новое указание, Plectoderini

INTRODUCTION

The Auchenorrhyncha fauna of the United Arab Emirates was intensively studied during the last 10 years thanks to the project “Arthropod fauna of the UAE” undertaken by Dr. Antonios van Harten (Almada, Portugal) and the recent initiative by

Dr. Vladimir M. Korshunov (Fujairah, UAE) focused on biodiversity of Fujairah Emirate. In frame of these projects general data on the planthopper families Caliscelidae, Issidae, Meenoplidae, Kinnaridae, Tropiduchidae, and Nogodinidae in the UAE were published (Wilson and Turner 2010; Wilson 2010a, 2010b; Gnezdilov and Wilson 2011a, 2011b;

Gnezdilov 2017a, 2017b). The achilid fauna of UAE was shortly discussed by Wilson and Turner (2010) with a record of one species of the genus *Akotropis* Matsumura, 1914, later identified as *A. fulgens* Linnavuori, 1973 by Asche (2015). Below I am giving locality information for *A. fulgens* and the first record of *Deferunda incompta* Dlabola, 1961 from the country both collected at light in Wadi Wurayah National Park in Fujairah in late March 2017. Thus this is the first review of the planthopper family Achilidae of the United Arab Emirates with the first record of the genus *Deferunda* Distant, 1912 from the Arabian Peninsula.

MATERIAL AND METHODS

Head terminology following Emeljanov (1995). The photos were taken using a Leica MZ9.5 microscope and a Leica DFC 490 camera. Images were produced using Helicon Focus V. 6.7.1 and Adobe Photoshop software. The specimens mentioned below are deposited in the collection of the Zoological Institute of the Russian Academy of Sciences in Saint Petersburg, Russia.

RESULTS

Family Achilidae Stål, 1866

Subfamily Achilinae Stål, 1866

Tribe Plectoderini Fennah, 1950

Genus *Deferunda* Distant, 1912

Type species: *Deferunda stigmatica* Distant, 1912, by original designation.

Subgenus *Tugaia* Dlabola, 1961

Type species: *Deferunda incompta* Dlabola, 1961, by original designation.

Deferunda incompta Dlabola, 1961

(Figs 1–4)

Material examined. TADZHIKISTAN: 1 male, 2 females, Tigrovaya Balka, sweeping *Elaeagnus*, 11 August 1962, Pripisnova leg. UNITED ARAB EMIRATES, Fujairah: 1 female, Wadi Wurayah National Park, N 25°23'46.5'' E 56°16'10.2'', 170 m, at light, 26 March 2017; 1 female, same locality, at light, 29 March 2017, all leg. V. M. Gnezdilov.

Note. The species was described by Dlabola (1961) after a long series of specimens from Tigrovaya Balka Reserve in Tadzhikistan and by erecting a separate subgenus, *Tugaia* Dlabola, 1961, for it. The specimens from the type locality listed above were compared with the females from the UAE and no significant differences in external structures or coloration were found, except that the specimens from Tadzhikistan are lighter, which is apparently due to long conservation in the collection. Also, Dlabola (1961) in his original description mentioned the length of males – 4.5 mm and females – 4.7 mm, while the male listed above is 3.7 mm and the females are 4.0–4.2 mm. Otherwise this species is well distinguished from other species of the genus by small size, light metope without dark marking, and forewings brown to dark brown, with white dots [see the key by Chen and He (2010) and figs 1–4 here].

Further examination of any males available from the UAE will give the final confirmation of the identification made here.

Genus *Akotropis* Matsumura, 1914

Type species: *Akotropis fumata* Matsumura, 1914, by original designation.

Akotropis fulgens Linnavuori, 1973

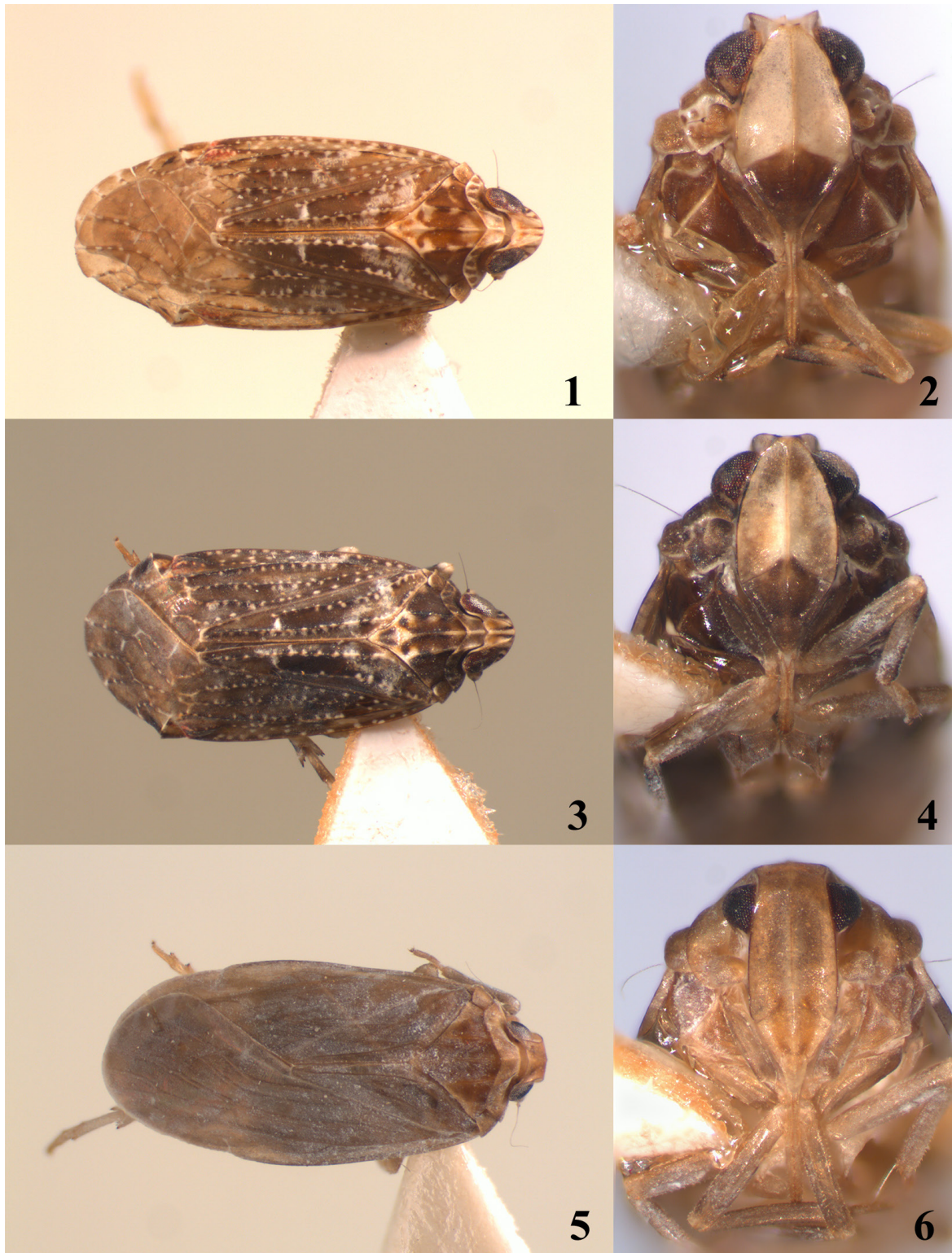
(Figs 5, 6)

Material examined. UNITED ARAB EMIRATES, Fujairah: 3 females, Wadi Wurayah National Park, N 25°23'46.5'' E 56°16'10.2'', 170 m, 26–29 March 2017; 1 female, 8 km NW Khorfakkan, Wadi Wurayah National Park, 165 m, N 25°23.366' E 56°18.356', 31 March 2017; 2 females, near Dadna, N 25°24.018' E 56°17.475', 27 March 2017, all leg. V.M. Gnezdilov.

DISCUSSION

Taking into consideration the two records mentioned above the family Achilidae is represented in the UAE only by the tribe Plectoderini.

The genus *Deferunda* Distant, 1912 currently comprises 13 species mostly known from the Oriental Region (southern China including Hainan and Taiwan Islands, the Philippines, India and Bangladesh), with some species from northern Australia, Japan, Korea, and Tadzhikistan (Chen and He 2010).



Figs 1–6. Plectoderini, females. 1–4 – *Deferunda incompta* Dlabola, 1961 (1, 2 – Tadzhikistan, Tigrovaya Balka; 3, 4 – UAE, Fujairah), 5–6 – *Akotropis fulgens* Linnavuori, 1973, UAE, Fujairah. 1, 3, 5 – dorsal view; 2, 4, 6 – face.

D. incompta until now was known only from the original description (Dlabola 1961). The finding of this species in the UAE is the most western point of *Deferunda* distribution as well as the second record of the genus from the Western Palaearctic region *sensu* Emeljanov (1974) (see also the map by Gnezdilov et al. 2014) and the first record of the genus from the Arabian Peninsula.

The genus *Akotropis* Matsumura, 1914 comprises 7 species also mostly known from the Oriental Region (Vietnam, Japan, Taiwan, Korea, Singapore, Indonesia, and Sri-Lanka), with two species recorded from northeastern Africa, Arabian Peninsula, and the Eastern Mediterranean (Asche 2015). *A. fulgens* was described by Linnavuori (1973) after females from southern Yemen and Somalia. No males of this species have yet been found and described. *A. fulgens* well differs from *A. quercicola* Linnavuori, 1962, living on *Quercus* spp. and widely distributed in the Eastern Mediterranean (Asche 2015), by transverse coryphe and brown general coloration (Linnavuori 1973) (Figs 5, 6).

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REFERENCES

- Asche M. 2015.** The Western Palaearctic Achilidae (Hemiptera, Fulgoromorpha: Fulgoroidea) – a review with description of five new species from the Mediterranean. *Nova Supplementa Entomologica*, **25**: 1–135.
- Chen Xiang-Sheng and He Ting-Ting. 2010.** Two new species of genus *Deferunda* Distant (Hemiptera: Fulgoromorpha: Achilidae) from southwest China. *Zootaxa*, **2335**: 59–68. <https://doi.org/10.11646/zootaxa.2335.1.6>
- Dlabola J. 1961.** Die Zikaden von Zentralasien, Dagestan und Transkaukasien (Homopt. Auchenorrhyncha). *Acta Entomologica Musei Nationalis Pragae*, **34**: 241–358.
- Emeljanov A.F. 1974.** Proposals on the classification and nomenclature of areals. *Entomologicheskoe Obozrenie*, **53**: 497–522. [In Russian with English summary]. English translation published in *Entomological Review* (1974), **53**(3): 11–26.
- Emeljanov A.F. 1995.** On the problem of classification and phylogeny of the family Delphacidae (Homoptera, Cicadina) taking into consideration larval characters. *Entomologicheskoe obozrenie*, **74**: 780–794. [In Russian with English summary]. English translation published in *Entomological Review* (1995), **75**(9): 134–150.
- Gnezdilov V.M. 2017a.** A new species of the genus *Phyllyella* China (Hemiptera, Auchenorrhyncha, Fulgoroidea: Nogodinidae) from the United Arab Emirates. *Entomologicheskoe Obozrenie*, **96**: 332–338. [In Russian with English summary]. English translation published in *Entomological Review* (2017), **97**: 493–501. <https://doi.org/10.1134/s001387381704011x>
- Gnezdilov V.M. 2017b.** A new species of the genus *Ade-nissus* (Hemiptera, Fulgoroidea, Caliscelidae) from United Arab Emirates. *Proceedings of the Zoological Institute RAS*, **321**: 320–325.
- Gnezdilov V. M. and Wilson M. R. 2011a.** Order Hemiptera, family Issidae. In: A. van Harten (Ed.). Arthropod Fauna of the UAE. Vol. 4. Dar Al Ummah, Abu Dhabi: 108–113.
- Gnezdilov V. M. and Wilson M. R. 2011b.** Order Hemiptera, family Caliscelidae. In: A. van Harten (Ed.). Arthropod Fauna of the UAE. Vol. 4. Dar Al Ummah, Abu Dhabi: 114–122.
- Gnezdilov V.M., Holzinger W.E. and Wilson M.R. 2014.** The Western Palaearctic Issidae (Hemiptera, Fulgoroidea): an illustrated checklist and key to genera and subgenera. *Proceedings of the Zoological Institute RAS*, **318** (Supplement 1): 1-124. http://www.zin.ru/journals/trudyzin/doc/vol_318_s1/TZ_318_1_Supplement_Gnezdilov.pdf
- Linnavuori R. E. 1973.** Hemiptera of the Sudan, with remarks on some species of the adjacent countries 2. Homoptera auchenorrhyncha: Cicadidae, Cercopidae, Machaerotidae, Membracidae and Fulgoroidea. (Zoological contribution from the Finnish expeditions to the Sudan no. 33). *Notulae Entomologicae*, **53**: 65–137.
- Wilson M. R. 2010a.** Order Hemiptera, families Meenoplidae and Kinnaridae. In: A. van Harten (Ed.). Arthropod Fauna of the UAE. Vol. 3. Dar Al Ummah, Abu Dhabi: 126–131.
- Wilson M. R. 2010b.** Order Hemiptera, family Tropiduchidae. In: A. van Harten (Ed.). Arthropod Fauna of the UAE. Vol. 3. Dar Al Ummah, Abu Dhabi: 132–134.
- Wilson M. R. and Turner J. 2010.** Order Hemiptera. Key to families of Auchenorrhyncha from the Arabian Peninsula. In: A. van Harten (Ed.). Arthropod Fauna of the UAE. Vol. 3. Dar Al Ummah, Abu Dhabi: 113–125.