

Order Hemiptera, family Issidae

Vladimir M. Gnezdilov & Michael R. Wilson

INTRODUCTION

The planthopper family Issidae is a worldwide distributed group with 973 extant species in 155 genera arranged in 4 tribes (Gnezdilov, 2003a, 2009, 2010). Only the tribe Issini with 3 genera and 5 species (including the species described below), is known from the Arabian Peninsula. The genus *Caepovultus* Gnezdilov & Wilson, 2007, was erected for a single species from Oman (Gnezdilov & Wilson, 2007). A further species, described here, was found during fieldwork in 2010. *Caepovultus* may be treated as endemic genus of the Peninsula. The genus *Caepovultus* is closely related to the genus *Quadriwa* Ghauri, 1965, which is mostly distributed in Iran. Both species of *Caepovultus* inhabit mountain biotopes (Plate 1). Two other issid genera known from the Arabian Peninsula, *Kovacsiana* Synave, 1956, and *Kivupterum* Dlabola, 1985, are also recorded from Africa.

MATERIALS AND METHODS

Morphological terminology follows Emeljanov (1995) and Gnezdilov (2003b). The genital segments of the examined specimen were macerated in 10% KOH and figured in glycerine jelly using compound light microscope Mikmed-1. Photographs of the specimen were made using Leica MZ95 with Leica video camera DFC290, images are produced using the software Helicon Focus 4.61 and Photoshop. The single specimen was found by vacuum sampling using a modified petrol leaf blower/sucker.

The type specimen of the new species is deposited in the Hemiptera collection of the National Museum of Wales (NMWC, Cardiff, UK).

Key to the issid genera of the Arabian Peninsula

- 1 Bifurcation of radial vein on fore wings starts almost from the basal cell, median simple, cubitus anterior bifurcate *Caepovultus* Gnezdilov & Wilson, 2007
- Bifurcation of radial vein on fore wings starts from the common stem on a distance from the basal cell, median tri-hexafurcate, cubitus anterior simple **2**
- 2 Sublateral carinae of metope are joined below its upper margin. Fore wings without hypocostal plate. Hind wings reaching genital segments *Kovacsiana* Synave, 1956
- Sublateral carinae of metope are joined at its upper margin. Fore wings with hypocostal plate. Hind wings rudimentary *Kivupterum* Dlabola, 1985

List of issid species known from the Arabian Peninsula

Caepovultus deemingi Gnezdilov & Wilson, 2007: Oman (Gnezdilov & Wilson, 2007).

Caepovultus nov. spec.: United Arab Emirates.

Kovacsiana abyssinica Synave, 1956: Ethiopia, Yemen (Synave, 1956; Linnavuori, 1970).

Kovacsiana khamis (Dlabola, 1979): Saudi Arabia (Dlabola, 1979).

Kivupterum saudicum (Dlabola, 1979): Saudi Arabia (Dlabola, 1979).



Plate 1. View of Jebel Jibir, type locality of *Caepovultus vegrandis* nov. spec. (Photograph © V.M. Gnezdilov)

SYSTEMATIC ACCOUNT

Family **Issidae** Spinola, 1839

Subfamily **Issinae** Spinola, 1839

Tribe **Issini** Spinola, 1839

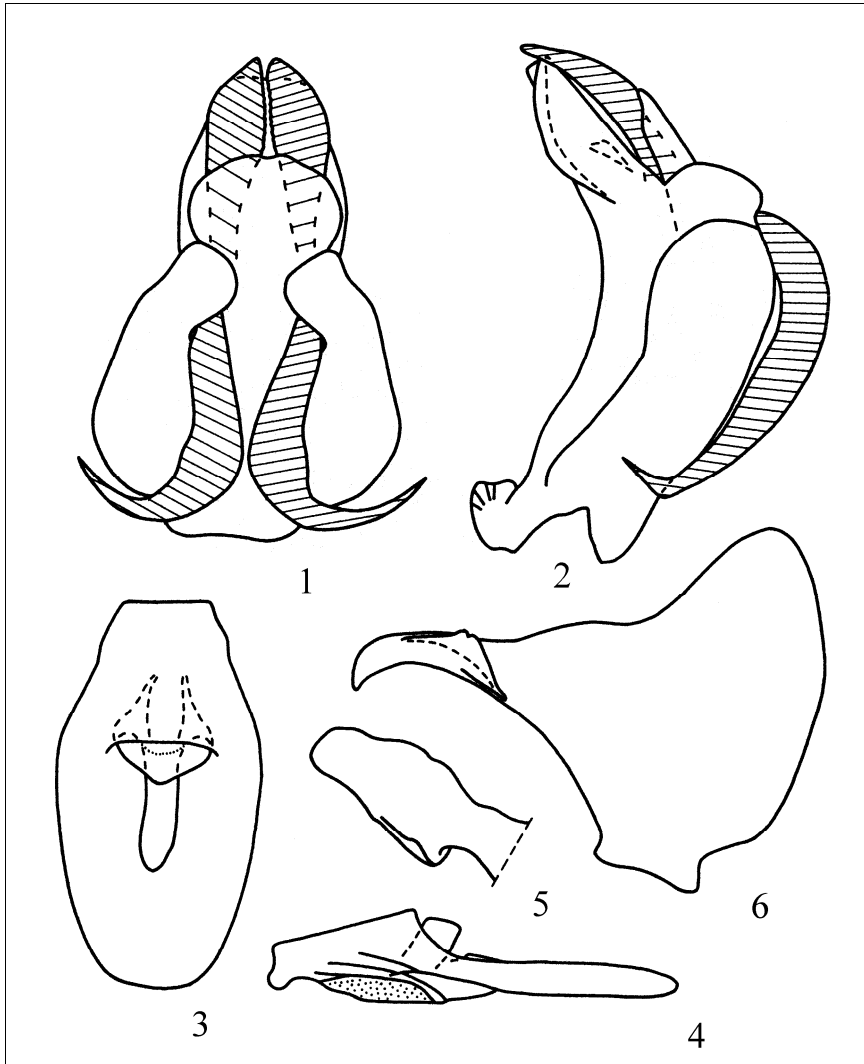
Genus *Caepovultus* Gnezdilov & Wilson, 2007

Caepovultus vegrandis Gnezdilov & Wilson **nov. spec.**

Plates 2–4, Figures 1–6

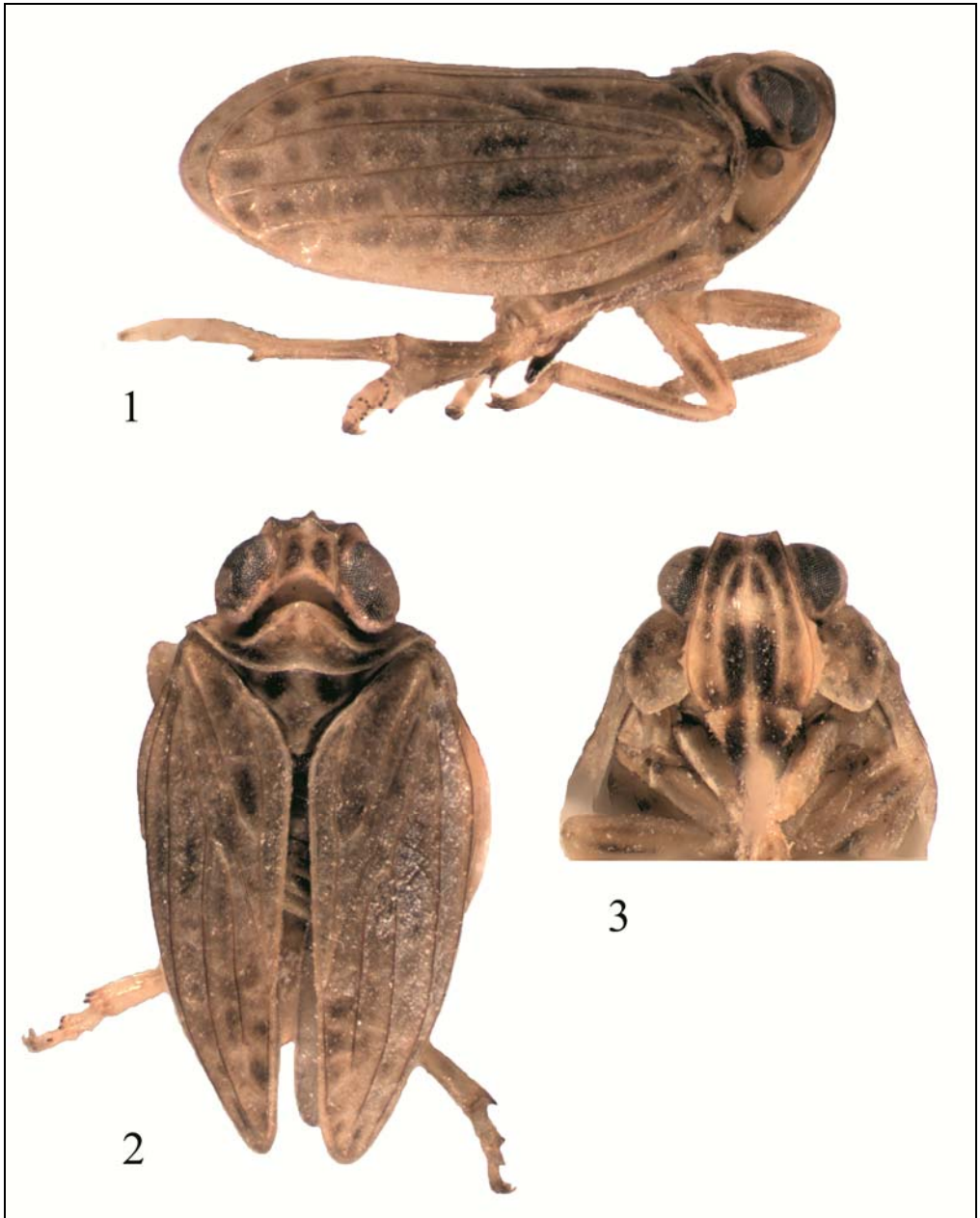
Specimens examined: Holotype: ♂, labelled: “U.A.E.: Jebel Jibir, 1272 m, 25°38’225’’N 56°06’885’’E, 08.iv.2010, leg. M. Wilson”.

Description: Metope elongate, weakly enlarged above clypeus, with distinct median carina reaching from its upper margin through postclypeus and sublateral carinae joined below its upper margin and not reaching metopoclypeal suture (Plate 4). Median and sublateral carinae of metope are joined at acute angle below its upper margin. Pedicel cylindrical, with sensory organs. Rostrum reaching hind coxae. Coryphe almost square, with keel-shaped lateral margins, anterior margin acutely angulate, posterior margin angularly concave (Plate 3).



Figures 1–6. *Caepovultus vegrandis* nov. spec. Male genitalia. 1: Penis, ventral view; 2: Penis, lateral view; 3: Anal tube, dorsal view; 4: Anal tube, lateral view; 5: Capitulum of style, dorsal view; 6: Style, lateral view.

Pronotum with large median tubercule below acutely angulate, keel-shaped anterior margin, posterior margin weakly concave. Mesonotum with weak lateral carinae. Fore wings nearly oval, without hypocoastal plate (Plate 2). Longitudinal veins of fore wings keel-shaped, transverse veins are distinct only in distal part of the wings. Radius bifurcate (bifurcation starts almost from the basal cell), mediana simple, cubitus anterior bifurcate (R 2 M 1 CuA 2). Clavus long, 0.65 as long as whole wing. Hind wings as long as fore wings. Hind tibia with single lateral spine distally. First metatarsomere with 4 intermediate spines.



Plates 2–4. *Caepovultus vegrandis* nov. spec., habitus. 2: Lateral view; 3: Dorsal view; 4: Frontal view.

General coloration light brown yellowish. Metope dark brown in its upper part excluding light carinae, with two dark brown longitudinal stripes between sublateral carinae in its lower part. Postclypeus dark brown excluding light median carina and two large light spots latero-basally. Anteclypeus dark brown. Rostrum with black apex. Coryphe with two large oval dark

brown patches besides of median line. Paradiscal fields of pronotum, apices of third metatarsomeres, and claws dark brown. Mesonotum with dark brown apical angles. Fore wings with sparse dark brown spots. Hind wings gray. Femora and tibiae with dark brown stripes and spots. Spines of legs black. Abdominal sternites and tergites dark brown excluding light brown yellowish hind margins.

Male genitalia (Figs 1–6). Pygofer with weakly convex hind margin. Anal tube elongate, narrow basally, weakly truncate apically (Fig. 3). Anal column long, 0.3 as long as anal tube, narrow. Phallobase weakly curved (in lateral view) (Fig. 2), wide basally (in dorsal view) (Fig. 1). Dorso-lateral phallobase lobes narrowing apically, fused dorsally, each with two semicircular processes – one subapical and one above ventral aedeagal hooks (Fig. 2). Ventral phallobase lobe enlarged above the aedeagal hooks, with apical notch (Fig. 1). Apical aedeagal processes long, wide, narrowing apically, its apices are visible above apical phallobase margin (Fig. 2). Ventral aedeagal hooks long, wide, acute apically. Style with concave hind margin (Fig. 6). Capitulum of style on short neck, long, rounded apically (in dorsal view) (Fig. 5), lateral tooth wide.

Total length: 3.1 mm.

Etymology: The specific name means ‘diminutive’, ‘small’, ‘tiny’ in Latin, referring to the smaller size of the new species when compared with *C. deemingi*.

Key to the species of *Caepovultus*

- 1 General colouration light brown yellowish. Metope weakly enlarged above clypeus. Hind tibia with single lateral spine. Each dorso-lateral phallobase lobe with subapical semicircular process. Ventral phallobase lobe enlarged above the aedeagal hooks
..... *C. vegrandis* Gnezdilov & Wilson nov. spec.
- General colouration brown. Metope narrow apically and distinctly enlarged above clypeus. Hind tibia with 2 lateral spines. Dorso-lateral phallobase lobes without such processes. Ventral phallobase lobe not enlarged above the aedeagal hooks
..... *C. deemingi* Gnezdilov & Wilson, 2007

ACKNOWLEDGEMENTS

We are pleased to thank Mr. Antonius van Harten for his help and for allowing us to visit the UAE, and Mr. Khalid Mahmood for his assistance with fieldwork.

REFERENCES

- Dlabola, J. (1979): Insects of Saudi Arabia. Homoptera. *Fauna of Saudi Arabia*, 1: 115–139.
- 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 (4): 780–794. English translation published in *Entomological Review*, 1995, 75 (9): 134–150.
- Gnezdilov, V.M. (2003a): A new tribe of the family Issidae (Homoptera, Cicadina) with comments on the family as a whole. *Zoosystematica Rossica*, 11 (2): 305–309.
- Gnezdilov, V.M. (2003b): Review of the family Issidae (Homoptera, Cicadina) of the European fauna, with notes on the structure of ovipositor in planthoppers. *Chteniya pamyati N.A. Kholodkovskogo (Meetings in memory of N.A. Cholodkovsky)*, *St. Petersburg*, 56 (1): 1–145. (In Russian with English summary).

- Gnezdilov, V.M. (2009): Revisionary notes on some tropical Issidae and Nogodinidae (Hemiptera: Fulgoroidea). *Acta Entomologica Musei Nationalis Pragae*, 49 (1): 75–92.
- Gnezdilov, V.M. (2010): Composition and distribution of the family Issidae (Hemiptera, Fulgoroidea). *13th International Auchenorrhyncha congress, Vaison-la-Romaine, France 28 June – 2 July 2010. Abstracts: talks and posters*: 87–88.
- Gnezdilov, V.M. & M.R. Wilson (2007): A new genus and new species of the family Issidae (Hemiptera: Fulgoroidea) from Oman. *Acta Entomologica Musei Nationalis Pragae*, 47: 109–113.
- Linnavuori, R. (1970): On the *Hysteropterum* species of NE Africa (Hom., Issidae). *Annales entomologici Fennici*, 36 (4): 213–217.
- Synave, H. (1956): Contribution a l'étude des Issidae africains (Homoptera–Fulgoroidea). *Bulletin de l'Institut Royal des Sciences Naturelles de Belgique*, 32 (57): 1–22.

Authors' addresses:

Dr. V.M. Gnezdilov, Zoological Institute of the Russian Academy of Sciences, Universitetskaya nab. 1, St. Petersburg 199034, Russia; e-mail: vmgnezdilov@mail.ru, vgnezdilov@zin.ru

Dr. M.R. Wilson, National Museum of Wales, Cathays Park, Cardiff CF10 3NP, UK; e-mail: Michael.Wilson@museumwales.ac.uk