Articulata, Bd. II, Folge 10, März 1987, Würzburg, ISSN 0171-4090

The male of Esfandiaria obesa POPOV (Orthoptera, Acrididae, Teratodinae) and the validity of the genus Esfandiaria POPOV

by
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Abstract
The validity of the genus *Esfandiaria* POPOV, 1951 is confirmed by examination of the previously unknown male of *E. obesa* POPOV from SW Iran, which is described and figured and compared with the related genus *Acrostegastes* KARSCH.

The monotypic genus *Esfandiaria* was erected by POPOV (1951) for his species *E. obesa* described from a single female specimen collected at Yassudj, near Shiraz, SW Iran in 1949. No further material was known until Dr. A. A. SOLTANI of the Plant Pests and Deseases Research Institute, Teheran sent two more females and the first three known males of this species to G.B.POPOV who kindly passed them to me for description and comparison with the very closely-related genus *Acrostegastes* KARSCH which is currently being revised (RITSCHIE, in prep.). It is of interest that Dr. SOLTANI found the specimens causing foliar damage to Pistachio trees (*Pistacia vera*).

The previously unknown male of *E. obesa* is described below and measurements of all the known specimens of both sexes are provided. Characters which provide sufficient grounds for maintaining *Esfandiaria* as a genus distinct from *Acrostegastes* are discussed.

Esfandiaria obesa POPOV, 1951.
Material examined: Holotype ♀, Iran: Fars, Yassudj, near Shiraz, 28.VII. 1949 (MIRZAYAN) [British Museum (Nat. Hist.)]. 3 ♂♂, 2 ♀♀,
Iran: Dehdasht (30°47'N 50°34'E), c. 750 m, 50 kms NE of Behbehan, VIII. 1982 (SOLTANI) [2 ♂♂, 1 ♀, in Plant Pests and Diseases Research Institute, Teheran and 1 ♂, 1 ♀ in British Museum (Nat. Hist.)].

Description of male

♂. Large species (total length 26-32 mm). Integument rugulose and pitted. Antennae 24-segmented, about as long as head and pronotum together. Head large, strongly protruding forwards with eyes separated posteriorly from pronotal fore margin by more than their own width; eyes large, much deeper than width of ocular interspace; vertex roughened; frons protruding between eyes and with raised lateral margins, strongly divergent between antennae. Face rugose and punctate; facial carinae diverging from eyes to

clypeus. Pronotum long, smoothly rounded dorso-laterally, with weak median carina, almost straight in profile and finely dissected by transverse sulci. Prosternal tubercle circular in cross-section, narrow, straight, acutely conical. Mesosternal interspace about as long as wide, mesosternal lobes obtusely rounded. Metasternal interspace closed. Tympanum large. Tegmina reaching to posterior margin of tergite 5, widened about one third from base and tapering to a rounded point. Hind wing with characteristic teratodine stridulatory mechanism of transverse veinlets between Cu2 and 1A, but poorly developed and with weak spination. No discernible enlargement of cells between veins Cu1 and Cu2 or between 1A and 2A. Hind tibia with 10 outer and 11 inner spines; external apical spine absent. Apical tarsal segment about as long as 3 basal segments together; arolium very large, about as long as claws. Abdominal tergite 9 with paired medial triangular projections forming a weak furcula. Cercus acutely conical with irregularly rounded dorso-basal process (Fig. 1). Supra-anal plate triangular with crenate margins; subgenital plate simple, boat-shaped.

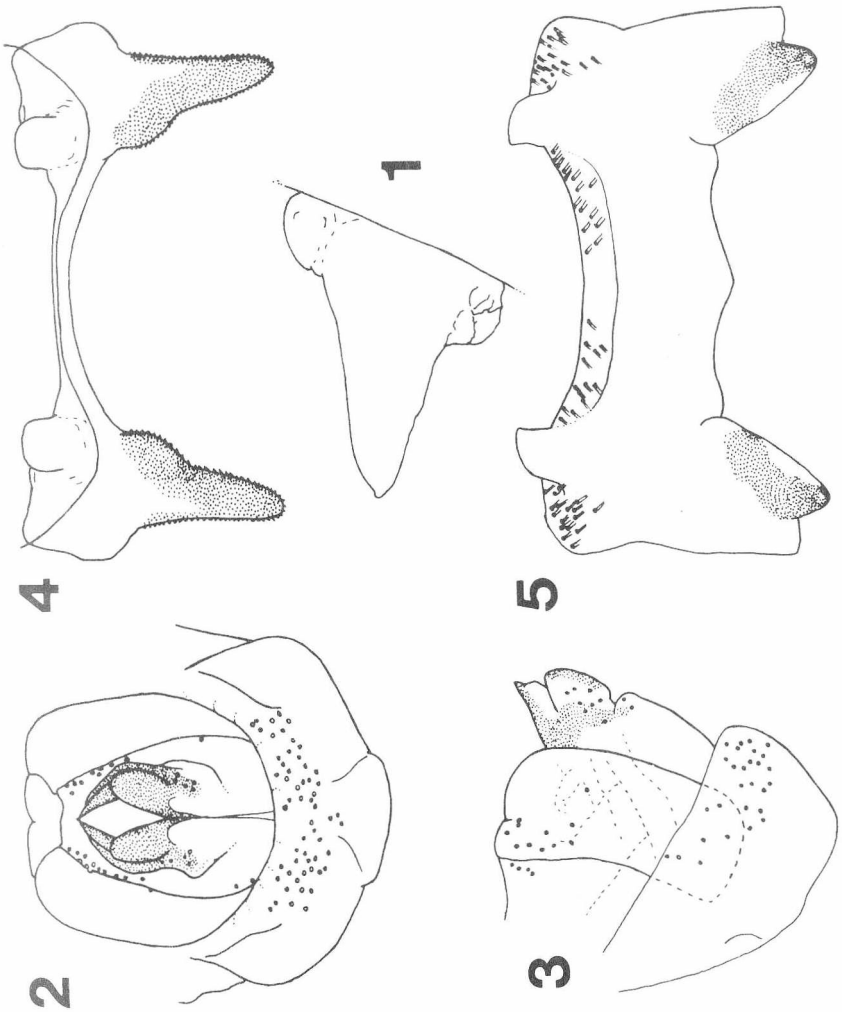
Measurements of all known specimens, males and females, are shown in Table 1, including data from the holotype specimens (POPOV, 1951).

Genitalia (Figs 2-5). Phallic complex of typical form for the subfamily, with characteristic trilobed aedeagus (Fig. 3), but rather small in relation to body size by comparison with *Acrostegastes*. Epiphallus differing from any known species of *Acrostegastes* by the acutely-pointed lophi (Fig. 4).

General colouration light olivaceous green but probably bright green in life. Eyes brown with 7 distinct or indistinct dark vertical stripes. Base of tegmen and upper antero-lateral portion of mesothorax shiny black, partly concealed by pronotum hind margin. Tibial spines pale with black tips.

	Head width	Eye depth	Inter-ocular distance	Pronotum length	Tegmen length	Hind femur length	Hind femur depth	Total body length
♀								
	7.3	4.3	2.45	13.45	14.2	18.95	5.0	40.3
	7.05	4.0	2.4	13.3	13.35	17.95	5.05	35.8
Type	----	----	----	13.5	11.5	18.5	----	35.0
♂								
	6.0	3.6	1.2	8.2	11.15	15.6	4.4	29.6
	5.8	3.45	1.25	7.9	12.15	15.2	4.3	32.2
	6.05	3.75	1.2	8.35	11.35	16.6	4.3	26.1

Table 1: Measurements of all known specimens of both sexes of *Esfandiaria obesa* POPOV, 1951



Figs 1-5:
Esfandiaria obesa POPOV, 1951, male: 1. right cercus, lateral view; 2. phallic complex, posterior view; 3. phallic complex, lateral view; 4. epiphallus, anterior view; 5. epiphallus, dorsal view.

Discussion

In the light of the information now available it appears justifiable to retain *Esfandiaria* as a valid genus differentiated from *Acrostegastes* by the following characters:

1. Pronotum in profile not strongly arcuate dorsally (strongly arcuate in all *Acrostegastes*).

2. Dorsum of pronotum with anterior margin weakly excurved and hind margin forming an obtuse angle (anterior margin strongly even angularly excurved and hind margin acutangular in *Acrostegastes*).

3. Absence of enlarged hind wing cells forming a resonator for stridulation (always present in *Acrostegastes*).

4. Epiphallus with strongly-pointed lophi (broadly rounded in all *Acrostegastes*).

In the rather small aedeagal valves *E. obesa* somewhat resembles *A. glaber* KARSCH, as also in the large eyes and presence of black pigment at the base of the tegmen. However in all other respects the species are well separated. *Esfandiaria* appears to be close to a putative ancestral condition for the subfamily *Teratodinae*, with a rather cyrtacanthacridine general facies and a suite of characters as listed above which appear in each case to represent the plesiomorphic condition relative to that found in *Acrostegastes*, as in the lack to specialisation for sound production (inflated pronotum, alar speculum) and the rather simple male genitalia.

Acknowledgements

I am grateful to Dr. A. A. SOLTANI and Mr. G.B. POPOV for the loan of material of *Esfandiaria obesa*.

References

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