

**Contribution to the Knowledge of the Heptageniidae of Greece,  
with a Description of *Ecdyonurus moreae* sp.n. (Ephemeroptera)<sup>(1)</sup>**

by

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C. BELFIORE: Contribution to the Knowledge of the Heptageniidae of Greece, with a Description of *Ecdyonurus moreae* sp.n. (Ephemeroptera). Aquatic Insects 8 (1986), No. 4, pp. 191-195.

*Ecdyonurus moreae* sp.n. is described from Peloponnese, Southern Greece. Diagnostic characters are: stout and rounded penis lobes, oblique stripes on the sides of abdomen, and abdominal ganglia pigmented. 12 further taxa from Greece are listed and briefly discussed: 3 species are new for Greece.

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Puthz (1980), in a recent review of Greek Ephemeroptera, listed the following species of Heptageniidae: *Epeorus sylvicola* (Pictet), *E.yougoslavicus* Samal, *Ecdyonurus dispar* (Curds), *E.forcipula* (Pictet), *E.helveticus* (Eaton) (earlier cited by Ulmer, 1929), *E.insignis* (Eaton) (?), *E.krueperi* (Stein), *E.zelleri* Kimmins, *Rhithrogena diaphana* Navas and *R.semicolorata* (Curtis). Some doubt is about the record of *Ecdyonurus helveticus*: this species may have been confused with *E.carpathicus vitoshensis* Jacob and Braasch, recently described from Bulgaria (Jacob and Braasch, 1984). Braasch (1983 a, b; 1984; in press, a) described and added some more taxa to the list of Greek Heptageniidae: *Iron znojkoii insularis*, *Ecdyonurus aurantiacus androsianus*, *E.graecus*, *E.malickyi* and *E.aspoecki*. For what concerns the records of other authors, *Ecdyonurus epeorides* Demoulin, 1955, synonymized with *E.zelleri* by Kimmins (1958), has to be regarded as a valid species (Jacob and Braasch, in press).

The material listed in the present paper was collected in May, 1982. Some more specimens come from the collection of Dr. H. Malicky, Lunz, Austria: I am very grateful to him. D. Braasch (Potsdam) assisted in identification of a new species which we name jointly below.

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## LIST OF LOCALITIES

The localities where the material (Belfiore leg.) was collected are the following:

GREECE. Peloponnese (A): A1 - Greka, left tributary of River Alfios, 13.V.1982; A2 - Andritsaena, River Alfios, 14.V.1982; A3 Poliana, 17.V.1982; A4 - Tripotami, 18.V.1982; A5 - Kalavrita, River Vouraikos, 18.V.1982. Euboea (B): B1 - Pissonas, 20.V.1982. Parnassus (C): C1 - Polidrosos, 22.V. 1982. Pindus (D): D1 - Mesokhora, 23.V. 1982; D2 - Pili, 23.V. 1982; D3 - Krania, 24.V. 1982; D4 - Soulopoulon, River Skolitsas, 25.V. 1982.

## LIST OF SPECIES

**1. Epeorus sylvicola** (Pictet, 1865)

2♂♂ 4 nymphs (A3); 3♀♀, 4 nymphs (D3); 1♂, 12 nymphs: Euboea, S from Komiton, 380 m (24°32'/38°04'), 6.VI.1979, H. Malicky leg.

Recorded from the whole of Europe and from North Africa. This species could likely transgrede to Western Turkey.

**2. Iron yougoslavicus** (Samal, 1935)

1 nymph (A3); 1 nymph (D2).

Recorded from Italy (Braasch, 1980), Yugoslavia, Bulgaria and Greece.

**3. Iron znojkoii** Tshernova, 1938

2♂♂ 1♀: Samos, beneath Manolates, 160 m (26°49'/37°47'), 27-29.V. 1979, light trap, H. Malicky leg.; 1♂, 2♀♀, 1♂ and 1♀ subim.: Samos Ag. Konstantinos, 10 m (26°49'/37°48'), 27-29.V. 1979, H. Malicky leg.; 1♂: Samos, E from Pirgos, 300m (26°49'/37°43'), 35.V.1979, light trap, H. Malicky leg.

The Samos population of this species can be referred to the subspecific form *insularis* Braasch, 1983, known only from this island.

**4. Rhithrogena braaschi** Jacob, 1976

1♂: Karia, E from Olympus, 26.V. 1974, H. Malicky leg.

Described from Bulgaria (Jacob, 1976), it was collected also in Turkey by Kazanci (Braasch vidit). New for Greece.

**5. Rhithrogena** sp., group *diaphana*

1♀, 2 nymphs: Samos, 25-29.V.1979, H. Malicky leg.; 58 nymphs: W Menina, E Igoumenitsa (21°23'/39°31'), River Kalamas, 10.VI.1977, H. Malicky leg.

This species could be *R. bulgarica* Braasch (Braasch, in press (b)). A revision of the balcanic species of the *diaphana* group, however, is needed.

**6. Rhithrogena** sp., group *hybrida*

5 nymphs: Ag. Dionisos Monastery, at Olympus, 900 m (22°25'/40°06'), 13.IX.1972, H. Malicky leg.

All mountain regions of Europe seems to have their proper representatives of this group, as we learned from recent studies of Sowa (1984). Therefore, further investigations are needed for the specific identification of these specimens.

**7. Ecdyonurus aurantiacus** (Burmeister, 1839)

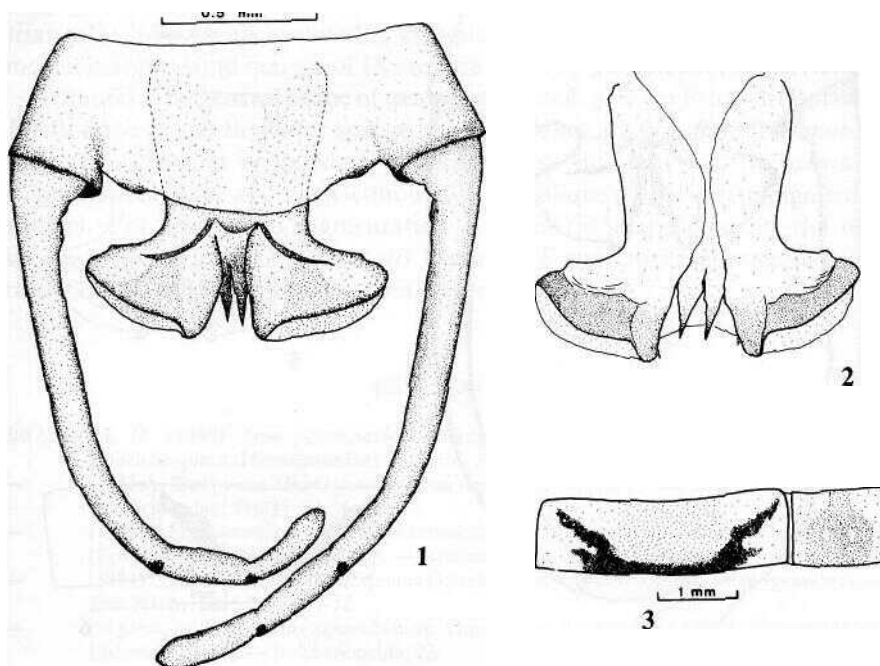
18 nymphs: River Kalamas, 10.VI.1977, H. Malicky leg.

This identification has to be regarded with care, only nymphs being available.

**8. Ecdyonurus** sp., group *affinis*

6 nymphs: Samos, Mitilini, 80 m (26°55'/37°44'), 25.V. 1979, H. Malicky leg.

Very probably, these specimens belong to *E.trimaculatus* Ikononov, 1963, the nymph of which is unknown.



Figs. 1-3: *Ecdyonurus macani*. Genital apparatus, ventral view (1); penis lobes, dorsal view (2); markings on 4th tergite and sternite (3).

**9. *Ecdyonurus dispar*** (Curtis, 1834)

4 nymphs (D4).

Apparently spread all over the Balkans.

**10. *Ecdyonurus insignis*** (Eaton, 1870)

7 nymphs (B1); 1 nymph (D4); 1 ♀: Euboea, Ano Steni, 550 m (38°35'/23°51'), 12.X.1980, H. Malicky leg.

New for Greece.

**11. *Ecdyonurus krueperi*** (Stein, 1863)

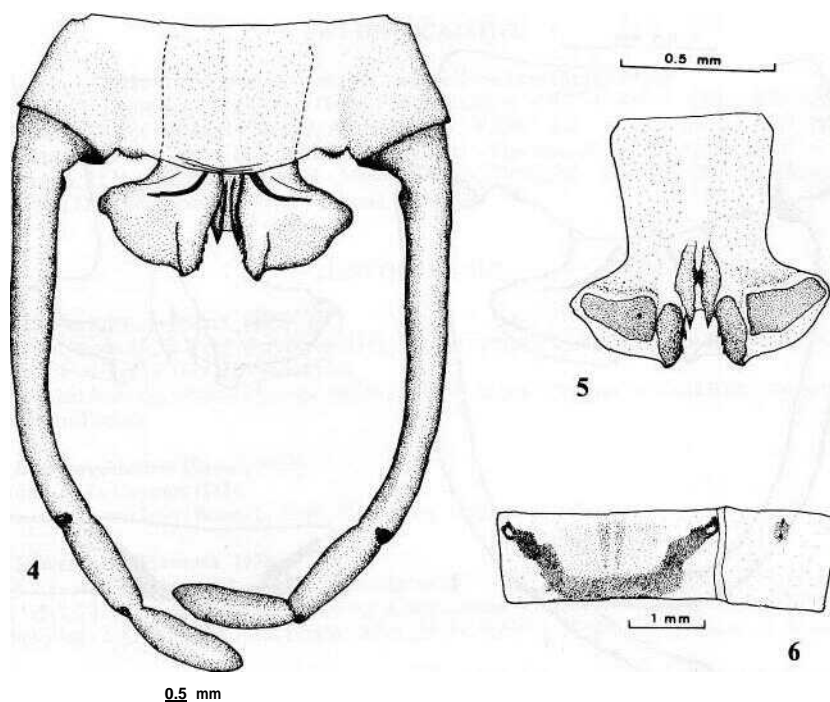
1 ♂ (A1); 4 nymphs (?) (A2); 5 nymphs (?) (A4); 4 ♂♂, 4 nymphs (B1).

This species, described from Greece, is recorded also from Albania (*E.krueperi albanicus* Puthz, 1980)

**12. *Ecdyonurus macani*** Thomas & Sowa, 1970

4 ♂♂, 7 nymphs (C1); 5 ♂♂ (D3).

The variation range of this species, described from Western Europe, is not yet well known. Figs. 1-3 show some features of the Greek specimens of *E.macani*. New for Greece.



Figs. 4-6: *Ecdyonurus moreae*. Genital apparatus, ventral view (4); penis lobes, dorsal view (5); markings on 4th tergite and sternite (6).

13. ***Ecdyonurus moreae*** Belfiore et Braasch, sp.n. (Figs. 4-6)

1 ♂ (holotype), 3 ♂♂ (paratypes), Greece, Peloponnese, Kalavrita, River Vouraikos, 18.V.1982 (A5). Holotype in coll. Zool. Ist. Univ. Roma, paratypes in colls Belfiore and Braasch.

Description. Male imago. Body length 13-15 mm; forewing 15-17 mm; cerci 40 mm. General colour reddish brown. Eyes pinkish grey, laterally with four alternating light and dark narrow stripes. Thorax brown, with reddish and pale spots on the sides. Wings transparent, proximally very faintly tinged with yellowish; distal half of costal area of fore wings yellowish, opaque. Fore legs brown. First segment of tarsus about 1/2 of second. Mid and hind legs yellowish, joints and tarsi brown. Abdomen dorsally with reddish brown markings, ventrally yellowish brown. Tergites II-VII with a median large reddish stripe on which are two paramedian narrower and darker stripes; on the hind margin of tergites there is a dark reddish brown band, prolonged to front along sides (fig. 6). Tergites IX-X lighter, with reddish spots. Sternites II-VI light brown, with ganglia more or less pigmented with violet (fig. 6). Sometimes a light reddish polygonal spot on sternites is visible. Sternites VII-IX with evident reddish markings. Cerci brown.

Genitalia (figs. 4-5). Penis laterally expanded into two short and stout triangular lobes, with rounded apex; apical sclerite with some big spines on medial margin. Hind margin of IX sternite with two paramedian projections.

Affinities. The general shape of penis resembles *E. graecus* Braasch (Braasch, 1984): however, in the latter species the penis lobes are pointed, in *E. moreae* they are somewhat rounded. *E. graecus* is also different for the brownish stigmatic area of the abdomen without distinct oblique stripes and unpigmented ganglia. For abdominal pigmentation and general shape of penis the new species is also related to *E. torrentis* Kimmins, *E. macani* Thomas & Sowa, *E. ruffii* Grandi and *E. aurantiacus* (Burmeister).

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