

# The Mayfly Fauna (Insecta; Ephemeroptera) of the Arabian Peninsula (Part 3)

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Abstract: A new species, *Choroterpes (Euthraulius) pacis* n. sp., is described from material collected in the Sultanate of Oman. This species shows no affinities with *Ch. (Eu.) arabica* Sartori & Gillies, 1990, described from Saudi Arabia and Yemen, although it probably also has an Afrotropical origin. Characters used to distinguish the winged stages of the two subgenera *Choroterpes* and *Euthraulius* are unsatisfactory, and no reliable features have been found in the material examined.

إضافة جديدة للمرة الثالثة عن مجموعة ذباب النوار من الجزيرة العربية  
(صنف الحشرات: رتبة Ephemeroptera)

*Choroterpes (Euthraulius) pacis*  
نوع جديد من عمان (العائلة Leptophlebiidae)

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خلاصة: تم وصف نوع جديد هو *Choroterpes (Euthraulius) pacis* من نماذج جمعت من سلطنة عمان. لا يظهر هذا النوع أى علاقة مع النوع *Ch. (Eu.) arabica* Sartori & Gillies, 1990 الذى سبق وصفه من المملكة العربية السعودية واليمن على الرغم من احتمال أن يكون أصله استوائى افريقى أيضا. ان الصفات التى تميز المراحل المجنحة لتحت الجنسين غير كافية، ولم يتم الحصول على أى صفة مميزة للنماذج التى تم فحصها.

## INTRODUCTION

In two previous works (THOMAS & SARTORI 1989; SARTORI & GILLIES 1990), we have recorded six mayfly species from the Arabian Peninsula, two of which were new to science. The areas investigated were mainly along the western coast of Saudi Arabia and in Yemen. Thanks to the collaboration of Prof. W. Büttiker, we have now had the opportunity of examining a small collection from the Sultanate of Oman (BÜTTIKER & BÜTTIKER 1988). Among this material were specimens of an undescribed species belonging to the genus *Choroterpes* Eaton, 1881, subgenus *Euthraulius* Barnard, 1932.

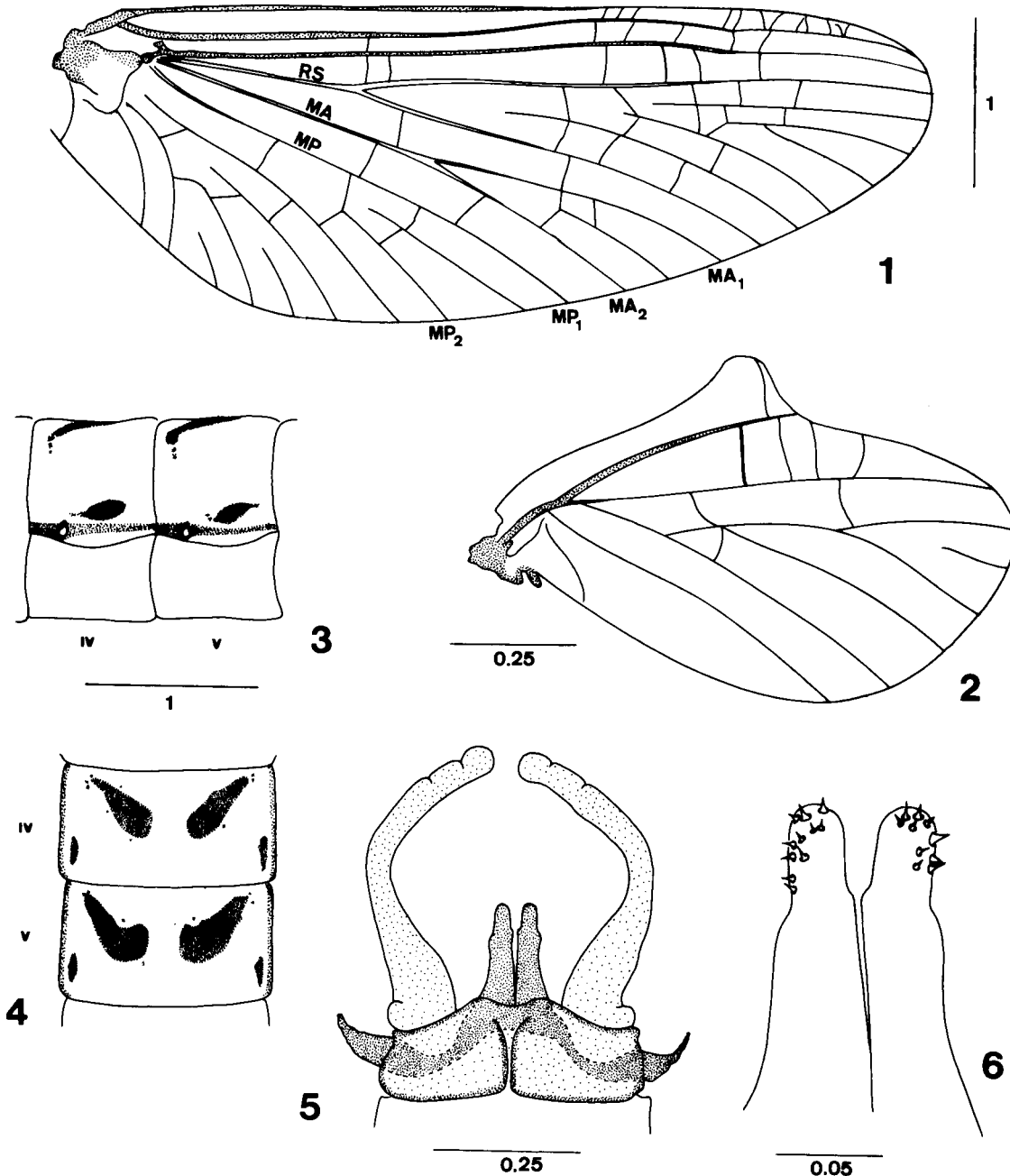
*Choroterpes (Euthraulius) pacis* n. sp.

Holotype: 1 ♂, Oman, Sayq, 22°30'N 59°07'E, 19–22. III. 1986. – Paratype: 1 ♂, same data as holotype; both W. Büttiker. Holotype in the Natural History Museum in Basle, paratype (genitalia, fore and hind wings on a microscopic preparation) in the Musée de Zoologie in Lausanne.

Description of the male imago: Eyes medium to dark brown. Thoracic sclerites medium brown. Fore legs with femora yellowish and with a distinct longitudinal dark spot at the middle of the upper surface. Tibiae and tarsi whitish, the joints light brown. Mid and hind legs the same, but femora paler than on the forelegs.

Fore wings entirely translucent and colourless, except for the milky pterostigmatic area. Veins C, Sc, and R1 light brown, the others translucent. Pterostigma with 8 to 11 simple cross-veins. Vein  $R_5$  forked closer to wing-base than attachment of vein  $MP_2$  to  $MP_1$ . Vein MA forked at about one half the distance from base to margin. Vein MP asymmetrical (fig. 1). Hind wings with a well-developed rounded costal process, distinctly asymmetrical, subcostal vein reaching costa immediately behind the process (fig. 2).

Abdominal terga yellowish-brown, slightly translucent, each of them with four dark spots; two elongated ones in antero-median part (fig. 4), and two others, smaller, in a postero-lateral position (fig. 3). Sterna I-VIII paler than terga, without any maculation. Sternum IX medium brown.



Figs 1-6: *Choroterpes (Euthraulius) pacis* n. sp., male imago. Scale in mm. 1, fore wing; 2, hind wing; 3, abdominal segments IV and V in lateral view; 4, abdominal terga IV and V; 5, genitalia in ventral view; 6, distal part of the penis lobes.

Genitalia (fig. 5): subgenital plate and penis medium brown. Forceps yellowish, translucent. Hind margin of the subgenital plate with a smooth concave incision. First segment evenly curved, without any inner broad expansion. Penis lobes rather short, rounded at their tips which bear about 10 small spines (fig. 6).

Cerci broken.

Size: fore wing: 4.6–5.0 mm; body: 5.3–5.6 mm.

Female, subimagos and nymphs unknown.

Affinities: *Ch. (Eu.) pacis* n. sp. is the second species of this genus to be described from the Arabian Peninsula. It can be easily distinguished from the other species, *Ch. (Eu.) arabica* Sartori & Gillies, 1990, mainly by the shape of the penis. Furthermore, *Ch. pacis* can be separated from all other *Euthraulius* species from the Oriental, Afrotropical and Palaearctic regions by the following set of characters: 1) apex of penis lobes rounded; 2) first article of the forceps without an inner broad expansion; 3) patterns of the abdominal terga. Because of the shape of the costal process of the hind wing, as well as the fore wing venation, *Ch. pacis* seems to be related to Afrotropical elements, as is *Ch. arabica*. Data on the habitat where the specimens were collected (type locality) are available in CROSSKEY & BÜTTIKER (1988).

*Choroterpes pacis* agrees completely with the subgeneric diagnosis proposed by PETERS & EDMUNDS (1964, 1970), which was based exclusively on Afrotropical and Oriental species. It has been previously mentioned (KLUGE 1984, VITTE & THOMAS 1988, SARTORI & GILLIES 1990) that Palaearctic species of the subgenus *Euthraulius* are somewhat different, especially as regards the fore wing venation and shape of the costal process of the hind wing. In the Mediterranean area, for example, it is impossible to distinguish adults of *Choroterpes (Choroterpes)* and *Choroterpes (Euthraulius)* on the basis of the features proposed by PETERS & EDMUNDS (op. cit.). In the fore wing, vein MA is supposed to be forked at over one half of the distance from base of wing to margin in *Choroterpes (Choroterpes)*, and at one half in *Choroterpes (Euthraulius)*. Based on this feature, *Ch. (Ch.) volubilis* Thomas & Vitte, 1988 would be placed in the subgenus *Euthraulius*, whereas *Ch. (Eu.) arabica* would be placed in the subgenus *Choroterpes*. The subgeneric assignment of these two species is also confirmed by larval material. The symmetrical costal process of the hind wing is found not only in species of the subgenus *Choroterpes*, but also in *Ch. (Eu.) balcanica* Ikononov, 1960, in *Ch. (Eu.) lindrothi* (Peters, 1980), and also in an as yet undescribed *Euthraulius* species from Palestine (Sartori in prep.). Although this situation is clearly unsatisfactory, we have failed to find any more reliable features to distinguish these two subgenera. A comprehensive revision of the genus *Choroterpes* and of related genera such as *Cryptopenella* Gillies, 1951, for instance, is urgently needed.

## ACKNOWLEDGEMENTS

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