

THREE NEW SPECIES OF ODONATOUS INSECTS IN THAILAND.  
II. *EUPHAEA PAHYAPI* SPEC. NOV. (ZYGOPTERA: EUPHAEIDEA)

M. Hamalainen<sup>1)</sup> and Pah-yap Kamnerdratana<sup>2)</sup>

*E. pahyapi* sp. n. (holotype ♂: Huey Toe Stream, Khao Phanom Bencha, Krabi prov., Thailand) is described, figured, and compared with *E. ochracea* Sel.

DESCRIPTION

*EUPHAEA PAHYAPI* SP. N.

Figures 1

Material (all from Krabi province, Thailand) — **Holotype**: ♂ Huey Toe-stream, Khao Phanom Bencha, 27 Oct. 1982. — **Paratypes**: 3 ♂ from the same site and date as holotype; 2 ♂ from Hucy Phai-stream, some 17 km from Krabi to Khao Phanom Bencha, 27 Oct. 1982. All material collected by Matti

Hämäläinen and Pah-yap Kamnerdratana. Holotype deposited in the Zoological Museum, University of Helsinki; 1 ♂ paratype in the British Museum and others in the author's collection.

Etymology—The species is named after Mr. Pah-yap Kamnerdratana, Senior lecturer of forest entomology in

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Kasetsart University, Bangkok. Without his help and excellent guidance to many fine localities, this and a large quantity of the c. 130 species of Odonata collected during my trips in different parts of Thailand in 1982 and 1984 would have remained undiscovered.

Male: Head. — Base and middle lobes of labium mostly black, lateral lobes pale (yellowish or pale brown<sup>\*</sup>). Labrum, clypeus and base of mandible glossy blackish brown. Genae glossy blackish brown with pale markings; edges of compound eyes narrowly pale. The rest of head mat black, with small brownish dots between antennae and lateral ocelli. Narrow pale stripes at rear of head at the level of lateral ocelli.

Prothorax. — Mat black, sides with small pale markings in less mature specimens.

Synthorax. — Mat black with pale (brownish or ochreous<sup>1</sup>) stripes as follows (Fig. 1). A narrow antehumeral stripe, slightly narrowing at its upper

end; in aged specimens the stripe is obscure or missing. A narrow, slightly undulating humeral stripe, in A stripe the posterior part of mesepimeron; in less mature specimens the stripe bends anteriorly near the dorsal carina and forms a loop. In more aged specimens the anterior end of the loop is shortened and disconnected from the stripe, forming a curved spot, or is completely missing. A stripe in the posterior part of metepisternum; the stripe crosses the spiracle so that the posterior half of the spiracle is in the pale area; the stripe extends near the dorsal carina and bends anteriorly forming a "bill". Metepimeron mostly pale in less mature specimens, with a median dark stripe. In aged specimens the dark area in metepimeron is enlarged, and only sides are pale. Poststernum pale, except the posterior tip black. Ventral side of synthorax pale. Legs black or blackish brown.

Wings. — Fore and hind wings hyaline with a uniform yellowish-brown tint. No distinct suffusion of colour noti-

<sup>\*</sup>Since the material was stored in alcohol for 2 years before mounting, some colours may be faded.

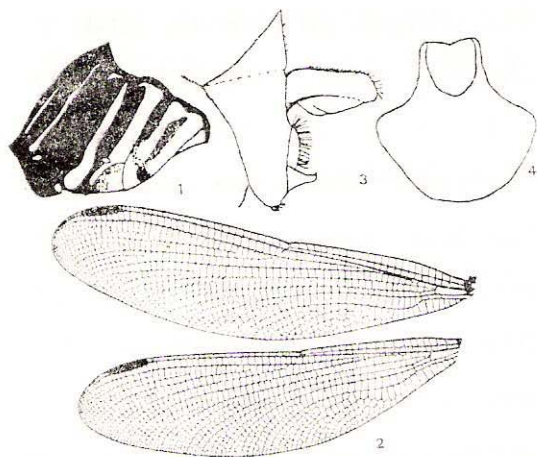


Fig 1. *Euphaea pahyapi* sp. n., male :  
 (1) synthorax, lateral view; —(2) wings;  
 —(3) caudal appendages, lateral view;  
 —(4) shape of vesicula seminalis.

ceable, but the costal and subcostal areas of both wings up to nodus slightly more coloured. Both wings with a slight greenishviolet iridescence. Venation black. Hind wing similarly shaped as fore wing 20-24 antenodals in fore wing and 16-19 in hind wing. Postnodals number 24-29 in fore wing and 21-26 in hind wing. Discoidal cell (q) or with one crossvein (in 3 ♂ entire in all wings, and in 3 ♂ entire in two wings and crossed in two wings). Two cubitoanal crossveins in all wings (3 in one wing in the whole material). Origin of  $R_3$  variable, in most of the wings

it is somewhat distal to the subnode, but in a few wings it is in continuation of the subnode or slightly proximal to it. Pterostigma blackish brown, occupying 6-8 cells; 2.7-2.9 mm in fore wing and 3.0-3.2 mm in hind wing.

Abdomen. — Black or blackish brown<sup>1</sup>. Dorsal side of segment 2 with a paler brown area covering the basal 2/3, and in segment 3 the basal 4/5 of dorsum is paler. In one specimen obscure pale brownish stripes are noticeable in segments 4, 7 and 8. A large pale marking on the side of segment 1. Ventral side of segments 3-7 paler than the dorsal side. Basal part of segment 3 with long hairs. Segment 10 with a prominent dorsal keel. Superior appendages longer than segment 10, of typical *Euphaea* shape. External genitala quite similar to those of *E. masoni* Selys. Vesicula seminalis black, ungrooved or with very smooth hardly visible grooves, and with slightly extended rounded sides.

Measurements. —Abdomen (incl. appendages) 31-33 mm, fore wing 27.5-30.0 mm, hind wing 25-27 mm.

Female: One *Euphaea* female was collected from both streams where males were found. Since males of no other *Euphaea* species were seen, both of the females may be *E. pahyapi*. However,

since the pale markings of the face and of the last abdominal segments are different, we prefer to postpone the description of the female in wait for additional material.

### DISCUSSION

The male of the new species is easily separated from most *Euphaea* (incl. *Allophaea*) species by its uniformly hyaline wings. From *E. ochracea* selys, which occurs in the same region, the new species is readily distinguished by the lack of saffronated areas on the wings. *E. ochracea* and *E. pahyapi* differ constantly also in some structural characters. In *E. ochracea* the vesicula seminalis is coarsely grooved, but in *E. pahyapi* it is ungrooved. The ventral surface of the basal part of the 3. abdominal segment is furnished with long hairs in *E. pahyapi* (as in *E. masoni*), but in *E. ochracea* the hairs are lacking or are short. There are also differences in venation. In *E. ochracea* the discoidal cell is usually crossed by 1-2 veins in the fore wing and by 2

veins in the hind wing, whereas in *E. pahyapi* there seems to be a tendency for the discoidal cell to be entire. The number of cubito-anal crossveins is smaller (usually 2) in *E. pahyapi* than in *E. ochracea* (usually 3-4).

The structural and venational characters discussed above seem to be quite constant in *E. ochracea* specimens from its whole range. The subspecific division of the species (ssp. *ochracea*, ssp. *brunnea* selys; cf Laidlaw, 1931) will be discussed on another occasion.

*E. pahyapi* probably is a very local and rare insect, perhaps confined to the Peninsular Thailand. The forest streams where it was found are very shallow, a few meters wide, and have a sandy bottom.

**ACKNOWLEDGEMENTS**

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of *E. ochracea* from Malaya and India.

**REFERENCE**

Laidlaw, F.F., 1931. A list of the dragonflies (Odonata) of the Malay Peninsula with description of new species. *J. Fed Malay Mus.* 16 (3/4) : 175-233.