

**TAXONOMIC STUDIES ON THE INDIAN SPECIES OF *PALMON*
DALMON (HYMENOPTERA : CHALCIDOIDEA : TORYMIDAE)
WITH THE DESCRIPTION OF A NEW SPECIES**

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INTRODUCTION

Palmon Dalmon is an uncommon genus of Torymidae, members of which are parasitoids in the oothecae of mantids. The genus has long been considered as a synonym of *Podagrion* Spinola till Grissell (1995) attributed an independent status to the genus. He has provided the phylogeny, synonymy and diagnosis of the genus and also synonymised *Pachytomoides* Girault under *Palmon*. Eighteen species are known under *Palmon* in the world out of which four are represented in the Oriental region viz. *greeni* (Crawford) from Sri Lanka, Taiwan and India; *ashmeadi* (Crawford) from Philippine islands; *megarhopalus* (Masi) from Taiwan; *orchesticus* (Masi) from Taiwan, Sri Lanka and India (Grissell, 1995, Noyes, 2001). Narendran (1994) reported *P. greeni* (= *Pachytomoides greeni*) and *P. orchesticus* (= *Pachytomoides orchesticus*) from India and provided a key to Oriental species of *Pachytomoides*. Here, a new species of *Palmon* is described from India and *P. orchesticus* again reported from Kerala. A key to separate the Indian species of *Palmon* is also provided.

The type specimens of the new species described are deposited in Zoological Survey of India, Western Ghats Field Research Station, Calicut, Kerala, India. The following abbreviations are used in the text :

IPAL – Institut für Pflanzenschutzforschung der Akademie der Landwirtschaftswissenschaften, Eberswalde, Germany; MCSN – Museo Civico di Storia Naturale “G.Doria,” Genoa, Italy; MV – Marginal vein; OD – ocellar diameter; OOL – Ocellocular distance; PMV – Postmarginal vein; POL – Postocellar distance; SMV – Submarginal vein; STV – Stigmal vein; T1 – Gastral tergite 1; UC – University of Ceylon, Colombo, Sri Lanka; USNM – National Museum Natural History, Washington D.C., USA.

Key to the Indian species of *Palmon* Dalmon, females

1. Ovipositor short, 2.92x as long as gaster and 1.4x as long as rest of the body; length of antennal clava 1.3x preceding funicular segments and ring segment together (Fig. 1)
..... *P. alfredi* sp. nov.

- Ovipositor long, 4–4.5x as long as gaster and 2.1x as long as rest of the body; length of clava never exceeds preceding 7 funicular segments 2
- 2. Forewing with an infuscated area attached to STV; gaster with T1 joining petiole at condyle away from its insertion at foramen *P. greeni* (Crawford)
- Forewing without an infuscated area attached to STV; gaster with T1 joining petiole at condyle near its insertion at foramen *P. orchesticus* (Masi)

1. *Palmon alfredi* sp.nov.

(Figs. 1-4)

Female : Body length 2.8 mm, ovipositor, 3.9 mm. Color metallic blue, bright green on face and gena; antennae testaceous except on clava brown; gaster brown, paler on ventral part and a narrow sub median band dorsally; ovipositor sheaths dark brown; fore and mid legs uniformly yellow; hind legs brown except basal half of coxae blackish on dorsal part; wings sub hyaline, veins and pubescence brown.

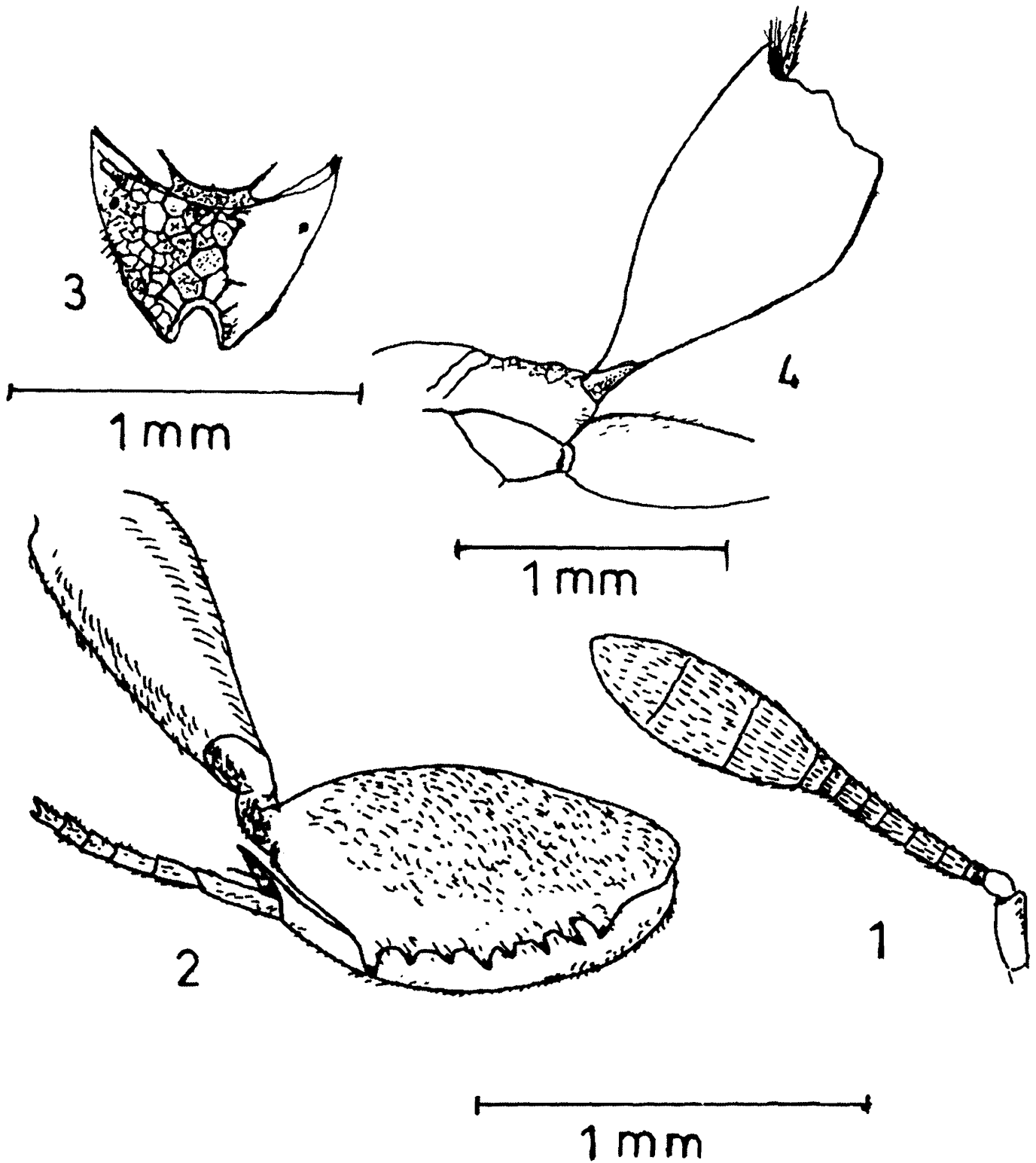
Head : 1.2x as broad as pronotum; reticulation finer and closer. POL : OOL : OD = 6.5 : 2 : 3; occiput with a fine carina. Head width : length in dorsal view 26.5 : 17; eyes separated by a distance equal to their length; eye length : width 17.5 : 13; malar space length in profile 5; malar grooves distinct; gena with fine posterior carina; antenna (Fig. 1) with scape length 8.55, pedicel plus flagellum 52, clava 1.3x as long as funicular segments and ring segment together.

Mesosoma : 1.8x as long as broad, closely and moderately reticulate. Pronotum anteriorly rounded. Mesoscutum, 1.7x as wide as long; notauli shallow, complete. Scutellum with reticulation finer towards the tip, only slightly convex, medially as long as mesoscutum. Propodeum (Fig. 3) almost level with scutellum, slightly curved in profile, uniformly with irregular aerolae, interior of which finely granulated in the middle, but polished laterally, medially propodeum shorter than scutellum, (12 : 17.5). Prepectus almost polished. Mesopleuron almost polished except on mesepimeron finely reticulate; lower mesepimeron with a deep pit anteriorly. Metapleuron very finely aciculate. Hind coxae (Fig. 2) with moderate reticulation on basal part. Relative lengths of hind coxa length : width 34 : 22.5, femur 44 : 20; tibia 43 : 5; tarsus length 26.5. Forewing length 3.2x width, pubescence almost complete except on a narrow posterobasal strip. Relative lengths SMV 42, MV 31, PMV 9, STV 5.

Gaster : (Fig. 4) shiny, 0.9x as long as rest of the body (without ovipositor), ovipositor 1.4x as long as rest of the body, 2.92x gaster and 3.9x as long as hind tibia

Host : Not known, biology in moist deciduous forests.

Holotype : Female : INDIA : Kerala, Wynad district, Muthanga, moist deciduous forest, 7.x.95, Coil. P. M. Sureshan.



Figs. 1-4. *Palmon alfredi* sp. nov. Female : 1. antenna; 2. hind leg; 3. propodeum dorsal view; 4. attachment of gaster on propodeum in profile.

Etymology : The species is named after Dr. J. R. B. Alfred, Director, Zoological Survey of India in honour of his contributions towards Indian Zoology.

Remarks : In general morphology this species closely resembles *P. orchesticus* (Masi) but can be readily distinguished from it and other Indian species *P. greeni* by the characters given in the key.

2. *Palmon orchesticus* (Masi)

Pachytomoides orchesticus Masi 1926 : 264-266, Female, Male, syntypes, Anping, Formosa (IPAL and/or MCSN), synonymy by Grissell, 1995.

Podagrion idgo Femando 1957 : 16-17, Female, syntypes, Habarana, Ceylon (UC) synonymy by Narendran, 1994.

Material examined : I Female, INDIA : Kerala : Calicut district, Anakampoyil, scrub jungle, 17.x.1995, Coil. P. M. Sureshan.

Remarks : Mani (1989) redescribed the female of *orchesticus* and Narendran (1994) the female and male. The present record forms the subsequent report of the species from Kerala after 1994.

SUMMARY

A new species of *Palmon* Dalmon viz, *P. wynadensis* is described from India and a key to the Indian species of *Palmon* is provided. *Palmon orchesticus* (Masi) is reported from Kerala after 1994.

ACKNOWLEDGEMENTS

I am grateful to the Director, Zoological Survey of India, Calcutta and the Officer in charge, Zoological Survey of India, Western Ghats Field Research Station, Calicut for providing necessary facilities and constant encouragement.

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