ADDITIONS TO THE KNOWLEDGE OF THE GENUS SYMMORPHUS WESMAEL, 1836 (HYMENOPTERA: VESPIDAE: EUMENINAE) IN INDIA WITH TWO NEW RECORDS OF SPECIES

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ABSTRACT

Two species of potter wasps of the genus Symmorphus Wesmael, 1836, namely Symmorphus (Symmorphus) alkimus alkimus Cumming & van der Vecht, 1986 and S. (S.) ambotretus Cumming, 1989, are recorded here for the first time from India. A key to the Indian species of the genus and an updated checklist of the species of Symmorphus of the Indian subcontinent are also provided.

Key words: Hymenoptera; Vespidae; Eumeninae; Symmorphus; first records; key; checklist; India.

RESUMEN

Novedades en el conocimiento del género Symmorphus Wesmael, 1836 (Hymenoptera: Vespidae: Eumeninae) en la India, con dos primeras citas de especies.

Se citan de la India por primera vez dos especies del género Symmorphus Wesmael, 1836, Symmorphus (Symmorphus) alkimus alkimus Cumming & van der Vecht, 1986 y S. (S.) ambotretus Cumming, 1989. Se incluyen una clave para las especies indias del género y una lista actualizada de las especies de Symmorphus del subcontinente indio.

Palabras clave: Hymenoptera; Vespidae; Eumeninae; Symmorphus; primeras citas; clave; catálogo; India.


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Introduction

Wesmael (1836) described the genus Symmorphus as a subgenus of Odynerus Latreille, 1802 based on the species Odynerus elegans Wesmael, 1833 [known now as Symmorphus gracilis (Brullé, 1832)]. This genus, with 51 species in two subgenera (Parasymphorus Cumming & van der Vecht, 1986 and Symmorphus s.s.), is distributed in the Palearctic, Oriental and Nearctic Regions and the northernmost Neotropical Region. Six species of Symmorphus have so far been reported from India. In this paper, two more species, namely Symmorphus (Symmorphus) alkimus alkimus Cumming & van der Vecht, 1986, and S. (S.) ambotretus Cumming, 1989, are recorded for the first time from India. Symmorphus (S.) alkimus alkimus is recorded from Kerala and S. (S.) ambotretus is recorded from Kashmir. A key to the Indian species and an updated checklist of the Indian subcontinent’s species are also provided.

Material and methods

The studied specimen of Symmorphus (Symmorphus) alkimus was collected at Muthappanpuzha (11°26′37.89″ N, 76°05′16.00″ E, alt. 52 m), in the Kozhikode district of Kerala, which is a part of the Western Ghats, one of the biodiversity hotspots of India. The specimens of S. (S.) ambotretus were collected at the village of Heff (33°75′94″ N, 74°80′39″ E, alt. 1594 m), in the Shopian district of Kashmir. The specimens were examined under a LEICA M60 stereozoom microscope and the images captured with a LEICA DFC-450 camera. The studied specimens have been added to the ‘National Zoological Collections’ of the Western Ghats Regional Centre, Zoological Survey of India, Kozhikode, India (ZSIK).

Abbreviations used for museums

USNM = National Museum of Natural History, Washington, DC, USA
ZSIK = Western Ghats Regional Centre, Zoological Survey of India, Kozhikode, India.

Abbreviations used for morphological terms

H = head
M = mesosoma
S = metasomal sterna
T = metasomal terga.

Results and discussion

Symmorphus (Symmorphus) alkimus alkimus Cumming & van der Vecht, 1986

Figs. 1–6

Symmorphus alkimus Cumming & van der Vecht, 1986: 23, 28, fig. 3, ♀, ♂ (in subgenus Symmorphus) - “SRI LANKA: Kan. [Kandy] Dist./Dawatakele” (holotype ♀ USNM); also from four other localities.


Diagnosis. ♀. Median area of occipital carina without submedial incisions, slightly pointed medially; metanotum nearly vertical; T1 distinctly broad, medial postcarinal length 0.47-0.49x apical width; base of T2 obtusely angulate; base of S2 abruptly truncate; apical margin of T2 & S2 depressed; female clypeus shallowly emarginate apically; propodeal valvula short posteriorly; fused distally to posterolateral projection of submarginal carina; mesepisternum with epicnemial carina dorsally obsolete, not extended to posterolateral margin of pronotum; female mandible with 5 teeth.

Colour description. ♀. Black with yellow as follows: transverse band at base of clypeus; interantennal spot; postocular dot; spot at base of ventral side of scape; pair of spots on dorsal face of pronotum; pair of spots on scutellum; spot on top of mesopleuron; tegula posteriorly; outer surface of tibiae (on hind tibia not extended to apex); narrow apical band on T1; narrow subapical band on T2 and S2. Tarsi pale brown basally to dark reddish brown apically. Wings lightly infuscate.

Dimensions. Body length (H+M+T1+T2): ♀, 7.5 mm; Forewing length: 6.5 mm.

Distribution. India (first record): Kerala; Sri Lanka. A second subspecies, S. alkimus dialeukus Cumming, 1989, has been described from the Indonesian island of Sumatra (Cumming, 1989).

Comments. The single female specimen examined here from Kerala has more extensive yellow markings on the body than the known material of the Sri Lankan population (comparison based on the descriptions in: Cumming & van der Vecht, 1986; Cumming, 1989). The additional yellow markings present in the Kerala specimen are as follows: transverse band at base of clypeus, spot at base of ventral side of scape, pair of spots on dorsal face of pronotum, pair of spots on scutellum, spot on top of mesopleuron and tegula posteriorly. These differences may be due to geographical isolation of Kerala from Sri Lanka. The colour differences between the Kerala specimen and the Sri Lankan population are perhaps significant, but it is not easy to decide, especially based on just one specimen, whether to describe a new subspecies. There is not enough information available about the possible colour variation of the Sri Lankan population.
(known only from the type material), and neither do we know if there is perhaps a cline across southern India, with a more xanthic form at the western end (Kerala) and a more melanistic form in the east (Sri Lanka), so, for the time being, we are identifying our Kerala specimen as Symmorphus alkimus alkimus.  

_Symmorphus (Symmorphus) ambotretus_ Cumming, 1989

Figs. 7–18


DIAGNOSIS. ♀. Occipital carina with 2 submedial incisions that delimit a blunt median tooth; T1 slightly

Figs. 1-6.— _Symmorphus (Symmorphus) alkimus alkimus_ Cumming & van der Vecht, 1986, ♀, 1: Body, in profile. 2: Head, in frontal view. 3-4: Head and mesosoma, in dorsal (3) and lateral (4) view. 5-6: Metasoma, in dorsal (5) and lateral (6) view (Photographs by P.G. Kumar).

Figs. 1-6.— _Symmorphus (Symmorphus) alkimus alkimus_ Cumming & van der Vecht, 1986, ♀, 1: Cuerpo de perfil. 2: Cabeza en vista frontal. 3-4: Cabeza y mesosoma, en vistas dorsal (3) y lateral (4). 5-6: Metasoma, en vistas dorsal (5) y lateral (6) (Fotos de P.G. Kumar).
broad, medial postcarinal length 0.51-0.57 x apical width; metasomal segment 2 in profile with base of tergum obtusely angulate and sternum abruptly truncate posterior of basal sulcus; female clypeus shallowly emarginate apically; propodeal valvula short posteriorly, fused distally to posterolateral projection of submarginal carina; mesepisternum with epinotal carina dorsally obsolete, not extended to posterolateral margin of pronotum; female mandible with 5 teeth.

COLOUR DESCRIPTION. ♀. Black with orange red as follows: interantennal spot and postocular spot very small and vague; pair of spots on dorsal face of pronotum; pair of vague spots on scutellum (absent in one female); vague spot on top of mesopleuron; apical band of T1; subapical band of T2 and S2. Tarsal claws brown. Wings lightly infuscate.

♂. In coloration similar to female except as follows: clypeus yellow except black apical margin; mandible yellow except black outer margins; scape with basal yellow spot; interantennal spot yellow; legs with line on outer surface of tibia and basitarsus yellow.

DIMENSIONS. Body length (H+M+T1+T2): ♀, 7.5-8 mm; Forewing length: 7.5 mm; ♂, 6.2 mm; Forewing length: 6 mm.

DISTRIBUTION. India (first record): Jammu & Kashmir; Nepal; China: Sichuan, Yunnan, Chongqing, Shaanxi; Korea.
Key to the Indian species of the genus *Symmorphus* (modified from Cumming, 1989)

1. Propodeal valvula produced posteriorly, free distally from posterolateral projection of submarginal carina; mesepisternum with epicnemial carina complete, extended to posterolateral margin of pronotum; female mandible with 4 teeth; metasomal segment 2 in profile with base of tergum obtusely angulate and sternum abruptly truncate posterior of basal sulcus; T1 elongate, medial postcarinal length 0.73x apical width; occipital carina with 2 submedial incisions that delimit a sharp median tooth; interocellar area not raised

   *S. (Parasymmorphus) parvilineatus* (Cameron, 1904)

2. Metasomal segment 2 in profile with base of tergum obtusely angulate and sternum abruptly truncate posterior of basal sulcus; female clypeus shallowly emarginate apically

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   – Metasomal segment 2 in profile with base of tergum gradually rounded and sternum flat to slightly convex posterior of basal sulcus; female clypeus shallowly to deeply emarginate apically

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3. Occipital carina with 2 submedial incisions that delimit a blunt median tooth; T1 slightly broad, medial postcarinal length 0.51-0.57x apical width; maculation orange-yellow to orange red

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   – Occipital carina without submedial incisions, slightly pointed medially; T1 distinctly broad, medial postcarinal length 0.47-0.49x apical width; maculation yellow

   ........................................................................................................4

   *S. (Symmorphus) ambotretus* Cumming, 1989

   – Occipital carina without submedial incisions, slightly pointed medially; T1 distinctly broad, medial postcarinal length 0.47-0.49x apical width; maculation yellow

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   *S. (S.) alkimus alkimus* Cumming & van der Vecht, 1986

Symmorphus

Checklist of the Indian subcontinent species of the
genus Symmorphus

4. Symmorphus (Symmorphus) parvilineatus (Cameron, 1904) — India (Meghalaya*, Sikkim); Laos. *Bequaert (1928) and Giordani Soika (1941) reported this species from “Shillong (Assam)”. At present, Shillong is in the state of Meghalaya.

5. Symmorphus (Symmorphus) lamriensis Giordani Soika, 1966 — India (Sikkim), Nepal; China (Yunnan, Sichuan).

6. Symmorphus (Symmorphus) gracilis (Brullé, 1832) — India (Jammu & Kashmir). Elsewhere: Sweden, Denmark, Netherlands, Belgium, Luxembourg, England, Wales, Scotland, France, Spain, Portugal, Italy, Switzerland, Germany, Austria, Czech Republic, Slovakia, Hungary, Poland, Belarus, Lithuania, Romania, Ukraine, Bulgaria, Montenegro, Albania, Macedonia, Greece, Turkey, Lebanon, Syria, Jordan, Iran, Armenia, Kazakhstan.

7. Symmorphus (Symmorphus) alkimus alkimus (Waldo, 1910) — India (Himachal Pradesh*, Sikkim); Elsewhere: Greece, Turkey, Lebanon, Syria, Jordan, Iran, Armenia, Kazakhstan.

8. Symmorphus (Symmorphus) violaceipennis Giordani Soika, 1966 — India (Sikkim), Nepal; China (Yunnan, Sichuan).

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