

## Additions to the knowledge of the genus *Allorhynchium* van der Vecht from the Indian subcontinent with the description of a new species from Kerala (Hymenoptera: Vespidae: Eumeninae)

\*P. Girish Kumar<sup>1</sup>, J. M. Carpenter<sup>2</sup> and P. M. Sureshan<sup>3</sup>

<sup>1,3</sup>Western Ghat Regional Centre, Zoological Survey of India, Kozhikode, Kerala- 673 006, India.

<sup>2</sup>Division of Invertebrate Zoology, American Museum of Natural History, Central Park West at 79<sup>th</sup> Street, New York, NY 10024, USA.

(Email: kpgiris@gmail.com)

### Abstract

A new species of *Allorhynchium*, namely, *A. tuberculatum* Girish Kumar and Carpenter sp. n., is described from Thattekkad Bird Sanctuary, Kerala. The male of the species *A. anomalum* Giordani Soika, 1992, is described here for the first time. A key to species from the Indian subcontinent and an updated checklist of Oriental species are provided.

**Keywords:** *Allorhynchium*, new species, key, checklist, Kerala, Indian subcontinent.

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### Introduction

The potter wasp genus *Allorhynchium* van der Vecht, 1963, (Hymenoptera: Vespidae: Eumeninae) is distributed in the Australian, Oriental and Palearctic Regions. Sixteen species with additional four subspecies are recorded under this genus from the Oriental Region of which four species namely, *Allorhynchium anomalum* Giordani Soika, 1992, *A. argentatum* (Fabricius, 1804), *A. lugubrinum* (Cameron, 1900) and *A. metallicum* (de Saussure, 1852), are recorded from the Indian subcontinent. In this paper, we are describing a new species which was collected in dense forest patch of Thattekkad Bird Sanctuary, Kerala. The male of the species *A. anomalum* Giordani Soika, 1992, is described here for the first time. A key to species from the Indian subcontinent is provided. An updated checklist of Oriental species is also provided.

### Material and Methods

The specimens of the present study were collected in a dense evergreen forest patch of Thattekkad Bird Sanctuary, Kerala, India. They were examined under a LEICA M60 stereozoom microscope and images captured with the camera model LEICA DFC-

450. The holotype of the new species described here is deposited in the 'National Zoological Collections' of the Western Ghat Regional Centre, Zoological Survey of India, Kozhikode (= Calicut), India (ZSIK).

*Abbreviations used for the Museums:* NMNH = National Museum for Natural History, Post bus 9 517, 2300 RA, Leiden, The Netherlands; ZSIK — Western Ghat Regional Centre, Zoological Survey of India, Kozhikode (= Calicut), India.

*Abbreviations used for the terms:* H = Head; M = Mesosoma; OOL = Ocellocular distance; POL = Post ocellar distance; S = Metasomal sternum; T = Metasomal tergum.

### Results

#### Key to species of the genus *Allorhynchium* van der Vecht, 1963, from the Indian subcontinent

(Modified from Girish Kumar and Sharma, 2015)

1. Median area of clypeus strongly punctate, diameter of punctures distinctly more than distance between punctures, interspaces almost carinate; dorsomedian area of T1 and T2 strongly punctate, diameter of punctures more than distance between punctures; metasoma not entirely black,

apex of T1 and T2 with yellow bands (sometimes medially interrupted); tegula reddish brown.....*A.lugubrinum* (Cameron)

- Median area of clypeus not strongly punctate, diameter of punctures almost equal to or less than distance between punctures, interspaces not carinate; dorsomedian area of T1 and T2 weakly punctate or almost absent, if present, diameter of punctures equal to or less than distance between punctures; metasoma entirely black; tegula black. .... 2
- 2. T1 and T2 with very small, sparse and very shallow punctures except at lateral and apical portions strongly punctured. .... *A.metallicum* (de Saussure)
- T1 and T2 with medium-sized punctures, interspaces in average equal to punctures, punctures of almost uniform density and thickness except at lateral and apical portions strongly punctured. .... 3
- 3. Clypeus, in male, with a tuberculate projection towards its apical half (Fig. 3); a narrow transverse yellowish white band present at base of clypeus. [only the male is available for this species] ..... *A.tuberculatum*  
**Girish Kumar and Carpenter sp. n.**
- Clypeus, in male, without any tuberculate projection (Fig. 8); clypeus either entirely black or entirely yellow. [if the female of *tuberculatum* is found, then it may go to couplet 4] ..... 4
- 4. Clypeus weakly emarginated at apex in female; dorsal surface of propodeum placed at a level well below that of dorsal surface of metanotum; S2 strongly convex in basal half; clypeus, in male, entirely black; uplifted basal area of S7 not entire, interrupted at middle..... *A. anomalum*  
**Giordani Soika**
- Clypeus strongly emarginated at apex in female; dorsal surface of propodeum placed almost at the same level of dorsal surface of metanotum; S2 not so strongly convex in basal half; clypeus, in male, entirely yellow; uplifted basal area of S7 entire, not interrupted at middle..... *A. argentatum* (Fabricius)

***Allorhynchium tuberculatum* Girish Kumar and Carpenter sp. n.  
(Figs. 1-6)**

[urn:lsid:zoobank.org:act:2005951C-44A04DBD-8992-9A0B8DCF692E](https://zoobank.org/urn:lsid:zoobank.org:act:2005951C-44A04DBD-8992-9A0B8DCF692E)

**Description:** Holotype Male (Fig. 1): Body length (H+M+T1+T2) 10 mm; forewing length 9 mm. Body black with the following whitish yellow markings: a transverse band at base of clypeus; a line in between antennal toruli and inner eye margin. Tarsal claws blackish brown. Wings slightly dark with purple reflections. Body with rather sparsely to moderately dense fine silvery white pubescence, head rather strongly pubescent.

**Head:** 1.17x as wide as long in front view (Fig. 2); clypeus (Fig. 3) broadly pyriform, with a strong tuberculate projection towards apical half, and strongly emarginated apex, maximum width of clypeus 1.14x length medially, with moderately strong punctures, the distance between the punctures in general about as long as diameter of punctures; labrum elongate, rounded at apex; a short but distinct strong carina present at the middle of interantennal space; frons, vertex and temple with close, strong and pit-like punctures, diameter of the punctures greater than distance between the punctures; ocular sinus with strong punctures except at margins; area between the antennal toruli and inner eye margin smooth; POL as long as OOL; diameter of anterior ocellus as long as distance between anterior ocellus and posterior ocelli; temple 0.79x as wide as eye in profile (measured through its ocular sinus); interocular distance 1.20x greater on vertex than at clypeus; occipital carina complete and narrowed ventrally. Antenna (Fig. 4) with the last segment hooked apically and almost reaching the apex of tenth antennal segment in curved position.

**Mesosoma:** Anterior face of pronotum smooth without punctures; pronotal carina strong, complete; posterior face of pronotum, mesoscutum and scutellum with strong and close rugose punctures; lateral sides of pronotum with transverse striations; median length of mesoscutum 0.91x as long as its maximum width; metanotum not gibbous, strongly and irregularly punctate, interspaces carinate; propleuron almost smooth; mesopleuron with strong and deep rugose punctures except epicnemium and posterior margin smooth; epicnemial carina present; upper metapleuron with a few strong

Plate I



Figs. 1–6. *Allorhynchium tuberculatum* sp. nov. ♂. 1. Body profile; 2. Head frontal view; 3. Clypeus; 4. Antenna; 5. Metanotum and Propodeum; 6. Apical sternites.

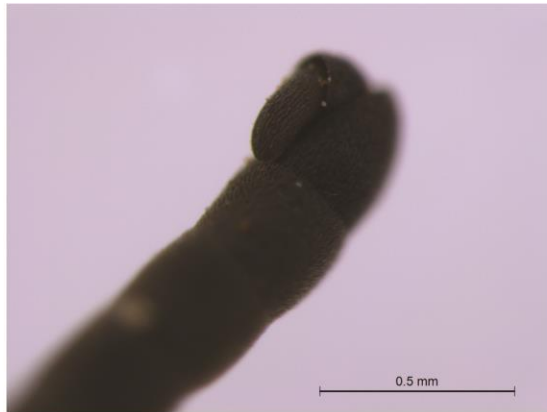
Plate II



7



8



9



10



11



12

Figs. 7–12. *Allorhynchium anomalum* Giordani Soika ♂. 7. Body Profile; 8. Head frontal view; 9. Apical antennal articles; 10. Head and mesosoma dorsal view; 11. Metasoma dorsal view; 12. Apical sternites.

transverse striations, lower metapleuron almost smooth with weak transverse striations and few punctures. Propodeum (Fig. 5) vertical, concave posteriorly, declivity of propodeum not bordered dorsally by a carina, dorsolateral margin of propodeum somewhat rounded, dorsolateral area very strongly punctate and irregularly rugose, interspaces carinate, with a few teeth-like structures behind metanotum, posterior concave area of propodeum with a few weak transverse striations, median carina present which runs upwards in to a deep oval fovea, a small median carina present behind metanotum, lateral sides of propodeum strongly rugosely punctured in upper half, weakly punctured to irregularly transversely striate in lower half except at posterior margin, smooth. Tegula micropunctate, not evenly rounded posteriorly and posteriorly not reaching apex of parategula; axillary fossa elongate. Midtibia with 1 spur. Forewing length 3.23x its maximum width, prestigma 0.49x maximum length of pterostigma, outer vein of third submarginal cell anteriorly very close to apex of marginal cell.

**Metasoma:** T1 1.66x as wide as long in dorsal view, 0.88x as wide as T2; T1 and T2 with medium-sized, closely arranged and moderately dense punctures; visible part of T3 to T5 and S3 to S5 with close but small punctures; narrow basal part of S1 granulate without transverse striations, posterior transverse area of S1 with rather irregular vertical striations and a weak median carina; S2 with moderately strong and deep punctures; longitudinal carinae in transverse groove at base of S2 strongly developed and rather regular; S7 (Fig. 6) with a distinctly uplifted basal area which is not interrupted at middle.

**Female:** Unknown.

**Material examined:** Holotype ♂, INDIA: Kerala, Ernakulum district, Thattekkad Bird Sanctuary, Pullasserikkuthu, 29.x.2015, Coll. K.G. Emiliyamma & Party, Regd. No. ZSI/WGRS/I.R-INV.5007.

**Distribution:** India: Kerala.

**Etymology:** The species is named after the word “tuberculate” (itself derived from the Latin tuberculum), in reference to the tuberculate projection towards the apical half

of the male clypeus.

**Discussion:** This new species differs from all other Indian subcontinent species in having a strong tuberculate projection towards the apical half of the male clypeus.

***Allorhynchium anomalum* Giordani  
Soika, 1992  
(Figs. 7-12)**

*Allorhynchium anomalum* Giordani Soika, 1992: 41, 51, female - “S. India: Kerala St., Trivandrum Distr., 900 m, Poonmundi Res.” (NMNH).

**Diagnosis:** Male (Fig. 7): Clypeus strongly emarginated at apex (Fig. 8); apical antennal segment (Fig. 9) is stout, hooked apically and almost reaches the apex of tenth antennal segment in curved position; dorsal surface of propodeum placed at a level well below that of dorsal surface of metanotum (Fig. 10); metanotum more protruding, with a distinct posterior part; propodeum completely devoid of upper carina, excluding dentiform protrusions behind metanotum; lateral sides of propodeum sharply divided in to a convex upper half with large punctures, which continues on to the dorsal surface, and a lower half perfectly smooth and shiny, forming a broad curve after reaching the lower carina, located on the rear face of propodeum, that lower carina less developed, but still distinct; punctation on T2 fine and moderately dense, with interspaces on average equal to punctures except at lateral and apical margin with strong punctures (Fig. 11); S2 strongly convex at basal half, then sub-flat; uplifted basal area of S7 not entire, interrupted at middle (Fig. 12).

**Colour:** Body entirely black except tarsal claws blackish brown. Wings slightly dark with violet reflections. Body with rather sparsely to moderately dense fine silvery white pubescence, head rather strongly pubescent.

**Size** (H+M+T1+T2): Body length (H+M+T1+T2) 8.5 mm; Forewing length 9.5 mm.

**Material examined:** INDIA: Kerala, Ernakulum district, Thattekkad Bird Sanctuary, Pullasserikkuthu, 1♂, 29.x.2015, Coll. K. G. Emiliyamma & Party, Regd. No. ZSI/WGRS/I.R-INV.4970.

**Distribution:** India: Kerala.

**Remarks:** Giordani Soika (1992) originally described this species from “Poonmundi Res. of Trivandrum Distr. [=Thiruvananthapuram district]” of Kerala based on the female. We describe here the male of this species from Thattekkad Bird Sanctuary for the first time and this is the first report of this species after its original description by Giordani Soika (1992). Although we did not see female specimens, the propodeum in the male is just as that described for the female by Giordani Soika, and this distinctive condition leaves no doubt as to the association of the sexes.

**Checklist of the Oriental species of the genus *Allorhynchium* van der Vecht, 1963**

1. *A. anomalum* Giordani Soika, 1992 — India: Kerala.
2. *A. argentatum* (Fabricius, 1804) — Pakistan; India: Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Chhattisgarh, Himachal Pradesh, Karnataka, Kerala, Meghalaya, Mizoram, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh, West Bengal; Nepal; Myanmar; Thailand; Laos; Malaysia; Singapore; Indonesia: Sumatra, Java, Bali, Borneo, Sulawesi; Philippines.
3. *A. cariniventre* Giordani Soika, 1986 — Philippines.
4. *A. chinense* (de Saussure, 1862) — China; Taiwan; Vietnam; Philippines.
5. *A. concolor* van der Vecht, 1963 — Indonesia: Java.
6. *A. iridipenne* (Smith, 1861) — Indonesia: Sulawesi, Moluccas; Australia.
- 7a. *A. laminatum laminatum* (Gribodo, 1892) — Indonesia: Sulawesi.
- 7b. *A. laminatum nigrescens* van der Vecht, 1963 — Indonesia: Sulawesi.
8. *A. lugubrinum* (Cameron, 1900) — India: Meghalaya, Sikkim; China.
9. *A. metallicum* (de Saussure, 1852) — Pakistan; India: Andhra Pradesh, Assam, Chhattisgarh, Delhi, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Lakshadweep Islands, Madhya Pradesh, Maharashtra, Manipur, Odisha, Pondicherry, Rajasthan, Sikkim, Tamil Nadu, Uttarakhand, Uttar Pradesh, West Bengal; Sri Lanka; Maldive Islands; Nepal, Myanmar; Malaysia: Sarawak; Indonesia: Moluccas; Taiwan.
10. *A. obscurum* (Smith) — Indonesia: Kalimantan, Sumatra; Malaysia: Sarawak.
11. *A. quadrimaculatum* Gusenleitner, 1997 — Laos.
12. *A. quadrituberculatum* (von Schulthess, 1913) — Philippines.
- 13a. *A. snelleni imitator* van der Vecht, 1963 — Indonesia: Java, Krakatau.
- 13b. *A. snelleni javanum* (de Saussure, 1862) — Indonesia: Java.
- 13c. *A. snelleni snelleni* (de Saussure, 1862) — Vietnam; Indonesia: Sumatra (Bangka, Biliton, Sangijang, Sunda Straits), Java (including Karimunjawa, Bawean, Kangean), Kalimantan; Philippines.
- 14a. *A. tigrinum atripenne* Giordani Soika, 1986 — Indonesia: Java, Bali, Timor.
- 14b. *A. tigrinum tigrinum* van der Vecht, 1963 — Indonesia: Sumba.
15. *A. tuberculatum* Girish Kumar and Carpenter **sp. n.** — India: Kerala.
16. *A. violaceipenne* Gusenleitner, 2003 — Philippines.
17. *A. vollenhoveni* (de Saussure, 1862) — Indonesia: Java, Bali.

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