



Aulacus ceciliae Turrisi, 2013 (Hymenoptera, Evanioidea: Aulacidae) a new remarkable record for Vietnam

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Abstract. The occurrence of *Aulacus ceciliae* Turrisi, 2013 in Vietnam is reported for the first time based on one female specimen recently collected in Central Vietnam, Tua Thien Hue province, preserved in the Museum of Natural History “La Specola”, University of Florence, Italy.

Riassunto. *Aulacus ceciliae* Turrisi, 2013 (Hymenoptera, Evanioidea: Aulacidae) nuovo interessante reperto per il Vietnam. Viene riportata per la prima volta la presenza di *Aulacus ceciliae* Turrisi, 2013 in Vietnam, sulla base di un esemplare femmina recentemente raccolto nel Vietnam centrale, provincia di Tua Thien Hue, conservato presso il Museo di Storia Naturale “La Specola”, Università di Firenze, Italia.

Tóm tắt. *Aulacus ceciliae* Turrisi, 2013 (Hymenoptera, Evanioidea: Aulacidae) loài ghi nhận mới đáng chú ý cho Việt Nam. Sự xuất hiện của loài *Aulacus ceciliae* Turrisi, 2013 được xác định là ghi nhận lần đầu tiên cho Việt Nam dựa trên một mẫu vật cái thu thập gần đây ở tỉnh Thừa Thiên Huế, miền Trung Việt Nam. Mẫu vật được lưu giữ tại Bảo tàng Lịch sử Tự nhiên “La Specola”, Đại học Florence, Italia”

Key words. Hymenoptera, Evanioidea, Aulacidae, Vietnam, first record.

The Evaniomorph family Aulacidae represents a remarkable group of koinobiont endoparasitoids of wood-boring insects (SKINNER & THOMPSON, 1960; JENNINGS & AUSTIN, 2004). Aulacids exhibit a peculiar appearance due to the subglobose head, the mesosoma more or less coarsely sculptured, the metasoma more or less compressed laterally attached high on a pyramidal propodeum, the hind coxal foramina far below the propodeal foramen and the forewing with vein 2m-cu present (TURRISI *et al.*, 2009; TURRISI, 2023). Aulacid hosts are mostly larval Cerambycidae, less frequently larval Xiphytriidae and Buprestidae (SMITH, 2001; JENNINGS & AUSTIN, 2004; TURRISI & VILHELMSEN, 2010). Aulacidae currently comprises 328 extant species belonging to two genera: *Aulacus* Jurine, 1807, with 124 species; and *Pristaulacus* Kieffer, 1900 (including the former *Panaulix* Benoit, 1984), with 204 species (SMITH, 2001; TURRISI *et al.*, 2009; TURRISI, 2017; TURRISI & NOBILE, 2024; PHAM *et al.*, 2024), but the expected real number of species should exceed 500 (TURRISI, 2017). Both genera are represented in all zoogeographic regions, except Antarctica, although *Aulacus* is not known from the Afrotropics (KIEFFER, 1912; HEDICKE, 1939; SMITH, 2001; TURRISI *et al.*, 2009; TURRISI, 2017). The Oriental Region hosts a rich and diverse aulacid fauna, although a significant number of species have yet to be described (TURRISI & SMITH, 2011; TURRISI, 2017). The aulacids from Vietnam have been reviewed very recently with 15 species recognized under the genus *Pristaulacus* (PHAM *et al.*, 2024). Based on the study of a specimen stored in the Museum of Natural History “La Specola”, University of Florence, Italy (MZUF), I can add the first representative of the genus *Aulacus* known from Vietnam.

Aulacus ceciliae Turrisi, 2013 (Figs. 1-5)

Aulacus ceciliae Turrisi, 2013: 329.

Aulacus ceciliae Turrisi, 2017: 932.

Material examined. VIETNAM: 1♀, Central Vietnam, Thua Thien-Hue Province, Bach Ma Natl Park, surroundings of Hotel Morin, 1350-1400 m a.s.l., 16.2°N 107.85°E, 23-28.V.2014, Bartolozzi L., Chelazzi G., Bandinelli A., Bambi S., Fabiano F. leg. (MZUF, N. mag. 2978).

Identification. Length: 11.8-13.3 mm. Colour black, except mandible dark reddish in middle; molar area dark reddish apically; maxillo-labial complex dark reddish to dark brown; fore and mid tibiae and tarsi dark brown; wings hyaline; fore wing with a moderately wide irregular dark brown substigmal spot, about two third as wide as stigma length, posteriorly not extended beyond submarginal cell 1 and apex extensively infuscate, dark brown. Setae: whitish, partly goldish on mandible. Head, in dorsal view, slightly less than 1.3 times wider than long; shiny; vertex with two well-developed lateral tooth-like processes; occipital margin almost straight, without carina; gena, in dorsal view, well developed, $1.0 \times$ eye length, subparallel, weakly rounded. Mesosoma moderately coarsely sculptured; prescutum triangular, wide, long, convex, polished-punctate on basal half, transverse-carinulate on distal half; mesoscutum transverse-carinulate punctate anterior to notauli, with parascutal lobe areolate-rugulose-punctate; coxa III with broad oblique medial groove. Metasoma very shiny, pyriform (lateral view), very weakly compressed laterally; petiole elongate, slender, 4.0 times longer than wide; ovipositor subequal to fore wing length and to body length. Male with colour, structure and setae like female, but antenna longer.

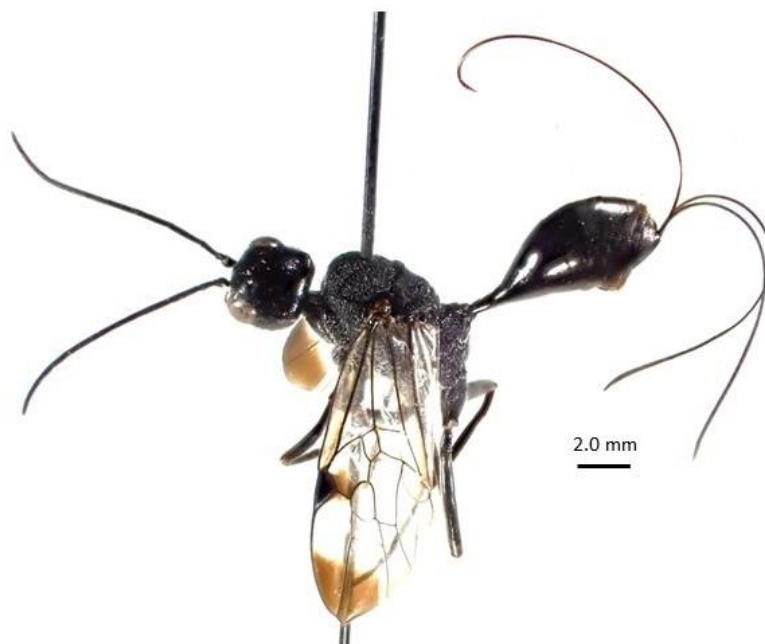


Fig. 1 - *Aulacus ceciliae* Turrisi, 2013 ♀ from Vietnam (MZUF), habitus, lateral view.

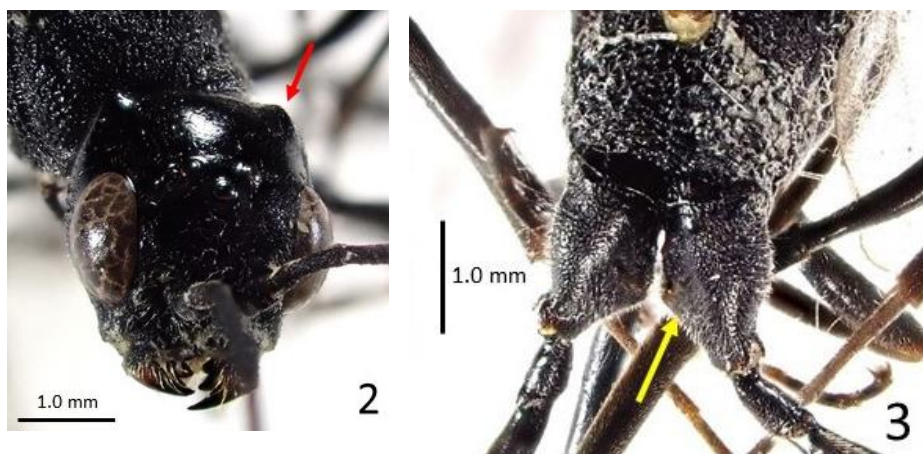
Distribution. North-eastern Laos (Hua Phan Province), Central Vietnam (Thua Thien-Hue Province).

Biology. Based on data from collection, the adults fly from the end of April to the end of May. Nothing is known about the host and the host plant.

Remarks. *Aulacus ceciliae* was described from Laos (Hua Phan Province), and the type series includes 9♀, 1♂ (examined and compared with the Vietnamese specimen). The present record is the first from Vietnam and extends significantly the known range in the Oriental Region. This species is readily recognized among the other Oriental *Aulacus* by the colour pattern (Figs 1-5), the presence of two symmetric tooth-like processes on the top of the head and the oblique hind coxal groove (TURRISI, 2013). *Aulacus ceciliae* is undoubtedly allied to *A. bituberculatus* Cameron, 1899, both sharing the presence of two tooth-like processes on the vertex, and the shape of the hind coxal groove. It is immediately distinguished from the latter by the colour pattern being almost entirely black (Fig. 1) (*A. bituberculatus*: mandible and antenna, pronotum, mesoscutum, most of scutellum and most of legs reddish to reddish orange, spots of fore wing light brown); antennomere 4 elongate, about $7.0 \times$ longer than wide (*A. bituberculatus*: stout, $5.0 \times$ longer than wide); petiole slender, elongate, $4.0 \times$ longer than wide (Figs 1, 4) (*A. bituberculatus*: stout, $2.3 \times$ longer than wide); ovipositor $1.0\text{-}1.1 \times$ fore wing length (*A. bituberculatus*: about $1.3 \times$ longer than fore wing length).

There are only seven species of *Aulacus* in the Oriental Region, a very low number compared with the huge diversity of *Pristaulacus* in the same area, and that of *Aulacus* in the Australasian region (JENNINGS *et al.*, 2018); the reason for such a paucity of *Aulacus* species in the Oriental is not known. The known species of *Aulacus* in the Oriental Region are mostly recently described and from the type locality only: *A. bituberculatus* Cameron, 1899 from India (Meghalaya); *A. canlaon* Smith, 2017 from The Philippines; *A. ceciliae* Turrisi, 2013 from Laos and Vietnam; *A. magnus* Chen, Turrisi & Xu, 2016 from China; *A. philippinensis* (Kieffer, 1916) from The Philippines; *Aulacus sahyadriensis* Girish Kumar, Smith & Binoy, 2019 from India; *A. sinensis* He & Chen, 2007 from China (CAMERON, 1899; KIEFFER, 1916; HE *et al.*, 2002; TURRISI, 2013; CHEN *et al.*, 2016; SMITH, 2017; GIRISH KUMAR *et al.*, 2019: Fig. 11 for a summary).

It is noteworthy that the presence in *Aulacus* of two tooth-like processes on the vertex of the head is restricted to only two Oriental species: *A. bituberculatus* and *A. ceciliae*; curiously, a very similar feature also occurs in *Pristaulacus tuberculiceps* Turner, 1919, described from Laos (TURRISI, 2013), clearly as a convergent character. Armed head and mesosoma (the latter with more or less strong carinae and dentiform processes on pronotum) have been correlated with the endoxylic lifestyle of the imago, which has to escape from the wood after completing the development within the host larva. To this regard, the head is believed to play a relevant role during the emergence from the wood, cutting and, by cooperating with the mesosoma, removing the debris (TURRISI & VILHELMSSEN, 2010; VILHELMSSEN & TURRISI, 2011).



Figs. 2-3 - *Aulacus ceciliae* Turrisi, 2013 ♀ from Vietnam (MZUF) - 2, head, frontal view; red arrow indicates the tooth-like process on the vertex of the head - 3, hind coxae, ventral view; yellow arrow indicates the coxal guide.

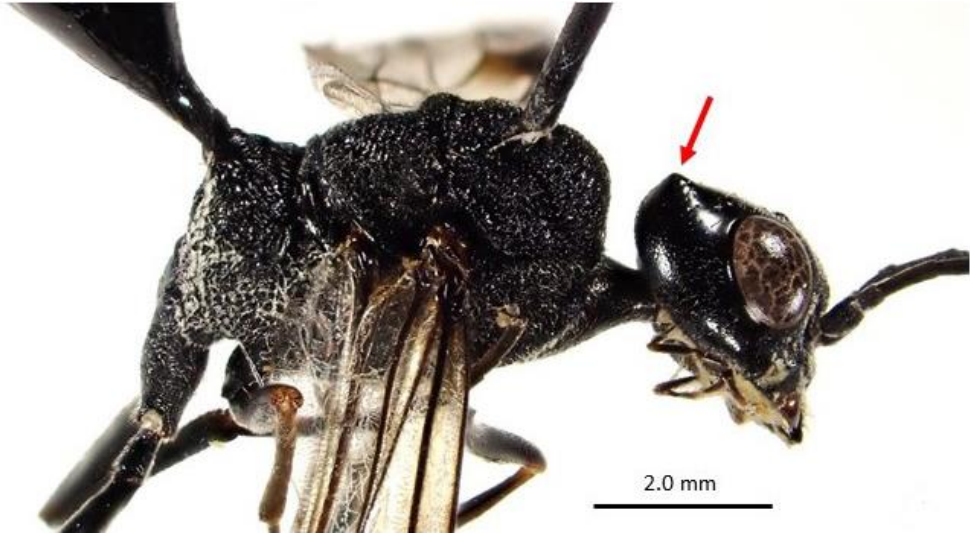


Fig. 4 - *Aulacus ceciliae* Turrisi, 2013 ♀ from Vietnam (MZUF). Head, mesosoma and petiole, lateral view. Red arrow indicates the tooth-like process on the vertex of the head.



Fig. 5 - *Aulacus ceciliae* Turrisi, 2013 ♀ from Vietnam (MZUF), left wings.

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