Combivena gen.n (Hymenoptera: Ichneumonidae: Acaenitinae) from China

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Materials and Methods

The only known specimen of the new species was collected with intercept trap (Li et al. 2012) in the forest of Beishan Forestry Farm, Huzhu County, Qinghai Province, China. The forest consisted of mixed deciduous angiosperms and evergreen conifers, mainly comprisingBetula platyphylla Sukatschev, Picea wilsonii Masters,Pinus tabuliformisCarrière,Sabina przewalskii(Komarov)W.C.Cheng & L.K.Fu,Salixsp.,Ribes sp.,Sorbus sp.,Cotoneaster sp., andPhiladelphus sp.

Images of whole bodies were taken using a CANON PowerShot A650 IS (www.web.canon.jp). Other images were taken using a Cool SNAP 3 CCD (www.photomet.com) attached to a Zeiss Discovery V8 Stereomicroscope (www.zeiss.de) and captured with QCapture Pro version 5.1 (www.QIMAGING.COM). Morphological terminology is mostly based on Gauld (1991). Wing vein nomenclature followsMason (1986, 1990).

Subfamily Acaenitinae belonging to the family Ichneumonidae (Hymenoptera) has been traditionally classified into two tribes, the Acaenitini and Coleoctenini (Towmes 1971; He et al. 1996; Yu et al. 2005; Lee and Lee 2009; Sheng and Sun 2009, 2010a, b; 2013; Yu et al. 2012). Wahl and Gauld (1998) suggested that “use of the two tribes be discontinued.” Castillo et al. (2011) followed the opinion of Wahl and Gauld.

Acaenitinae comprises 27 genera (Yu et al. 2012). Seventeen genera have been reported in China (Sheng 2002; Sheng and Sun 2009, 2010b; Yu et al. 2012), of which two genera, CumatocinetusSheng2002,Dentiferumasheng and Sun (2010b), were reported by the authors. The subfamily was reported for the first time from South America by Castillo et al. (2011).

The distinctive feature of Acaenitinae is the female: very large subgenital plate, triangular in lateral view, and the apex surpassing metastomal apex. The status of the genera was elucidated by Sheng and Sun (2010a) and Towmes (1971).

The hosts of Acaenitinae mainly are woodborers (Sheng and Sun 2009, 2010a, b; Yu et al. 2012). Shaw and Wahl (1989) reported that Acaeninus dubitator (Panzer) is a koinobiont endoparasitoid of the larva of an endophytic beetle, Cleonis piger (Scopoli) (Curculionidae). Zejaroteslevisheng1999parasitizingCaricila sp. (Curculionidae) was discovered while the trunks ofQuercus wutaishanicaBlume were dissected in Xinbin County, Liaoning Province, China.

In this article, one new genus and its type species, collected in Huzhu County, Qinghai Province, China, are described.

Type specimens are deposited in the Insect Museum, General Station of Forest Pest Management, State Forestry Administration, Shenyang, People’s Republic of China.

Nomenclature. This article and the nomenclature it contains have been registered in ZooBank (www.zoobank.org). This LSID number is urn:lsid:zoobank.org:pub:7E0DB228-FFB7-4105-A80F-E602695A9BDC.

Description.

Combivena Sheng & Sun, gen.n.

Diagnosis. Fore wing length ~10 mm. Clypeus without subapical transverse ridge, apical half flat, apical margin thin, and even arched forward. Labrum crescentic. Mandible strongly narrowed toward apex, and lower tooth evidently longer than upper tooth. Cheek with subocular sulcus. Malar space longer than basal width of mandible. Gena distinctly swollen. Frons with median longitudinal carina. Occipital carina complete, medially evenly arched upward. Anterior portion of mesoscutum almost vertical and median lobe with median longitudinal groove. Notaulus very strong, reaching beyond center of mesoscutum. Lower-posterior portion of mesopleuron convex, ridge shaped. Mesosternum (Fig. 6) with wide median longitudinal groove. Arolet absent. Vein 2rs-m disappeared. Rs combined with M far distal of 2m-cu. 2m-cu with one bulla. Apical edge of fore tibia with a distinct tooth at outer side. All tarsal claws with a median tooth on mesal side. Propodeum completely areolate, separated dorsal, and posterior surfaces by posterior transverse carina. First tergum (Fig. 10) evenly narrow toward base. First sternite reaching 0.4 distance from base to spiracle, subbase evenly convex, and without hair. Ovipositor compressed, without nodus, apical portion of ventral valve with weak longitudinal ridges.

Type species. Combivena sulcataSheng & Sun, sp.n.

Distribution. There is a single Chinese species, described in the Description.

Etymology. The name of the new genus is based on the combination of fore wing vein rs+RS and M. The gender is feminine.

Remarks. Combivena may be separated from all other genera of the Acaenitinae by the combination of the following characters: 1) Clypeus without preapical transverse ridge and apicomedian tooth, 2) fore wing with vein 2rs-m disappeared, 3) fore wing 2mcu with one bulla, 4) all tarsal claws with an acute accessory tooth, and 5) premedian swollen part of the first sternite smooth, without hair. It is quite similar to ArotesGravenhorst1829but can be distinguished from the latter by: apical portion of clypeus flat or slightly concave, without preapical transverse ridge; area superomedia approximately as long as wide; apex of front tibia with a strong tooth (Fig. 9); fore wing vein 2rs-m obliterated by combination of rs+RS and M (Fig. 8); 2m-cu with one bulla; and mesosternum with broad median longitudinal groove (Fig. 6).
clypeus with preapical transverse ridge; area superomedia longer than wide; apex of front tibia without tooth; fore wing vein 2rs-m distal of 2m-cu by 0.3–0.8 its length; 2m-cu with two bullae; and mesosternum normal, without broad median longitudinal groove. *Combivena sulcata* Sheng & Sun, sp.n. (Figs. 1–11).

**Etymology.** The name of the new species is based on the median longitudinal groove of mesosternum.

**Type Material.** Holotype, female, China: Beishan Forest Farm, 2,366 m, Huzhu County, Qinghai Province, 7 June 2010, leg. Mao-Ling Sheng.

**Description.** Female. Body length 11.0 mm. Fore wing length 10.0 mm. Ovipositor sheath length 4.5 mm.

**Head.** Face 1.5 as wide as long, with dense punctures (Fig. 2), a “U-shaped” depression from lateral portion of antennal sockets to lower median portion of face; in “U-shaped” depression rough, with indistinct punctures; upper-lateral portions below antennal sockets and lower lateral portions above clypeal foveae with short, indistinct, transverse wrinkles. Upper lateral margin between antennal socket and eye deeply, longitudinally concave. Clypeal foveae small, almost circular, closed. Clypeus with subbasal transverse ridge, between ridge and clypeal suture densely, indistinctly punctate, nearly smooth between ridge and median portion; apical half smooth and shining, slightly rough near apical margin; and apical margin thin, even arched forward. Labrum crescentic 0.4 as long as wide, with short, brown hairs. Mandible with distinct longitudinal lines; lower tooth 2.2 as long as upper tooth. Cheek with texture as that of face, with weak subocular sulcus. Malar space 1.2 as long as basal width of mandible. Gena almost shining, in lateral view 1.2 as long as width of eye, with dense, distinct punctures, distance between punctures 0.2–2.5 diameter of puncture. Vertex (Fig. 3) with dense elongate punctures, denser than that of face. Lateral margin of lateral ocellus concave. Postero-ocellar line 0.7 as long as ocellar transverse wrinkles; lateral margin more convex, with indistinct fine punctures. Antenna 7.5 mm, with 27 flagellomeres; apical truncations of basal nine flagellomeres sloping. Ratio of length of flagellomere 1:2:3:4:5 is 6.0:4.0:3.7:3.5:3.4. Occipital carina medially evenly arched upward.

**Mesosoma.** Pronotum with dense, distinct, sloping wrinkles; anterior and upper-posterior margins with dense indistinct punctures. Epipterygite short, laying aboard upper margin of pronotum. Propodeum with dense transverse wrinkles. Mesoscutum (Fig. 4) with dense punctures, distance between punctures 0.2 and 0.5 diameter of puncture; median portion of posterior 1/3 with irregular wrinkles. Notaulus very strong, reaching to posterior 1/3 of mesoscutum. Hind margin of mesoscutum almost vertical. Scutoscutellar groove with oblique wrinkles and a median longitudinal ridge. Scutellum with dense punctures, sub-posterior portion more convex. Postscutellum smooth, shining, lateral margin with fine, indistinct punctures, posterior portion evenly oblique, anterior-lateral portion deeply concave. Upper-anterior portion of mesopleuron (Fig. 8) with distinct punctures, lower portion rough, with irregular punctures, punctures in the middle strongly coalescent appearing to be ruguloso-punctate; below subalar prominence with short longitudinal wrinkles; in front of speculum with oblique transverse wrinkles, below speculum with longitudinal wrinkles. Speculum shining, with fine transverse lines. Upper end of epicnemial carina approximately reaching level of 3/5 of front margin of mesopleuron, comparatively far distant from front margin. Mesosternum (Fig. 6) indistinctly punctate, submedian portion longitudinally convex. Metapleuron rough, with irregular reticulate wrinkles. Without
help while the authors were working in NHM and ZSM. We also wish to thank Dr. Dicky S.K. Yu (Canadian National Collection, Ottawa, Canada) for presenting valuable materials. This research was supported by the National Natural Science Foundation of China (NSFC, No. 31070585; NSFC, No. 31310103033).

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