

Description of a new species in the genus *Ceromasia* Rondani (Diptera: Tachinidae) from northern China

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Abstract: A new tachinid fly species of the tribe Goniini, Exoristinae (Diptera: Tachinidae), *Ceromasia wangi* **sp. nov.**, is described and illustrated on specimens collected from Inner Mongolia and Shanxi in China. Figures showing characteristics distinguishing *C. wangi* **sp. nov.** from the closely related species *C. rubrifrons* are included. Identifying characteristics and a key to species in the genus *Ceromasia* are presented.

Key words: tachinid fly; Goniini; taxonomy; key; NE Asia

中国瑟寄蝇属 *Ceromasia* 一新种记述 (双翅目: 寄蝇科)

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摘要: 记述来自中国内蒙古和山西的追寄蝇亚科膝芒寄蝇族 1 新种 (双翅目: 寄蝇科): 王氏瑟寄蝇 *Ceromasia wangi* **sp. nov.**; 提供了新种与近缘种的形态描述和特征图; 给出了瑟寄蝇属的鉴别特征, 并编制了该属中国种类检索表。

关键词: 寄蝇; 膝芒寄蝇族; 分类; 检索表; 东北亚

Introduction

Ceromasia Rondani (Diptera: Tachinidae) is a small genus (including three known species) of the tribe Goniini in Exoristinae distributed in Palaearctic and Nearctic regions (O'Hara & Henderson 2020). It was firstly erected by Rondani (1856) as a subgenus of *Masicera* Macquart, 1834 firstly, and Brauer (1893) subsequently designated the type species *Masicera florum* Macquart, 1850 (= *Phorcera rubrifrons* Macquart, 1834). Coquillett (1897) recognized the genus as valid, but Curran (1927) treated it as a synonym of *Erycia* Robineau-Desvoidy, 1830. Townsend (1941) recognized the genus as valid and redescribed it. This genus is currently known from three described species in the world (O'Hara & Wood 2004; O'Hara *et al.* 2009, 2020; Cerretti 2010; Zhang *et al.* 2016). Herein, a new species is described from Inner Mongolia and Shanxi in China.

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Material and methods

Terminology for morphology used in the descriptions follows Cumming & Wood (2017) and measurements follow Tschorsnig and Richter (1998). Dissection of male terminalia and citation of label data follow the methods described in detail by O'Hara (2002). The terminalia of each dissected male are preserved in glycerine in a small plastic vial pinned together with the source specimen.

Consecutive digital images of adults were taken with a Canon 60D digital camera attached to an Olympus SZX7 stereo microscope. Genitalia photos were taken with a Canon EOS 5D Mark III digital camera attached to ZEISS Stemi 2000-c stereo microscope. The images were blended with Helicon Focus® (ver. 6. 10) and retouched in Adobe Photoshop CC®.

The holotype and other examined specimens were deposited in the Collection of Shenyang Normal University, Shenyang, Liaoning, China (SYNU).

Taxonomy

Genus *Ceromasia* Rondani, 1856

Ceromasia Rondani, 1856: 71 (as subgenus of *Masicera* Macquart, 1834). Type species: *Masicera florum* Macquart, 1850 (= *Phorocera rubrifrons* Macquart, 1834), by subsequent designation of Brauer (1893a: 476) (see O'Hara *et al.* 2011: 50) [France].

Synonyms see O'Hara, Henderson & Wood, 2020: 434.

Generic diagnosis. Eyes bare and parafacial bare, at most with hairs on upper half; frons with 2 or 3 reclinate upper frontal setae and additional reclinate setae lateral to frontal setae row; facial ridge at most with recumbent setae on lower 1/4 to 2/3; arista bare. First postsutural supra-alar seta longer than notopleural setae and first postsutural intra-alar seta; scutum with four pairs of postsutural dorsocentral setae; 3 postpronotal setae arranged in a straight line. Wing cell r_{4+5} open or with short petiole; R_{4+5} with several setulae at base; tibiae reddish yellow, preapical anterodorsal seta of fore tibia shorter than preapical dorsal seta; mid tibia with 3–5 anterodorsal setae, hind tibia with 2 or 3 preapical dorsal setae. Mid-dorsal depression of abdominal syntergite 1+2 reaching posterior margin, tergites 3 and 4 each with median discal setae.

Distribution. Nearctic; Palaearctic.

Key to species of *Ceromasia* from the Chinese Mainland

1. Tegula black, scutellum light brown, a pair of apical scutellar setae, legs pale brown except femora brownish black, fore tibia with 6 anterodorsal setae and mid tibia with 4 anterodorsal setae *C. rubrifrons*
- . Tegula orangish yellow, scutellum gray brown, apical scutellar setae absent, legs pale brown, fore tibia with 4 anterodorsal setae and mid tibia with 2 anterodorsal setae *C. wangi* sp. nov.

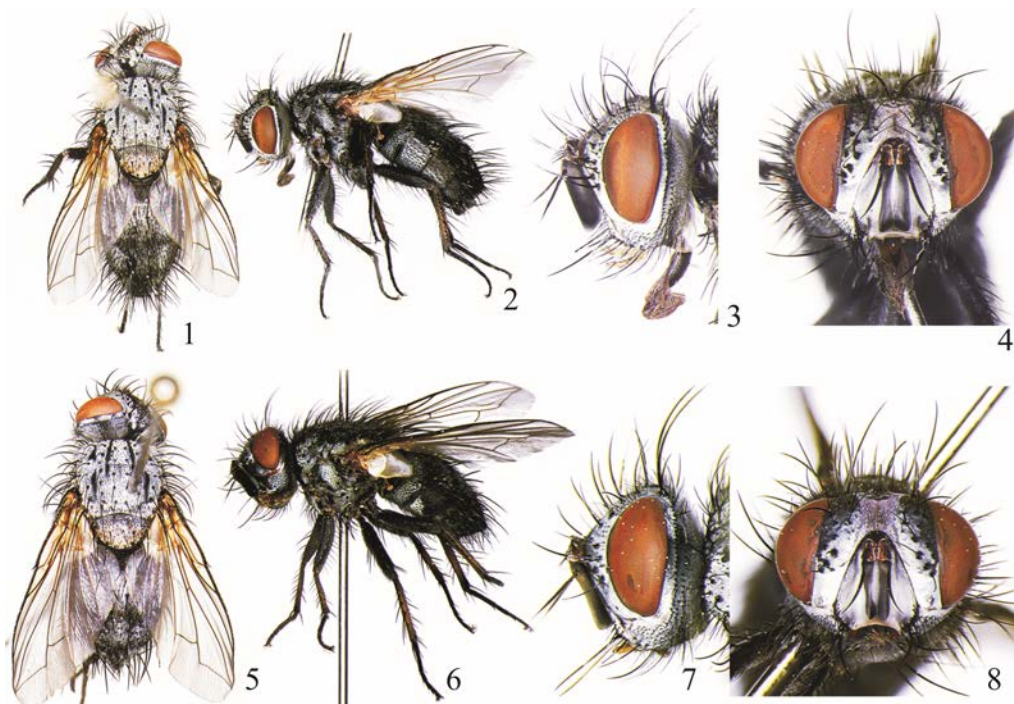
1. *Ceromasia rubrifrons* (Macquart, 1834) (Figs 1–8)

Phorocera rubrifrons Macquart, 1834: 279.

Diagnosis. Frontal vitta reddish brown, fronto-orbital plate, parafacial, gena and occiput brown, antenna black, palpus yellow. Frons of male about 0.5 of head width, parafacial at its narrowest point 1.2–1.3 times as wide as postpedicel in lateral view. Fronto-orbital plate with

two rows of setae, parafacial bare, 2 frontal setae, 1–2 pairs of orbital setae. Facial ridge with 8–9 setae at most on lower 1/4. Occiput with a row of black short setae below postocular setae. Three postpronotal setae nearly arranged in a straight line, 3 presutural and 4 postsutural dorsocentral setae, 3 katepisternal setae, scutellum with slightly erected black setae and a crossed pair of apical scutellar setae, katepimeron bare. Tegula black, basicosta orangish yellow, costal spine developed, bend of vein M obtuse, the distance between the band and wing margin about 1.7 times the length of vein M from crossvein dM-Cu to its bend. Legs pale reddish yellow except for the brownish black femora, fore tibia with 6 anterodorsal setae, mid tibia with 4 anterodorsal setae. Abdominal tergite 3–5 entirely covered with silver white pruinosity. Male terminalia slightly sclerotized; cerci long and narrow in lateral view, with thick hairs; surstylus slender in lateral view, with some fine hairs. Epandrium triangular.

Specimens examined. **China**, Liaoning, 1♂, Benxi, Xinling, 03-VI-1964, other information unknown; Shanxi, 3♂, Yushe, Cangshan, 23-VI-1999, Mingfu WANG; Ningxia, 5♂1♀, Jingyuan, Qiuqianjiaforestry centre, 1800 m, 04-VII-2008, Jiayu LIU & Zhiyuan YAO; 1♂1♀, Jingyuan, Hongxia forestrycentre, 2100 m, 14-VII-2008, Jiayu LIU & Zhiyuan YAO; 2♂, Jingyuan, Tawan Village, 1700–1800 m, 02-VII-2008, Jiayu LIU & Zhiyuan YAO; 1♂, Longyang, Guamagou forestry centre, 2200 m, 05-VII-2008, Jiayu LIU; 1♀, Longde, Sutai forestry centre, 2140–3200 m, 25–26-VI-2008, Jiayu LIU; 1♂, Jingyuan, Laolongtan forestry centre, 2100 m, 10-VII-2008, Jiayu LIU (SYNU). **France**, 1♂, H.-Alpes, Val Biaysse, les Mensals, 11-VIII-1998, leg. Tschorsnig (SMNS). **Spain**, 1♀, Prov. Salamanca Villar de Ciervo, P. Quebrada, 30-V-1999, leg. Tschorsnig (SMNS).



Figures 1–8. *Ceromasia rubrifrons* (Macquart, 1834). 1–4. Male. 5–8. Female. 1, 5. Body, dorsal views; 2, 6. Body, lateral views; 3, 7. Head, lateral views; 4, 8. Head, anterior views.

Distribution. China (Heilongjiang, Liaoning, Beijing, Shanxi, Ningxia); Japan; Russia; Mongolia; Uzbekistan; Israel; Morocco; Europe; Transcaucasia.

2. *Ceromasia wangi* sp. nov. (Figs 9–15)

Male. Body length: 5.0–6.0 mm. Head pale brown in ground color, covered with gray white pruinosity. Eyes bare. Frontal vitta brown, fronto-orbital plate dark brown, covered with sparsely grayish white pruinosity. Parafacial and gena pale brown, covered with grayish white pruinosity. Lunule brown. Occiput brown or brownish black, covered with grayish white pruinosity. Antenna brownish black, palpi pale yellow. Prementum gleaming black, labella brownish yellow. Frons 0.4–0.5 head width, frontal vitta 1.6–1.7 times as wide as fronto-orbital plate at middle, parafacial at narrowest point about as wide as postpedicel in lateral view, gena height about 0.5 of eye height. 5 pairs of frontal setae crossed, ocellar setae situated between anterior and posterior ocelli, proclinate and outward, the distance between ocellar setae slightly shorter than the distance between postocellar, about 0.5 times as long as inner vertical seta, a pair of postocellar setae, shorter than ocellar setae, about 0.4 times as long as ocellar seta, inner vertical seta about as long as eye height, outer vertical seta about 0.4 times as long as inner vertical seta, ocellar triangle with black hairs, fronto-orbital plate with two rows of long hairs, parafacial bare, two pairs of frontal setae, two pairs of orbital setae, facial ridge with 5–10 setae at least on lower 1/2–2/3. Vibrissa strong, situated at level of lower margin of face, slightly shorter than facial ridge length, with 1–2 subvibrissal setae on lower half. Antenna with postpedicel about 4 times as long as wide, 7.0–8.0 times as long as pedicel, pedicel with setae, the lowest one long and strong, arista brown, slightly longer than postpedicel, arista thickened on basal 1/2, prementum about 1.5 times as long as wide, with short hairs, palpus shorter than postpedicel.

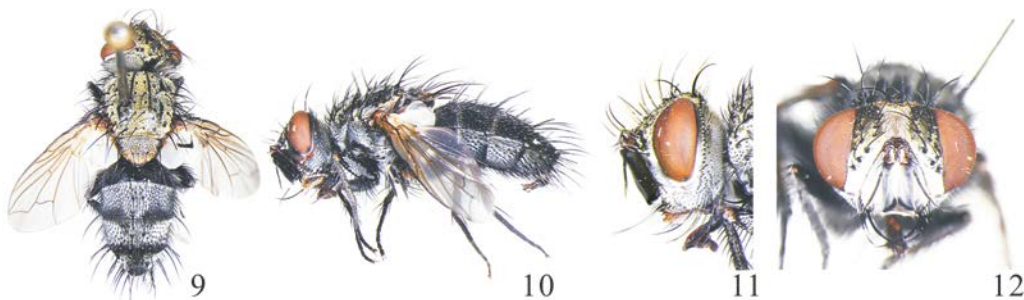
Thorax dark brown in ground colour, with sparsely grayish white pruinosity, dorsum with 4 narrow dark longitudinal vittae, inner vitta about as wide as pruinose portion between inner and outer vittae, scutellum brown, with sparsely grayish white pruinosity, dorsum with reciliate black short hairs. Three postpronotal setae nearly arranged in a line, 3 presutural and 3 postsutural acrostichal setae, 3 presutural and 4 postsutural dorsocentral setae, 1 presutural and 3 postsutural intra-alar setae, 3 supra-alar setae, 1st postsutural supra-alar seta 1.4–1.5 times as long as notopleural seta, 3 katapisternal setae; scutellum with three pairs of marginal setae and a pair of discal setae which as long as scutellum, apical scutellar seta absent, subapical scutellar setae crossed near apex, 2.3–2.4 times as long as scutellum, lateral scutellar setae 1.3–1.4 times as long as scutellum, basal scutellar setae, 1.5–1.6 times as long as scutellum. prosternum hairy, proepisternum and katepimeron bare.

Wing hyaline, tegula and basicosta orangish yellow, lower calypter pale yellow, halter pale brown. Costal spine well-developed, slightly shorter than crossvein R-M, relative length of costal sectors 2nd, 3rd and 4th nearly as 2: 3: 2. Cell r_{4+5} open. Bend of vein M obtuse, the distance between the bend and wing margin about 1.5 times the length of vein M from crossvein dM-Cu to its bend.

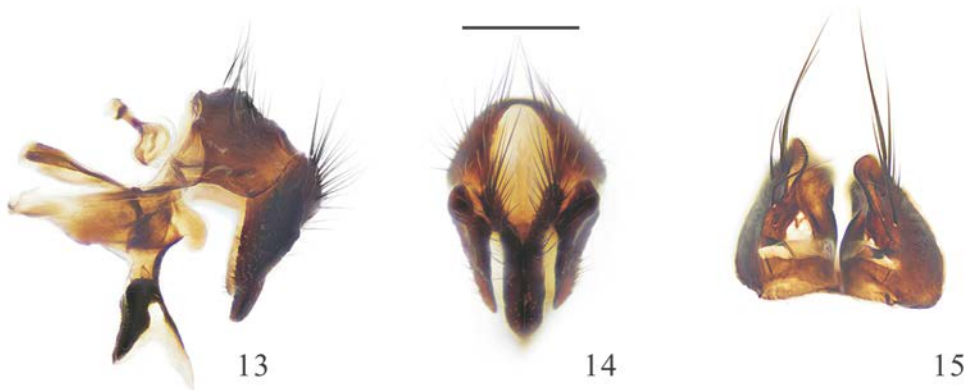
Legs yellow, pulvilli pale yellow, legs hairs black, fore pulvillus slightly shorter than fore tarsomere 5, fore tibia with 4 anterodorsal, 5 posterodorsal setae and 1 posterior seta, mid tibia with 2 anterodorsal, 4 posterodorsal setae, 1 posterior and 1 ventral seta, hind tibia with 4 anterodorsal, 2 posterodorsal setae and 1 ventral seta.

Abdomen broad ovate, brown in ground colour, with reclinate black hairs. 3/5 of tergite 3, 3/4 of tergite 4 and tergite 5 covered with grayish white pruinosity, mid-dorsal depression on syntergite 1+2 reaching posterior margin. Syntergite 1+2 with 2 median marginal and a pair of lateral marginal setae, tergite 3 with 1–2 pairs of middle discal setae, 2 median marginal and a pair of lateral marginal setae, tergite 4 with 2 median discal setae and a row of marginal setae, tergite 5 with a row of marginal setae. Sternite 5 nearly triangular, with long setae on outer lateral lobe, V-shaped median cleft narrow and deep.

Male terminalia (Figs 13–15). In caudal view, cerci broad with long and strong setae at basal half, narrowed and blunt apically; surstylus strongly narrowed and pointed apically. In lateral view, cerci long, surstylus slightly short and its apex slightly bent ventrally. Shapes of epandrium, aedeagal apodeme, hypandrium, phallus, pregonite and postgonite as shown in figures.



Figures 9–12. *Ceromasia wangi* Hou, Yang & Zhang **sp. nov.**, ♂. 9. Body, dorsal views; 10. Body, lateral views; 11. Head, lateral views; 12. Head, anterior views.



Figures 13–15. *Ceromasia wangi* Hou, Yang & Zhang **sp. nov.** 13. Cerci, surstylus, epandrium, aedeagal apodeme, hypandrium, phallus, pregonite and postgonite, later view; 14. Cerci, surstylus and epandrium, posterior view. 15. Sternite 5. Scale bar = 0.5 mm.

Female. Unknown.

Holotype. ♂, China, Shanxi, Yushe, Cangshan, 23-VI-1999, Mingfu WANG (SYNU).

Paratypes. 1♂, Shanxi, Yushe, Cangshan, 23-VI-1999, Mingfu WANG (SYNU). 1♂, Inner

Mongolia, Hinggan League, Arxan, Mt. White Wolf, 1200–1400 m, 26-VII-2007, Zhiyuan YAO (SYNU).

Etymology. The species is named after the collector Prof. Mingfu WANG in honor of his taxonomic contribution to Calyptratae of China.

Diagnosis. Frontal vitta brown, antenna dark brown, palpus yellowish. Frons about 0.4–0.5 of head width, parafacial at its narrowest point about as wide as postpedicel in lateral view. Postpedicel 7–8 times as long as pedicel. Tegula and basicosta orangish yellow, costal spine well-developed. Legs yellow, pulvillus pale yellow, fore pulvillus slightly shorter than fore tarsomere 5, fore tibia with 4 anterodorsal setae, mid tibia with 2 anterodorsal setae. Abdomen brown, tergite 3 with 1–2 pairs of median discal setae. Male terminalia strongly sclerotized.

Remarks. This new species is closely similar to *Ceromasia rubrifrons* (Macquart), but is distinguished from the latter having orangish yellow tegula, scutellum brownish yellow, covered grayish pruinosity, apical scutellar seta absent, legs yellow, fore tibia with 4 anterodorsal setae and mid tibia with 2 anterodorsal setae.

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