

A review of the genus *Megarhyssa* (Hymenoptera: Ichneumonidae: Rhyssinae) from Vietnam, with three new country records

Ghi nhận mới 3 loài thuộc giống ong cụt Megarhyssa (Hymenoptera: Ichneumonidae: Rhyssinae) cho khu hệ côn trùng Việt Nam

Short communication

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The genus *Megarhyssa* (Hymenoptera: Ichneumonidae: Rhyssinae) is reviewed from Vietnam for the first time, with three new country records, *M. belluliflava*, *M. jezoensis*, and *M. hainanensis*. In addition, the distribution range of *M. praezellens*, previously reported from Sapa, Lao Cai Province (North Vietnam), is extended to the South. A key to four already known Vietnamese species of this genus is provided with illustrated figures.

Đây là lần đầu tiên giống ong cụt Megarhyssa (Hymenoptera: Ichneumonidae: Rhyssinae) được xem xét về mặt phân loại học ở Việt Nam với ba loài ghi nhận mới cho khu hệ côn trùng trong nước bao gồm M. belluliflava, M. jezoensis và M. hainanensis. Thêm vào đó, loài M. praezellens vốn trước đây được ghi nhận tại Sapa, tỉnh Lào Cai (Bắc Việt Nam), nay được ghi nhận lần đầu tại khu vực Tây Nguyên. Bài báo cũng đưa ra khóa định loại có hình minh họa bốn loài đã biết thuộc giống Megarhyssa ở Việt Nam

Keywords: *Afrephialtes*, *Ephialtini*, taxonomy

1. Introduction

Megarhyssa is a relatively large genus of the subfamily Rhyssinae with 37 currently known species from all over the world [3], [8]. In Australian, Palaearctic and Nearctic regions, some *Megarhyssa* species, viz. *M. emarginatoria*, *M. jezoensis*, *M. nortoni* were well known as specialised parasitoids of woodwasps (Hymenoptera: Siricidae) [4], [7]. Representatives of *Megarhyssa* can be recognized from other Rhyssinae by combination of the following characters: Fore wing with vein *3rs-m* present; gonoforceps in males with strong setiferous groove close to and paralleling apical 0.7 of ventral inner edge; female metasomal tergites 3–5 smooth to punctuate, not extensively transversely aciculate, sternite 2–4 each with a pair of tubercles near anterior margin. In Vietnam, one species, *Megarhyssa praezellens* (Tosquinet) has been known [2], [5]. On the basis of recent Ichneumonid collection deposited at the Institute of Ecology and Biological Resources (IEBR), Hanoi, Vietnam, this genus is reviewed for the first time, with records of three species new for the coun-

try. A key to four *Megarhyssa* species from Vietnam is provided.

2. Materials and methods

Specimens were collected by hand net, Malaise trap and sweeping from 2002–2016. The morphological terminology follows Gauld (1991) [1].

Figures 1a-d were taken by Digital Camera Ricoh WG-4 GPS. Figures 1e-h were taken with a Leica IC80HD camera attached to Leica M80 stereomicroscope. Scale bars indicate 1 mm, except 0.5 mm in figures 1e and 1f.

Other collections referred to in this paper are the Hokkaido University (EIHU), Sapporo, Hokkaido, Japan and the Institute of Zoology, Chinese Academy of Sciences (IZCAS), Beijing, China.

Some abbreviations used in the paper are: NP (National Park), NR (Nature Reserve).

3. Results

Megarhyssa Ashmead, 1900

Thalessa Holmgren, 1859. Öfvers. Svenska Vetensk. - Akad. Förh. 16: 122. Name preocc. by Adams, 1853. Type: *Ichneumon clavator* Fabricius = *histrion* Christ. Designated by Ashmead.

Megarhyssa Ashmead, 1900. Canad. Ent. 32: 368. New name.

Diagnosis. Clypeus small, transversely rectangular, apical margin with lateral tubercles, median tubercle sometimes present; occipital and hypostomal carinae joining above base of mandible; mandibular teeth subequal in length, lower tooth pointed and upper tooth more or less chisel shaped; mesoscutum mostly covered with transverse rugae; fore wing with areolet, 3*rs-m* opposite or distad of 2*m-cu*; mid trochantellus with a ventral longitudinal ridge; tarsal claw simple, large; tergite 1 without glymma, tergites 3–5 almost smooth to finely and sparsely punctate, not extensively transversely aciculate; female with sternite 2–4 each with a pair of tubercles near anterior margin, and with an apical truncate horn-like process on last tergite; male with metasoma tergite strongly depressed, tergites 3–6 strongly concave apically and with subapical longitudinal submembranous area, gonosquama with a strong setiferous groove close to and paralleling apical 0.7 of ventral inner edge.

Key to Vietnamese *Megarhyssa*

1. Posterior margin of first sternite straight (Fig. 1e); body largely yellow with black marking; wings hyaline with light brown markings (Fig. 1a)*M. belluliflava*
- Posterior margin of first sternite concave medially (Fig. 1f); body largely reddish or blackish with yellow markings; wings yellowish to reddish brown2
2. Wings with dark marking apically more extensive, on fore wing extending at least to level of areolet; mesosoma and propodeum entirely reddish or with yellowish markings on mesoscutum; metasomal tergites largely black with yellow markings (Fig. 1b).....*M. hainanensis*
- Wing with light brown markings narrowly present apically; mesosoma and propodeum with black and/or yellow markings; metasomal tergites reddish with yellow markings.....3
3. Mesosoma with black markings (Fig. 1c); propodeum with longitudinal groove medially; fore wing areolet with stalk about 0.4x as high as areolet's height (Fig. 1h).....*M. jezoensis*
- Mesosoma with yellow markings (Fig. 1d); propodeum without longitudinal groove medially; fore wing areolet with stalk about 0.7x as high as areolet's height (Fig. 1g).....*M. praececellus*

***Megarhyssa belluliflava* Wang & Hu, 1994**

Megarhyssa belluliflava Wang & Hu, 1994. Sinozoologia, 11: 181. Holotype: ♀, China: Yunnan Province (IZCAS). Diagnosis. Lemon yellow with black marks on mesoscutum, basal and apical part of tergites; wings hyaline with brown markings; fore wing vein 3*rs-m* opposite 2*m-cu*.

Material examined. Son La Province, Cópia NR: 1♂ (IEBR), 27.iv–2.v.2016, Malaise trap, Hoang Vu Tru leg. Distribution. Previously known from China: Yunnan Province. This is the first record of this species from Vietnam.

Remarks. The Vietnamese specimen has no infuscated below pterostigma, apical margin of the fore wing is only light brown. Its hind tarsal segments 1–3 are black apically only. Mid femur has a large ventrally black mark at its apex.

***Megarhyssa hainanensis* Wang & Hu, 1994**

Megarhyssa hainanensis Wang & Hu, 1994. Sinozoologia, 11: 189. Holotype: ♀, China: Hainan Province (IZCAS).

Diagnosis. Head, mesosoma thorax, propodeum and wings reddish yellow, metasomal tergite black with white marks; apical margin of wings infuscated; fore wing vein 3*rs-m* distad of 2*m-cu*.

Material examined. Ninh Binh Province, Cuc Phuong NP: 1♀ (IEBR), 8.v.2002, hand net, L.D. Khuat leg.; Thua Thien-Hue Province, Bach Ma NP: 1♀ (IEBR), 12.xi.2002, hand net, T.V. Hoang leg.; Quang Nam Province, Que Son, Que Thuoc: 1♀ (IEBR), 9.iv.2004, hand net, L.T.P. Nguyen leg.; Bac Giang Province, Son Dong, Khe Ro: 1♂ (IEBR), 17.v.2013, hand net, D.D. Tran leg. Distribution. Previously known only from China: Hainan Islands [6]. These are the first records of this species from Vietnam.

Remarks. Vietnamese specimens have entirely white first tergite instead of a white triangular mark posteriorly.

***Megarhyssa jezoensis* (Matsumura, 1912)**

Thalessa jezoensis Matsumura 1912. Supplement IV: 136. Holotype: ♀, Japan: Sapporo in Hokkaido (EIUH).

Diagnosis. Reddish with yellow markings; propodeum with longitudinal groove medially; tergite 2 with two hook-like yellow markings.

Material examined. Lam Dong Province, Bidoup-Nui Ba NP: 1♀ (IEBR), 12.iv.2008, hand net, D.H. Nguyen leg.

Distribution. Previously known from China, Japan, Korea & Russia [8]. This is the first record of this species from Vietnam.

***Megarhyssa praececellens* (Tosquinet, 1889)**

Thalessa praececellens Tosquinet, 1889. Ann. Soc. Ent. Belgique, 33: 134. Holotype: ♀, Russia: Wladiwostok.

Diagnosis. Reddish with yellow marks; fore wing with light brown near areolet and at apex; fore wing vein 3*rs-m* distad of 2*m-cu*.

Material examined. Dak Lak, Ea So NR: 1♀ (IEBR), N12055'93 E108037'964, 27.vi.2008, Malaise trap, H. T. Ngo leg.

Distribution. Previously recorded from Sapa, Lao Cai Province (North Vietnam) [2]. Our current study extends the distribution of this species to the South. Outside Vietnam, this species has been known from China, Korea, Laos, Russia, Taiwan, Vietnam [8].

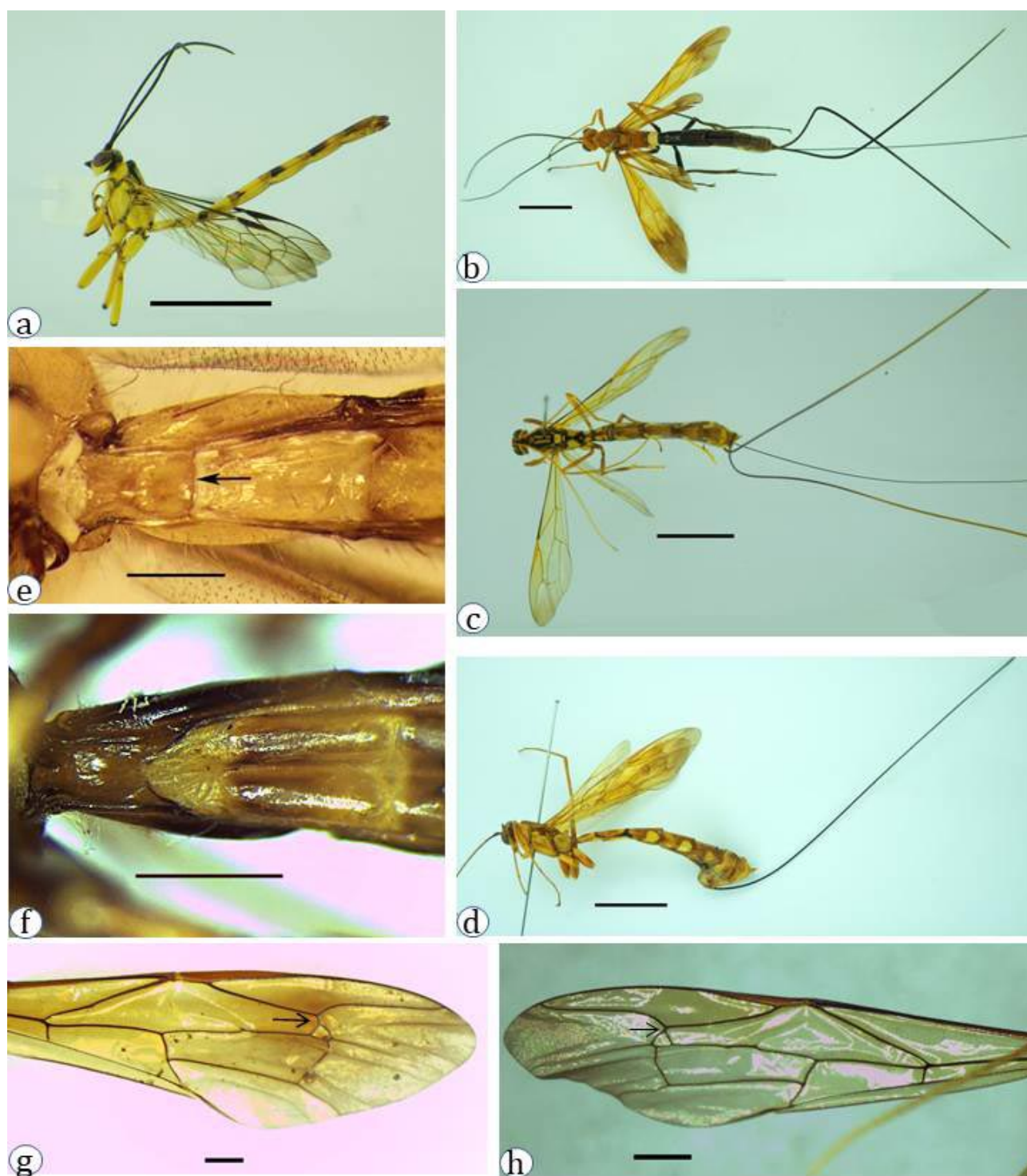


Figure 1. a. lateral view of *Megarhyssa belluliflava* from Son La Province; b. dorsal view of *M. hainanensis* from Ninh Binh Province; c. dorsal view of *M. jezoensis* from Lam Dong Province; d. lateral view of *M. praececellens* from Dak Lak Province; e. first sternite of *M. belluliflava*; f. first sternite of *M. jezoensis*; g. fore wing of *M. praececellens*; h. fore wing of *M. jezoensis*.

4. Conclusion

Among 37 *Megarhyssa* species all over the world, nearly half of them (18 species) have been recorded from the Oriental region. In China, no less than 14 *Megarhyssa* species are known, most of which are currently known only from their type localities. Of the three newly recorded species of this genus from Vietnam, *Megarhyssa belluliflava* and *M. hainanensis* previously known only from

China, Yunnan Province and Hainan Island, respectively. It is the first time, the two species are reported outside China. While the species *M. belluliflava* has known from Son La Province, Northwest Vietnam, *M. hainanensis* is recorded widely from Northeast to Central Vietnam. Other two Vietnamese species, *M. jezoensis* and *M. praececellens*, especially the latter species were previously known widely in the Oriental region to the Eastern Palaearctics.

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