NEW RECORD OF THE GENUS *Brulleia* Szépligeti, 1904 (Hymenoptera: Braconidae: Brachistinae), WITH DESCRIPTION OF THREE NEW SPECIES FROM VIETNAM

Khuat Dang Long*, Dang Thi Hoa, Cao Thi Quynh Nga

Institute of Ecology & Biological Resources (IEBR), VAST

ABSTRACT

The genus *Brulleia* Szépligeti, 1904 is recorded for the first time in Vietnam, three new species, namely *Brulleia flavosoma* Long, sp. n.; *B. mellicrus* Long, sp. n. and *B. nigrisoma* Long, sp. n., are described and illustrated. A key to *Brulleia* species from the Oriental region is provided. The checklist of the already known species of the genus *Brulleia* is also given.


**INTRODUCTION**

*Brulleia* Szépligeti, 1904 is a medium-sized genus of the subtribe Brulleiina (Hymenoptera, Braconidae, Brachistinae, Brulleiini) [Sharanowski et al. 2011, Yan et al. 2017, Chen & van Achterberg 2019 (in. lit.)]. Up to date, the genus *Brulleia* comprises twenty two valid species, of which three are recorded from Australasian, four species from the Eastern Palaearctic, and sixteen species from the Oriental regions (Yu et al., 2016). So far, only one species, *Brulleia obereae* Chen & van Achterberg, 1993 has been reared; it was reported as parasitoid of larvae of *Oberea* sp. (Coleoptera, Cerambycidae) (Chen et al., 1993).

In the previous paper published by Khuat Dang Long & Belokobylskij (2003), only three species included in the subfamily Helconinae s.l., viz. *Helcon rugodorsalis* (Turner, 1919), *Helconidea unicornis* (Turner, 1918) and *Parabrulleia shibuensis* (Matsumura, 1912) were reported from Vietnam’s fauna, and in this paper part of the discoveries dealt with three new species of *Brulleia* from Vietnam are described and illustrated.

**MATERIALS AND METHODS**

Specimens studied are deposited in the Braconidae Collection of the Institute of Ecology & Biological Resources (IEBR) at Ha Noi, Vietnam. All the types (holotypes) are kept in IEBR. Terminology used in this paper follows van Achterberg (1993), sculpture terms are based on Harris (1979), and vein terminology follows the modified Comstock-Needham system (van Achterberg, 1993). For a key to genera of the subtribe Brulleiina see Chen et al. (1993); for additional references and data, see Yu et al. (2016). For virtually all species we used an Olympus® SZ61 binocular microscope; key to species and description of species are based on female; the measurement was carried out using an Olympus® SZ40.
binocular microscope; the photographs were made with a Sony® DSC-WX500 digital camera attached to an Olympus® SZ61 binocular microscope at IEBR. Abbreviations used in this paper are as follows: POL=postocellar line; OOL=ocular-ocellar line; OD=diameter of posterior ocellus; MT: Malaise trap; ‘Hel.+number’: code number indexing for specimens of the Helconinae in the collection at IEBR. NC: North Central, NE.: Northeast, NP: National Park. AMNH stands for American Museum of Natural History, and VAST stands for the Vietnam Academy of Science and Technology.

RESULTS AND DISCUSSION

SYSTEMATICS

**Brulleia Szépligeti, 1904**


Type species. *Brulleia melanocephala* Szépligeti, 1904.

**Diagnostic characters.** Mandibles evenly curved (Figs. 3, 14, 25); maxillary and labial palpi with 2–5 and 2–3 segments, respectively; face densely reticulate-rugose (Figs. 14, 25); clypeus more or less convex or medially depressed (Figs. 3, 14, 25); occipital carina arched medio-dorsally (Fig. 2) or sometimes reduced medio-dorsally; vertex usually with longitudinal groove (Figs. 2, 13, 24); frons weakly concave medially or nearly flat (Fig. 2); length of hind tibia 1.6–2.0 × hind femur; second metasomal tergite usually smooth (Figs. 9, 30), rarely finely sculptured latero-basally (Fig. 18).

**Host.** Larvae of the Cerambycidae

**Distribution.** Australasian, East Palaearctic and Oriental regions

**Checklist and distribution of Brulleia Szépligeti in alphabetical order**

*Brulleia auripes* Chen & He, 1993. Oriental: China

*Brulleia brunnea* van Achterberg, 983. Oriental: Indonesia

*Brulleia chankaica* Belokobylskij, 1996. Eastern Palaearctic: Russia

*Brulleia chaoi* Chen & He, 1993. Oriental: China

*Brulleia fanjingensis* Yan & Chen, 2013. Oriental: China

*Brulleia flavibasalis* He & Chen, 1993. Oriental: China

*Brulleia flavosoma* Long, sp. n.. Oriental: Vietnam

*Brulleia latiannullata* (Cameron, 1911). Australasian, Oriental: Indonesia, Papua New Guinea

*Brulleia longipalpis* Yan & Chen, 2013. Oriental: China

*Brulleia luteus* He & Chen, 1993. Oriental: China

*Brulleia melanocephala* Szépligeti, 1904. Australasian: Indonesia

*B. mellicrus* Long, sp. n.. Oriental: Vietnam

*Brulleia nigra* van Achterberg, 1983. Oriental: Indonesia

*B. nigrisoma* Long, sp. n.. Oriental: Vietnam

*Brulleia nipponensis* van Achterberg, 1983. Eastern Palaearctic: Japan, Korea

*Brulleia noncarinata* Yan & Chen, 2013. Eastern Palaearctic: China

*Brulleia obereae* Chen & van Achterberg, 1993. Oriental: China

*Brulleia punctata* Yan & Chen, 2013. Eastern Palaearctic: China

*Brulleia rubida* Chen & He, 1993. Oriental: China

*Brulleia substriligula* He & van Achterberg, 1993. Oriental: China

*Brulleia taiwanensis* Chou & Hsu, 1998. Oriental: China
New record of the genus Brulleia Szépligeti

Brulleia tenuipetiolata Chen & He, 1993. Oriental: China


TAXONOMY

Key to Brulleia species from Oriental region

1a. Maxillary palp with with 2 or 3+ segments (4th segment faintly indicated); labial palpi with 2 segments. .......................................................... 2

b- Maxillary palp with 4 segments; labial palpi with 3 segments ........................................ 4
c- Maxillary palp with 5–6 segments; labial palpi with 3 segments ..................................... 11

2. Maxillary with 3 segments (4th segment faintly indicated); median length of first metasomal tergites slender, 2.3 × its apical width (Fig. 70 in van Achterberg, 1983); prepectal carina complete. .................................................. Brulleia tricolor van Achterberg

- Maxillary with 2 segments; median length of first metasomal tergites shirter, median length of the tergite 1.8 × its apical width (Fig. 83 in van Achterberg, 1983); prepectal carina incomplete or absent dorsally ........................................ 3

3. Body brownish-yellow; 10th–16th antennomeres yellowish-white; fore wing vein 3-SR 1.2 × as long as vein 2-SR (Fig. 87 in van Achterberg, 1983) .................. B. latiannulata (Cameron)

- Body largely black; 11th–13th antennomeres yellowish-white; fore wing vein 3-SR 1.4 × as long as vein 2-SR (Fig. 79 in van Achterberg, 1983) .................. B. melanocephala Szépligeti

4. Antenna yellow basally, blackish brown apically (Fig. 1) ........................................... 5

- Antenna black or blackish brown with yellowish-white band submedially (F. 23)........... 6

5. Labrum truncate ventrally (Fig. 2 in Chen et al., 1993); fore wing vein 3-SR shorter vein 2-SR (Fig. 1 in Chen et al., 1993); median length of first metasomal tergite 2.3 × its apical width (Fig. 5 in Chen et al., 1993); length of hind femur 6.4 × its maximum width .............. .................................................. B. flavibasalis He & Chen

- Labrum concave ventrally (Fig. 3); fore wing vein 3-SR distinctly longer vein 2-SR (Fig. 10); median length of first metasomal tergite 1.9 × its apical width (Fig. 9); hind femur robust, length of hind femur 5.25 × its maximum width ............. B. flavosoma Long, sp. n.

6. Labrum deeply concave medio-ventrally (Fig. 25; Fig. 56 in van Achterberg, 1983); body almost completely black or blackish brown (Fig. 23) ........................................... 7

- Labrum truncate or convex (Fig. 14; Fig. 1 in Yan et al., 2013; Figs 31, 40 in van Achterberg, 1983); body dark brown or brownish-yellow ........................................ 8

7. First metasomal tergite shorter, median length 2.1 × as long as its apical width; length of hind femur 6.7 × its maximum width .................................................. B. nigra van Achterberg

- First metasomal tergite slender, median length 2.7 × as long as its apical width (Fig. 30); length of hind femur 5.8 × its maximum width; ovipositor sheath 1.6 × as long as fore wing; antenna with 11th–15th antennomeres whitish yellow (Fig. 23) ....... B. vietnamica Long, sp. n.

8. First metasomal tergite elongate, median length of tergite 2.9–3.3 × its apical width .......... 9

- First metasomal tergite shorter, median length of tergite 1.5–2.3 × its apical width ........... 10
9. Second metasomal tergite smooth; hind wing vein 1-M 1.1 × as long as vein 1r-m (Fig. 7 in Yan et al., 2013); antenna with 12th-17th antennomeres whitish yellow. .......... B. fanjingensis Yan & Chen
- Second metasomal tergite sculptured (Fig. 18); hind wing vein 1-M 1.7 × as long as vein 1r-m (Fig. 22); antenna with 12th-15th antennomeres whitish yellow B. mellicrus Long, sp. n.
10. First metasomal tergite more or less robust; median length of first tergite 1.5 × as long as its apical width; antenna without yellowish white submedian band B. townesi van Achterberg
- First metasomal tergite slender, median length of first tergite 2.1–2.3 × as long as its apical width; antenna with yellowish white submedian band ......... B. brunnnea van Achterberg

11. Maxillary palp with 6 segments; labial with 3 segments ........................................ 12
- Maxillary palp with 5 segments; labial with 3 segments ........................................ 16
12. First metasomal tergite slender, median length of first tergite 3.1 × as long as its apical width (Fig. 30 in Chen et al., 1993); second tergite distinctly sculptured baso-medi ally; body black ........................................ B. tenuipetiolata Chen & He
- First metasomal tergite shorter, median length of first tergite 2.0–2.2 × as long as its apical width (Figs. 40, 45, 50 in Chen et al., 1993); second tergite smooth or finely sculptured baso-laterally; body bicoloured ........................................ 13
13. Labrum concave medio-ventrally; length of maxillary palp 1.1 × as long as height of head; body black ........................................ B. longipalpis Yan & Chen
- Labrum truncate or convex medio-ventrally; length of maxillary palp 0.5-0.7 × as height of head; body dark brown and yellow ........................................ 14
14. Clypeus slightly concave; fore wing vein 3-SR equal to vein 2-SR; hind wing vein 1-M 2.0 × as long as vein 1r-m; antenna yellow basally, dark brown apically ... B. auripes Chen & He
- Clypeus slightly straight or truncate; fore wing vein 3-SR shorter than vein 2-SR; hind wing vein 1-M 1.6–1.7 × vein 1r-m; antenna brown with yellowish-white submedian band ........................................ 15
15. Vein 3-SR of fore wing 1.6 × as long as vein 2-SR (Fig. 41 in in Chen et al., 1993); ventral margin of clypeus slightly concave; precoxal sulcus almost smooth ........................................ B. subtilirugula He & van Achterberg
- Vein 3-SR of fore wing shorter than vein 2-SR (Fig. 46 in Chen et al., 1993); ventral margin of clypeus truncate; precoxal sulcus wide and shallow, densely punctate ........................................ B. oberea Chen & van Achterberg

16. First metasomal tergite long, median length of first tergite 3.4 × as long as its apical width; second tergite sculptured baso-medially (Fig. 35 in Chen et al., 1993) .... B. chaoi He & Chen
- First metasomal tergite shorter, median length of first tergite 1.8–2.5 × as long as its apical width; second tergite smooth or slightly sculptured baso-laterally (Figs. 10, 20, 45 in Chen et al., 1993) ......................................................... 17
17. Hind femur slender, length of hind femur 8.6 × as long as its maximum width (Fig. 21 in Chen et al., 1993); second tergite polished, smooth (Fig. 25 in Chen et al., 1993) ............ B. yangi He & Chen
- Hind femur thicker, length of hind femur 5.0–5.8 × as long as its maximum width; second tergite more or less sculptured (Figs. 15, 20 in Chen et al., 1993) ........................................ 18
18. Body black or almost blackish brown; vein 1-M of hind wing 1.5–2.0 × as long as vein 1r-m; clypeus reticulate-rugose.......................... *B. taiwanesensis* Chou & Hsu
- Body yellowish brown or reddish brown; vein 1-M of hind wing 1.2–1.3 × as long as vein 1r-m (Figs. 11, 16 in Chen et al., 1993); clypeus rugose-punctate .......................... 19

19. Antenna yellow basally, 17th and following antennomeres blackish brown; second metasomal tergite widened posteriorly, sculptured baso-laterally (Fig. 20 in Chen et al., 1993) ......................................................................................................................... *B. lutea* He & Chen
- Antenna blackish brown with yellowish white submedian band (8th–15th antennomeres yellowish-white); second metasomal tergite quadrate, almost smooth (Figs. 10, 15 in Chen et al., 1993) .......................................................... *B. rubida* Chen and He.

*Brulleia flavosoma* Long, sp. n.

Figs 1–11

**Material examined.** Holotype, ♂, “Hel.058” (IEBR), NE Vietnam: Tuyen Quang, Na Hang, Son Phu, forest, MT, 22°17’32”N 105°28’19”E, 573m, 15.viii.2017, K. Long

**Description.** Body length 14.8 mm, fore wing length 11.5 mm (Fig. 1).

**Head.** Antenna with 39 antennomeres; third antennomere 1.2 × longer than fourth antennomere; length of third, fourth and penultimate antennomeres 4.25, 4.0 and 1.5 × their width, respectively; preapical antennomere 0.7 × as long as apical antennomere; maxillary palp 5-segmented; labial palp 3-segmented; length of maxillary palp 0.5 × height of head; in frontal view, face width 1.7 × as long as face and clypeus combined; distance between tentorial pits 0.8 × distance from pit to eye margin (Fig. 3); in lateral view, transverse diameter of eye as long as temple (Fig. 4); occipital carina arched medio-dorsally (Fig. 2); in dorsal view, median length of head 1.45 × as long as wide (Fig. 2); and eye subequal to temple in dorsal view; length of malar space 1.3 × basal width of mandible, and 0.9 × maximum width of eye (Fig. 3); ocelli large, situated in low triangle (Fig. 2); POL:OD:OOL=9:10:24; frons deeply depressed, coriaceous, striate laterally (Fig. 2); vertex rugose-punctate; temple sparsely punctate (Fig. 2); face coarsely rugose medi ally with a tubercle and triangular depression (Fig. 3); ventral clypeal margin slightly concave medially, clypeus rugose as face; labrum emarginate ventrally, with long setae, sparsely and finely punctate (Fig. 3).

**Mesosoma.** Length of mesosoma 1.6 × as long as its height; pronotal side wide, crenulate antero-dorsally, almost smooth medially; prepectal carina absent; precoxal sulcus wide and shallow with oblique rugosities (Fig. 7); mesopleuron with sparse and fine punctures, nearly smooth; subalar space flat, smooth; mesosternum rugose-punctate; notauli crenulate anteriorly, widened and largely rugose posteriorly (Fig. 6); middle lobe of mesocutum densely and finely punctate; lateral lobes of mesocutum sparsely punctate; scutellar sulcus rather long, 0.6 × as long as scutellum, coriaceous, with one median carina (Fig. 6); scutellum sparsely punctate; propodeum with short basal carina, rugose with two transverse striae medi ally (Fig. 8).

**Wings.** Length of fore wing 3.2 × its maximum width (Fig. 10); length of pterostigma 2.9 × as long as wide; fore wing vein 3-SR 2.3 × vein r, and 0.4 × vein SR1 (r:3-SR:SR1=15:35:87); 2-SR:3-SR:r m=23:35:24; 1-M 1.5 × m-cu; 1-CU1 0.1 × vein 2-CU1 × (1-CU1:cu-a:2-CU1=4:14:34) (Fig. 10); basal length of second submarginal cell of fore wing 2.15 × its maximum width. Length of hind wing 4.2 × its maximum width; vein R1; vein M+CU 1.7 × vein 1-M 1.3 × vein 1r-m; subbasal cell widened apically (Fig. 11).

*Legs.* Length of hind femur, tibia and basitarsus 5.25 ×, 11.7 × and 8.0 × their width, respectively; hind tibia 1.85 × as long as hind femur; hind tibial inner spur 0.24 × hind basitarsus, and 1.1 × outside spur; fourth hind tarsus 0.3 × hind telotarsus (without pretarsus) (Fig. 5); hind coxa almost smooth, with sparse and fine punctures.
**Metasoma.** First metasomal tergite 1.9 × its apical width; suture between second and third metasomal indistinct (Fig. 9); first metasomal tergite with lateral carinae in basal 0.6 of first tergite (Fig. 9), coriaceous basally, largely rugose laterally and apically; remaining tergites smooth.

**Colour.** Body yellow; more than basal half of antenna yellow, dark brown apically (Fig. 1); stemmaticum and vertex medially blackish brown to black; notauli black; scutellar sulcus dark brown (Fig. 6); wings yellow with veins brown (Figs 10, 11), pterostigma yellow medially (Fig. 10); first metasomal yellow; second-sixth tergites brownish yellow (Fig. 9).

**Female and host.** Unknown.

**Distribution.** NE Vietnam (Tuyen Quang).

**Etymology.** From “flavus” (Latin for “yellow”) and “soma” (Greek for “body”), because of the yellow body.

**Notes.** The new species, *Brulleia flavosoma*, sp. n., is distinguished from *B. flavibasalis* He & Chen, from China by the characters given in the key. The new species differs from *B. nigra* van Achterberg, from Philippines by having: a) Hind femur robust, 5.2 × as long as its maximum width (7.7 × in *B. nigra*); b) Antenna without yellowish white submedian band; and c) Body yellow.

*Brulleia mellicrus* Long, sp. n.

Figs 12–22

**Material examined.** Holotype, ♂, “Hel.059” (IEBR), NC Vietnam: Ha Tinh, Huong Son, 18°22’N 106°13’E, 900m, May 18, 1998, Malaise, AMNH, K. Long.

**Description.** Body length 13.3 mm, fore wing length 9.5 mm (Fig. 12).

**Head.** Antenna with 37 antennomeres; third antennomere 1.3 × longer than fourth antennomere (13:10); length of third, fourth and penultimate segments 2.2, 1.7 and 2.0 × their width, respectively; preapical antennomere 0.7 × as long as apical antennomere; maxillary palp 5-segmented; labial palp 3-segmented; length of maxillary palp 0.65 × height of head; in frontal view, face width 1.5 × as long as length of face and clypeus combined; distance between tentorial pits 0.9 × distance from pit to eye margin (Fig. 14); in lateral view, transverse diameter of eye 1.3 × as long as temple (Fig. 15); occipital carina evenly concave, slightly reduced medio-dorsally; in dorsal view, median length of head 1.9 × as long as wide; eye height 1.6 × as long as temple in dorsal view; length of malar space 0.8 × basal width of mandible, and 0.5 × maximum width of eye; ocelli medium-sized in rather high triangle (Fig. 13); POL:OD:OOL=7:8:20; frons largely rugose; vertex and temple with sparse and fine punctures (Fig. 13); face reticulate-rugose, medially with a tubercle (Fig. 14); clypeus rugose, ventral clypeal margin almost straight; labrum convex ventrally, sparsely punctate; malar space foveolate-rugose.

**Mesosoma.** Length of mesosoma 2.1 × as long as its height; pronotal side largely crenulate anterior-dorsally, with longitudinal striae ventrally, coriaceous medially, rugose posteriorly; prepectal carina incomplete; precoxal sulcus wide, largely rugose (Fig. 17); mesopleuron rugo-punctate; notauli deep, largely crenulate with median carina dividing posterior area of notauli into two parts (Fig. 16); median and lateral lobes of mesoscum with dense punctures (Fig. 16); scutellar sulcus crenulate, with one median carina; scutellum sparsely punctate; propodeum foveolate-rugose anteriorly, areolate-rugose posteriorly (Fig. 20).
Wings. Fore wing (Fig. 21), length of fore wing 3.1 × its maximum width; length of pterostigma 3.8 × as long as wide; fore wing vein 3-SR 1.7 × vein r, and 0.3 × vein SR1 (r;3-SR;SR1=13:22:75); 2-SR:3-SR:r-m=19:22:18; vein 1-M 1.25 × as long as vein m-cu; vein 1-CU1 quadrate; cu-a:2-CU1=12:31; vein r-m with remnant vein (Figs 12, 21); basal length of second submarginal cell of fore wing 2.05 × its maximum width.

Length of hind wing 3.9 × its maximum width; vein M+CU 1.3 × vein 1-M; vein 1-M 1.7 × vein 1r-m; subbasal cell narrowed apically (Fig. 22).

Legs. Length of hind femur, tibia and basitarsus 5.8, 12.8 and 10.0 × their width, respectively; hind tibia 1.9 × as long as hind femur; hind tibial inner spur 0.24 × hind basitarsus, and 1.1 × as long as outside spur; hind coxa sparsely punctate latero-dorsally.

Metasoma. Length of first metasomal tergite 2.9 × its apical width; median length of second tergite 1.1 × third tergite; suture between second and third tergites distinct (Fig. 18); first metasomal tergite with two lateral carinae in basal 0.7 of first tergite, remainder largely rugose; second tergite finely sculptured basally, smooth apically (Fig. 18); third-sixth tergites smooth.

Colour. Body brownish brown, except first sternite yellow; antenna blackish brown with 12th–15th antennomers whitish yellow (Figs. 12, 19); all legs yellow; wing tegula, pterostigma and veins brown; wing membrane yellowish brown.

Female and host. Unknown.

Distribution. NC Vietnam (Ha Tinh).

Etymology. From “mellosus” (Latin for “honey-colored”), and “crus” (Latin for “leg”), because of the honey yellow-coloured legs.

Brulleia vietnamica Long, sp. n.

Figs. 23–32


Description. Body length 10.5 mm, forewing length 8.0 mm, antenna 10.3 mm, ovipositor sheath 12.6 mm (Fig. 23).

Head. Antenna with 39 antennomeres; third antennomere 1.1 × fourth antennomere; length of third, fourth and penultimate antennomeres 5.8, 5.2 and 1.0 × their width, respectively; apical antennomeres shortened (Fig. 23a); maxillary palp 4-segmented; labial palp 3-segmented; length of maxillary palp 0.8 × height of head; in frontal view, face width 1.6 × as long as length of face and clypeus combined; distance between tentorial pits 0.7 × distance from pit to eye margin (Fig. 25); in lateral view, eye 1.3 × as long as temple (Fig. 26); occipital carina arched and interrupted medio-dorsally; in dorsal view, median length of head 0.6 × as long as wide; and height of eye 1.9 × as long as temple (Fig. 24); length of malar space as long as basal width of mandible, and 0.4 × maximum width of eye; ocelli medium-sized in rather high triangle (Fig. 25); POL:OD:OOL=9:6.5:21; frons more or less flat, rugose medially, with convergent striae ventrally; vertex and temple finely punctate (Fig. 24); face reticulate-rugose medially, foveolate-rugose laterally; ventral clypeal margin almost straight, clypeus largely rugose; labrum concave medio-ventrally (Fig. 25), with long setae, rugose-punctate.

Mesosoma. Length of mesosoma 1.85 × as long as its height (Fig. 27); pronotal side sparsely crenulate anteriorly, longitudinally striate ventrally, coriaceous medially; prepectal carina present; precoxal sulcus wide, foveolate-rugose (Fig. 27); mesopleuron rugose-punctate; notauli wide and deep, largely crenulate, its posterior area wide, with median carina, prolonged and almost fused with scutellar sulcus posteriorly (Fig. 28); median lobe of mesoscutum densely punctate; middle lobe of mesoscutum largely rugose-punctate (Fig. 28); scutellar sulcus smooth, with one
median carina (Fig. 28), and 0.45 \times \text{as long as scutellum}; scutellum sparsely rugose-punctate anteriorly, rugose posteriorly; propodeum with short basal median carina, largely rugose laterally, foveolate-rugose medially and posteriorly (Fig. 29).

New record of the genus Brulleia Szépligeti

Wings. Length of fore wing 3.2 × its maximum width (Fig. 32); length of pterostigma 4.1 × its width; vein 3-SR 1.3 × vein r, and 0.3 × vein SR1 (r:2-SR:3-SR:SR1:rm=9:12:16:54:11) (Fig. 33); vein 1-M 1.4 × vein m-cu; vein cu-a 3.0 × 1-CU1 (9:3), vein 1-CU1 0.15 × vein 2-CU1; basal length of second submarginal cell of fore wing 2.0 × its maximum width. Length of hind wing 3.6 × its maximum width; vein M+CU 2.0 × 1-M; vein 1-M 1.3 × vein 1r-m; subbasal cell widened apically (Fig. 31).

Legs. Length of hind femur, tibia and basitarsus 5.9, 13.2 and 9.8 × their width, respectively; hind tibia 1.85 × as long as hind femur; hind tibial inner spur 0.3 × hind basitarsus, and 1.1 × as long as outside spur; hind coxa coriaceous latero-dorsally.

Metasoma. Length of first metasomal tergite 2.7 × its apical width (Fig. 30); median length of second tergite 1.4 × third tergite; suture between second and third metasomal tergites indistinct (Fig. 30); first metasomal tergite without lateral carinae, reticulate-rugose entirely (Fig. 30); second fifth tergites smooth.

Colour. Body black; antenna black, except scapus and pedicellus infuscate brown, with 11th–15th antennomeres cream white (Fig. 23); fore and middle coxae yellowish brown; fore and middle trochanter and trochantellus pale yellow; fore and middle femurs yellow; fore and middle tibia and tarsus brownish yellow; hind coxa, femur and tibia brown; hind trochanter, trochantellus and tarsus pale yellow; tegula, pterostigma and wing veins brown; wing membrane yellowish brown; ovipositor sheath brown; first-second sternites pale yellow.

Male and host. Unknown.

Distribution. NE Vietnam (Tuyen Quang).

Etymology. The new species is named after the country of origin: Vietnam.

Acknowledgements: This research was funded by the Vietnam National Foundation for Science and Technology Development (NAFOSTED), grant No. 106-NN.05-2016.08. Authors express the great gratitude to Dr Kees van Achterberg, Department of Terrestrial Zoology, Naturalis Biodiversity Center Leiden (RMNH), the Netherlands for the critical comments.

REFERENCES


Long K. D., van Achterberg C., 2014. An additional list with new records of


