

## A new species of *Haphsa* Distant, 1905 from Vietnam (Insecta: Hemiptera: Cicadoidea: Cicadidae)

ALLEN F. SANBORN

### Summary

The Vietnamese cicada *Haphsa apicoinfusata* sp. nov. is described as new. The type series was collected in Thai Nguyen and Cao Bang Provinces. A key to the Vietnamese species of *Haphsa* is also provided.

### Zusammenfassung

Die vietnamesische Singzikade *Haphsa apicoinfusata* sp. nov. wird als neu für die Wissenschaft beschrieben. Die Tiere wurden in den vietnamesischen Provinzen Thai Nguyen und Cao Bang gesammelt. Ein Schlüssel zu den vietnamesischen Arten der Gattung *Haphsa* wird vorangestellt.

**Key words:** New species, Cicada, Taxonomy, *Haphsa apicoinfusata*, Vietnam

### 1. Introduction

LEE (2008) and PHAM & YANG (2009) have recently produced checklists of the cicadas from Vietnam. However, new species continue to be found and identified (LEE 2012a, PHAM & CONSTANT 2013a, 2013b, PHAM et al. 2010, 2012a, 2012b, PHAM & YANG 2010, 2012, SANBORN 2009). The specimens described here as a new species of the genus *Haphsa* Distant, 1905 were recently collected and sent to the author for determination by the Naturkundemuseum Erfurt, Germany.

The genus *Haphsa* was erected by DISTANT (1905) with *Dundubia nicomache* Walker, 1850 as the type species. Species of *Haphsa* are distinguished by the head being about as wide as the mesonotum, the rostrum reaching or passing the posterior coxae, a pronotum longer

than the head but shorter than the mesonotum with a subacutely toothed, sinuate lateral margin, an abdomen that is not swollen laterally and is shorter or equal to the head-cruciform elevation length, dorsally complete timbal covers that do not adjoin laterally or extend ventrally over the opercula, opercula with rounded angles, and uncal lobes that are short, bifurcating and fused at the base (DISTANT 1905, LEE 2009, BOULARD 2013). The currently 14 recognized species of *Haphsa* are *H. bicolora* Sanborn, 2009, *H. bindusara* (Distant, 1881), *H. conformis* Distant, 1917, *H. dianensis* Chou et al., 1997, *H. durga* (Distant, 1881), *H. fratercula* Distant, 1917, *H. jsguillotsi* (Boulard, 2005), *H. karenensis* Ollenbach, 1928, *H. nana* Distant, 1913, *H. nicomache* (Walker, 1850), *H. opercularis* Distant, 1917, *H. scitula* (Distant, 1888), *H. stellata* Lee, 2009, and *H. sulaiyai* (Boulard, 2005) (the spelling of *H. sulaiyai* is retained even though BOULARD (2013) indicates this was a mistake for *H. sulaeyai* based on Articles 31.1.3, 32.2, and 32.3 since the species epithet and spelling of the name for derivation in the etymology are the same (BOULARD 2005) and he used the original spelling in another publication (BOULARD 2008) making Articles 32.5 and 33 inapplicable so Recommendation 24A of the *Code* (ICZN 1999) is followed to provide stability of nomenclature). Other species that may have been classified in *Haphsa* have been transferred to other genera (LEE 2009, 2012b).

### 2. Materials and Methods

Morphological terminology follows MOULDS (2005). Measurements were made with Vernier calipers. Type material is deposited in the Naturkundemuseum Erfurt (NME) with a voucher specimen in the author's collection (AFSC).

### 3. Results and Discussion

Key to the species of *Haphsa* in Vietnam

1. Apical portion of fore wing infuscated ..... *H. apicoinfuscata* sp. nov.  
– Apical portion of fore wing hyaline ..... 2
2. Radial and radiomedial crossveins without infuscation ..... *H. bicolora*  
– Radial and radiomedial crossveins infuscated ..... 3
3. Wingspan greater than 100 mm, male opercula reaching sternite V ..... *H. opercularis*  
– Wingspan less than 100 mm, male opercula not reaching sternite V ..... 4
4. Body length less than 30 mm ..... 5  
– Body length greater than 30 mm ..... 7
5. Body coloration castaneous brown, wingspan about 82 mm ..... *H. fratercula*  
– Body coloration greenish ochraceous, wingspan about 73 mm or 94 mm ..... 6
6. Wingspan about 73 mm, male opercula reaching to base of sternite III ..... *H. nana*  
– Wingspan about 94 mm, male opercula reaching to sternite VII ..... *H. conformis*
7. Wingspan about 84 mm, male timbal covers bulbous, male opercula covering the anterolateral margin of the timbal cover, male uncal lobes short ..... *H. bindusara*  
– Wingspan about 66 mm, male timbal covers not bulging, male opercula small, not covering the antero-lateral margin of the timbal cover and barely covering the tympanal cavity, male uncal lobes long ..... *H. scitula*

#### *Haphsa apicoinfuscata* sp. nov. (Figs. 1-6)

**Type material.** Holotype male: N-VIETNAM Thai Nguyen Pr. / vic. Ngoc Thanh, Le Minh / (IEBR Station), 12.V.2012 / 21°23'3.43"N, 105°42'43.77"E / 60 m, leg. A. Weigel by light (NME). Paratypes: same data as holotype, 1 male (AFSC); N-VIETNAM Cao Bang Pr. / vic. Vin Den Nui Pia Oac / Nature Res., 06-10.V.2013 / 22°33'58"N, 105°52' 53"E / 900-1300 m, leg. A. Weigel, 2 males (NME).

**Etymology.** The species is named for the infuscation of the apical portion of the fore wing, a feature unique in the genus.

**Measurements of types** (in mm, mean (range), n=4 males). Length of body: 27.5 (25.8–29.3); length of fore wing: 36.7 (34.9–37.9); width of fore wing: 10.83

(10.1–11.6); length of head: 4.78 (4.7–4.8); width of head including eyes: 9.98 (9.8–10.1); width of pronotum including suprahumeral plates: 9.75 (9.5–9.9); width of mesonotum: 8.48 (8.3–8.6); wingspan: 81.9 (78.3–84.3).

**Diagnosis.** *Haphsa apicoinfuscata* sp. nov. is easily separated from all other *Haphsa* species by the infuscation on the apical portion of the fore wing. All other known representatives of the genus lack this infuscation.

**Description** (Fig. 1). **Coloration.** – Ground color of head and thorax olivaceous-tawny, abdominal tergites tawny marked with black. Olivaceous has faded to testaceous with exposure to alcohol in some paratypes.

**Head** (Fig. 2). – Head olivaceous-tawny slightly wider than mesonotum. Black markings on medial half of dorsal supra-antennal plate, a V-shaped black line beginning posterior to eye extending medially on vertex to anterior of anterior cranial depression then extend-



Fig. 1. *Haphsa apicoinfuscata* sp. nov., holotype male habitus. Scale bar = 20 mm.

Fig. 2. *Haphsa apicoinfuscata* sp. nov., holotype dorsum. Scale bar = 5 mm.

Fig. 3. *Haphsa apicoinfuscata* sp. nov., holotype timbal cover. Scale bar = 2 mm.

Fig. 4. *Haphsa apicoinfuscata* sp. nov., holotype male operculum. Scale bar = 2 mm.



ing anterolaterad almost to lateral suture between vertex and supra-antennal plate, mark from medial frontoclypeal suture expanding laterally to anterior arm of epicranial suture returning medial across the lateral ocelli where it curves posteriorly to posterior margin of head enclosing all but the posterolateral portion of lateral ocelli, and in posterior cranial depressions. Epicranial suture tawny posterior to lateral ocelli. Ocelli ochraceous. Head sparsely covered with golden pile, longer and denser posterior to eye. Postclypeus greenish-tawny with black arrowhead shaped mark on dorsal surface, reduced in Cao Bang paratypes, and black in transverse grooves, black reduced laterally in middle grooves. Anteclypeus olivaceous-tawny along midline, black laterally and on posterior margin. Rostrum light olivaceous-tawny with piceous tip, extending to posterior coxae. Gena olivaceous-tawny with black stripe between postclypeus and medial eye continuing and terminating next to ventral eye. Lorum olivaceous-tawny on anterior third, remainder black. Lora, genae, anteclypeus, and posterior half of ventral postclypeus covered with short white pile and white pubescence. Antennae fuscous.

**Thorax** (Fig. 2). – Prothorax olivaceous-tawny marked with black. Black fascia on either side of midline expanding anteriorly, angled mediad to medial paramedian fissure, angled laterad to level of posterior lateral fissure and returning mediad fusing along midline and slightly extending onto pronotal collar forming an olivaceous-tawny hour glass shaped mark with an anterior extension on midline. Paramedian fissure black anteriorly and posteriorly. Black mark in lateral fissure continues around lateral ambient fissure to terminate medial of posterior lateral fissure. Incomplete tawny marks on disc posterior to medial paramedian fissure, solid black mark in one paratype. Pronotal collar edged in black, a black mark laterally anterior to lateral angle including spine and a black spot on pronotal collar where ambient fissure begins to curve anteriorly. Fuscous spot on collar between lateral angle and ambient fissure. Mesonotum olivaceous-tawny with medial black fascia reaching to level of black scutal depression, slightly expanding posteriorly before angling to terminus on midline. Black fascia along medial parapsidal suture, small black fascia anteriorly between submedian and lateral sigillae, and incomplete black fascia in lateral sigillae. Cruciform elevation olivaceous-tawny with black mark on distal anterior arm and posterior margin. Golden pile

in depressions and along lateral mesonotum. Metanotum olivaceous-tawny, a fuscous spot next to cruciform elevation and laterally at wing base, with long golden pile in wing groove. Thoracic sternites testaceous except black marks on basisternum 2, medial basisternum 3, posterior episternum 2, and posterior episternum 3.

**Legs.** – Testaceous covered with sparse golden pile and dusted with white pubescence. Black marks on anterior and posterior lateral coxae. Fuscous mark on central trochanter. Femora striped with fuscous. Fore femora with primary spine oblique, secondary spine parallel to primary spine, and distal tertiary spine small and more oblique, primary and secondary spines tawny marked with black, tertiary spine black. Tibiae testaceous, fore tibiae striped with tawny, middle tibiae tawny distally. Tibial spurs and tibial comb fuscous with piceous tips. Tarsi testaceous, fore tarsi fuscous proximally and distally, middle tarsi fuscous distally. Pretarsal claws testaceous proximally, fuscous distally.

**Fore wings and hind wings** (Fig. 1). – Hyaline, fore wings with eight apical cells, hind wings with six apical cells. Distal portion of fore wing apical cells 1-4 infuscated along with infuscation on the radial and radio-medial crossveins. Venation of fore wing ochraceous to node becoming black distally except olivaceous-tawny costa to node, a black mark on median vein proximal to node, fuscous marks along cubitus anterior posterior to basal cell and on arculus, a black mark on radius & subcostal vein in basal cell, a black spot on proximal cubitus posterior+anal vein 1, and black anal vein 2+3. Basal cell clear. Basal membrane greenish-white, fuscous mark laterally. Plaga grayish at base becoming fuscous distally. Hind wing venation black except ochraceous proximal radius posterior, cubitus anterior, cubitus anterior 1, cubitus anterior 2 and anal vein 1. Anal vein 3 fuscous. Plaga and anal cells 1 and 2 along anal veins 2 and 3 grayish.

**Abdomen** (Fig. 1). – Tergites tawny, hind margin of tergite 1, anterior margins of tergites 2-8 black and fuscous, amount of coloration increasing laterally and posteriorly in posterior tergites. Black reduced to anterior tergites in one paratype, posterior medial margin of black mark incomplete in another paratype. Tergites covered with short silvery pile and white pruinosity, more dense posteriorly and laterally. Long silvery pile on lateral tergites 6-7 and across tergite 8. Timbal covers tawny, slightly expanded laterally covered with short

silvery pile (Fig. 3). Sternites testaceous with fuscous marks the medial anterior margins of sternites I–III and on lateral anterior margins of sternites IV–VII. Epipleurites with fuscous mark anteriorly, increasing in size in posterior segments. White pruinosity on medial sternites I–III, laterally on sternites IV–VI and on epipleurites, missing in some paratypes due to alcohol exposure.

**Operculum** (Fig. 4). – Male operculum reaching to posterior of sternite IV, testaceous marked with green posteriorly and along posterior midline and a fuscous mark at base. Lateral margin straight, rounded approximate triangular posterior margin, straight posteromedial margin to anterior sternite III where the medial margin runs parallel to but not meeting the other operculum before curving laterad to base. White pruinosity on base, short silvery pile on surface of operculum. Meracanthus testaceous with fuscous spot on base, covered with white pruinosity.

**Male genitalia** (Figs. 5–6). – Pygofer testaceous with fuscous dorsal and ventral margins. Basal lobe a flattened semicircle, covered with long golden pile. Dorsal beak absent, anal styles fuscous. Uncus fuscous except tawny ring around anal styles. Median uncus lobes fused distally. Lateral uncus lobes narrowing distally, arched posteriorly, lateral margins curved distally, reducing to narrowly pointed apex. Pygofer and lateral uncus lobe with sparse, short, golden pile, median uncus lobes with sparse, long, golden pile.

Female unknown.

**Distribution.** The species is currently known only from the type series collected in the northern portion of Vietnam in Thai Nguyen and Cao Bang Provinces.

**Remarks.** The addition of *H. apicoinfuscata* sp. nov. brings the total number of species of *Haphsa* in Vietnam to eight.

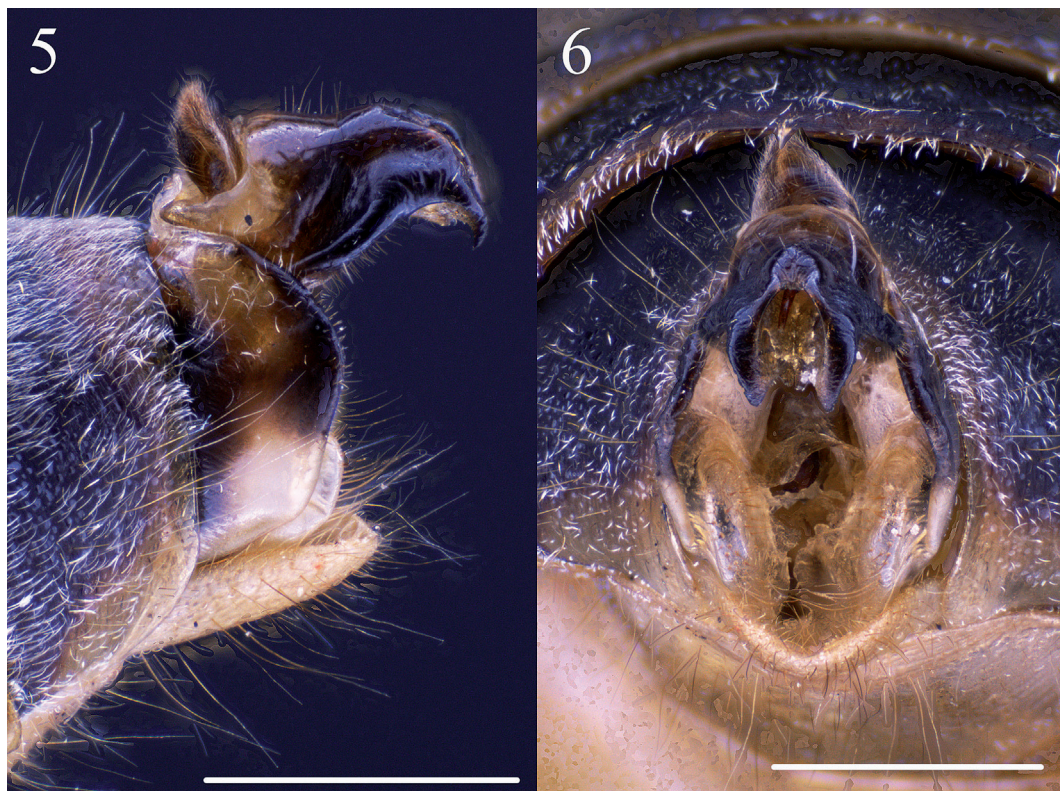


Fig. 5. *Haphsa apicoinfuscata* sp. nov., lateral view of holotype male genitalia. Scale bar = 2 mm.

Fig. 6. *Haphsa apicoinfuscata* sp. nov., posterior view of holotype male genitalia. Scale bar = 2 mm.

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## Author's address:

Allen F. Sanborn  
Department of Biology  
Barry University  
11300 NE Second Avenue  
Miami Shores, Florida 33161-6695, USA  
Phone: +1 (305)899-3219  
FAX: +1 (305)899-3225  
Email address: asanborn@barry.edu

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