

**TRIBE CRYPTOTYMPANINI (HEMIPTERA: CICADIDAE)
FROM VIETNAM, WITH KEY TO SPECIES**

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INTRODUCTION

The tribe Cryptotympanini includes 19 genera. They are distributed in all zoogeographical regions except continental Africa. Among them, 3 genera are recorded in Vietnam (*Chremistica* Stål, 1870; *Cryptotympana* Stål, 1861 and *Salvazana* Distant, 1913). This tribe is distinguished from the allied Platyleurini by having a broad head that is as wide or wider than the pronotum (that of the Platyleurini is narrower, usually much narrower), and the head, thorax and abdomen are “normal” (unlike those of the Platyleurini which are compressed dorso-ventrally). Distinguished from the allied Thophini by the male timbal covers that are flat (those of the Thophini are swollen and sack-like); females are not distinguishable.

MATERIALS AND METHOD

Specimens were collected by netting and light trapping. Previously collected specimens were included in our evaluations. Specimens are deposited at the Department of Insect Systematics of the Institute of Ecology and Biological Resources, Hanoi, and the Museum National d'Histoire Naturelle, Paris.

The tribal classification of this study is based on Moulds (2005). Names of genus and species, as well as synonymies, follow the catalogues of Metcalf (1963) and Lee (2008).

The nomenclature of the different parts of the body follows Moulds (2005).

Examined specimens are listed by provinces (given in bold).

The following acronyms are used: IEBR (Institute of Ecology and Biological Resources), MNHN (Museum National d'Histoire Naturelle, Paris), NP (National Park), NR (Natural Reserve), RBINS (Royal Belgian Institute of Natural Sciences).

Taxonomy

Family Cicadidae

Subfamily Cicadinae

Tribe Cryptotympanini Handlirsch, 1925

Type genus. *Cryptotympana* Stal.

Distribution. All zoogeographical regions except continental Africa.

Key to the genera of Cryptotympanini

1(2) Body lusterless, of mostly bright color or with conspicuous colorful markings; cruciform elevation not depressed; metathoracic prepisternum not elevated at center.....3

2(1) Body lustrous, mostly black with few markings; cruciform elevation depressed; metathoracic prepisternum distinctly elevated at center, forming an acutetipped process.....*Cryptotympana*

3(4) Head including eyes narrower than base of mesonotum, its length as long as half of the distance between eyes; operculum in male not surpassing the base of abdomen.....*Salvazana*

4(3) Head including eyes slightly wider than mesonotum; male operculum 1.2-1.3 times as long as wide; apical margin rounded and usually just not reaching posterior margin of sternite*Chremistica*

Genus *Chremistica* Stal, 1870

Chremistica Stal, 1870: 714 (as a subgenus of *Cicada*). Type species: *Cicada bimaculata* Olivier, 1790.

Rihana Distant, 1904c: 426. Type species: *Fidicina ochracea* Walker, 1850.

Distribution. Madagascar, Oriental region.

1. *Chremistica viridis* (Fabricius, 1803)

Tettigonia viridis Fabricius, 1803: 39 [Type location: America meridionali].

Rihana viridis: Moulton, 1923: 131, 168.

Chremistica viridis: Metcalf, 1963a: 182; Salmah *et al.*, 2005: 19; Sanborn *et al.*, 2007: 7.

Cicada bimaculata: Jacobi, 1905: 431; Distant, 1906b: 33 (*Rihana*); Distant, 1912c: 27 (*Rihana*); Distant, 1917a: 101 (*Rihana*); Moulton, 1923: 132, 168 (*Rihana*); Kato, 1932: 154 (*Rihana*); Schmidt, 1932: 118 (*Chremistica*); Kato, 1934: 149 (*Rihana*) (nec Olivier, 1790).

Chremistica atrovirens: Metcalf, 1963a: 170 (nec Guérin-Méneville, 1838).

Material examined. No specimen was available.

Distribution. Vietnam, Philippines, Cambodia, Thailand, Malaysia and Indonesia (Java and Sumatra).

Genus *Salvazana* Distant, 1913

Salvazana Distant, 1913b: 286. Type species: *Salvazana mirabilis* Distant, 1913.

Distribution. Oriental region.

2. *Salvazana mirabilis* Distant, 1913

Salvazana mirabilis Distant, 1913b: 286 [Type location: Indo-China]; Distant, 1917a: 101; Metcalf, 1963a: 371; Sanborn *et al.*, 2007: 9.

Material examined. **Kon Tum:** 1 male, 1 female, Ngoc Linh NR, 1700m, 19.iv.2004; 1 female, Ngoc Linh NR, vi.2006 (IEBR); **Vinh Phuc:** 2 males, 2 females, Tam Dao NP, 14.vi.2011, Pham Hong Thai (IEBR).

Distribution. Vietnam (Kon Tum, Vinh Phuc), S. China, Thailand.

Genus *Cryptotympana* Stål, 1861

Cryptotympana Stål, 1861: 613. Type species: *Tettigonia pustulata* Fabricius, 1787 (China and Taiwan).

Distribution. Oriental and Australian Zoogeographical regions.

Key to the species of *Cryptotympana*

- 1(2) Fore wings with basal ½ black or much infuscated, extending to or slightly beyond nodal line.....3
- 2(1) Fore wing black (or fuscous) and/or with opaque parts (black part not extending to nodal line), or without them9
- 3(4) Black part on fore wings also extending along the costal margin towards the apex; venter of abdomen as well as male operculum almost entirely reddish orange.....*C. aquila*
- 4(3) Black part on fore wings not extending along the costal margin, and apical ½ hyaline, sometimes much smoky; venter of abdomen mostly black.....5
- 5(6) Abdomen as well as operculum almost entirely ochreous orange; black part on cell CuA of fore wings not reaching apex of the cell.....*C. nitidula*
- 6(5) Abdomen as well as operculum black with some dark ochraceous parts; cell CuA of fore wings entirely black or fuscous7
- 7(8) Head narrower than pronotum; body large, ca 50 mm in average; basal ½ of fore wings uniformly black.....*C. holsti*
- 8(7) Head about as wide as pronotum; body small, ca 43 mm in average; basal ½ of fore wings much infuscated, becoming black towards the base.....*C. mandarina*
- 9(10) Dorsum of abdomen hemmed by reddish ochreous laterally.....*C. atrata*
- 10(9) Dorsum of abdomen entirely black, not hemmed by ochreous.....*C. recta*

3. *Cryptotympana aquila* (Walker, 1850)

Fidicina aquila Walker, 1850: 84 [Type location: Korea].

Cryptotympana aquila: Jacobi, 1905: 431; Metcalf, 1963a: 337; Hayashi, 1987a: 173.

Material examined. **Quang Tri:** 4 males, 5 females, Huong Hoa, Khe Sanh, Ho.2145, Ho.2146, Ho.2157-Ho.2160, Ho.2172-Ho.2174, 400m, 3 vi 2006, Pham Hong Thai (IEBR); **Tonkin:** 3 males, Thanh-moi, 2 expl., Coll. du Roi Leopold (1929-1932) (RBINS); 95 males, Thanh-moi (RBINS).

Distribution. Vietnam (north Vietnam, Quang Tri), Laos, Thailand, Malay Peninsula, Borneo, Indonesia (Sumatra), Myanmar.

4. *Cryptotympana recta* (Walker, 1850)

Fidicina recta Walker, 1850: 79 [Type location: Silhet].

Cryptotympana recta: Jacobi, 1905: 431; Metcalf, 1963a: 367; Hayashi, 1987a: 191; Pham, 2005b: 233; Sanborn *et al.*, 2007: 9.

Material examined. **Bac Kan:** 3 males, Ba Be NP, 500m, 6 VIII 2002, Ta Huy Thinh (IEBR); **Hoa Binh:** 1 male, Hoabinh, Tonkin, A. De. Cooman (MNHN).

Distribution. Vietnam (Bac Kan, Hoa Binh), China, India, Laos, Thailand, Bangladesh.

5. *Cryptotympana nitidula* Hayashi, 1987

Cryptotympana nitidula Hayashi, 1987a: 196 [Type location: Caleu, Annam].

Material examined. 1 male, Annam, Caleu, MNHN 6626, July, 1921, M. Maunier (MNHN).

Distribution. Central Vietnam.

6. *Cryptotympana atrata* (Fabricius, 1775)

Tettigonia atrata Fabricius, 1775: 681 [Type location: China].

Cryptotympana atrata: Metcalf, 1963a: 339; Hayashi, 1987b: 33; Chou *et al.*, 1997: 276; Pham, 2005b: 233.

Cryptotympana pustulata: Kato, 1930: 54; Kato, 1932: 208 (synonymized by Chen (1943)).

Material examined. Quang Nam: 1 male, Song Thanh NR, 600m, Pham Hong Thai (IEBR); Annam: 1 male, 1 female (RBINS); Tonkin: 2 males, 2 females (RBINS); Saigon: 2 males (MNHN); Indo-Chine, principal du Tonkin: 1 female, 1910, J. Levasseur (MNHN).

Distribution. Vietnam (Quang Nam), Japan (Honshu), Korea, China, Taiwan and Indo-China.

7. *Cryptotympana mandarina* Distant, 1891

Cryptotympana mandarina Distant, 1891: 86 [Type location: China]; Jacobi, 1905: 431; Distant, 1916: 3; Distant, 1917a: 101; Kato, 1926: 31; Kato, 1927: 24; Kato, 1930: 54, 63; Kato, 1932: 208, 214, 266; Chen, 1933: 13; Wu, 1935: 8; Metcalf, 1963a: 364; Liu, 1977: 95; Hayashi, 1987b: 74; Pham, 2005b: 233; Sanborn *et al.*, 2007: 9.

Cryptotympana mimica Distant, 1917b: 319 [Type location: Laos; Vietri]; Metcalf, 1963a: 366 (synonymized by Hayashi (1987b)).

Material examined. Vinh Phuc: 1 female, Me Linh, 500m, Cic0271, 25.v.2001, Ta Huy Thinh; 1 male, Tam Dao NP, 1000m, Cic0140, 3.vii.2003, Pham Hong Thai, 1 male, Tam Dao NP, viii.2006; 1male, Tam Dao NP, Cic0474, 900m, 13.v.2004 (IEBR); **Phu Tho:** 1 male, Xuan Son NP, Cic0668, 13.v.2004; 2 females, Lap, Xuan Son NP, 300-500m, Cic0625, Cic0626, 15.vi.2004; 1 male, Xuan Son NP, Cic0682, 7.v.2005; 7 females, Ten, Xuan Son NP, Cic0613-Cic0637, 400-900m, 11-12.vi.2004; 3 females, Lap, Xuan Son NP, Cic0627-Cic0629, 300-500m, 15.vi.2004; 1 male, Lang, Xuan Son NP, Cic0630, 400 -500m, 13.vi.2004; 1 male, Du, Xuan Son NP, Cic0666, 3.v.2003; 1 male, Ten, Xuan Son NP, Cic0667, 1.v.2003, (IEBR); **Hai Phong:** 1 female, Cat Ba NP, 250m, Cic0272, 17.vii.2003, Pham Hong Thai (IEBR); **Lang Son:** 1 male, Chi Lang, 25.vii.1964 (DZM); 1 male, Tonkin, Langson (MNHN); 1 males, Huu Lien, VMN-cica.36, 9.vi.2008 (VMN); **Tuyen Quang:** 1 female, Tonkin centr, Tuyen Quang, 1901, A. Weiss (MNHN); 1 male, Tan Yen, Ham Yen, 25.vi.2005; **Bac Kan:** 2 males, Ba Be NP, Cic0669, Cic0670, 200m, 21.v.2005; 4 males, 9 females, Ba Be NP, 200-500m, 16-17.vi.2007; **Thanh Hoa:** 1 female, Hoa Quy, Nhu Xuan, Ho.1.0251, 31.v.2008; 1 male, Xuan Hoa, Nhu Xuan, Ho.1.0179, 29.v.2008 (IEBR); **Quang Nam:** 1 male, Cha Val, Nam Giang, Quang Nam, TD48-R.107, 28.v.2009 (IEBR); **Ha Tinh:** 2 males, Vu Quang NP, 23.vi.1998, Roland Eve (MNHN); 1 male, Khe O O, Son Kim 2, Huong Son, Cic0454, 8.v.2004, Truong Xuan Lam (IEBR); **Quang Tri:** 1 male, A Ngo, Dakrong, 200m, Ho.2142, 31.v.2006, light trap, Pham Hong Thai; 2 males, TT Khe Sanh, Huong Hoa, 400m, Ho.2155-Ho.2156, 3.vi.2006, light trap, Pham Hong Thai; 1 male, Annam, Quang Tri, 1925, M et M Poilane (MNHN); 1 male, Annam, Quang Tri, 1923, Jabouille (MNHN); 1 male, Annam, Cua Tung, 1950, Ch et J Primot (MNHN); 1 male, Cua Tung, Annam (MNHN); 1 male, Cua Tung, Annam (RMNH); **Thua Thien Hue:** 1 male, Tra Lenh, Aroang, A Luoi, 700m, Ho.1963, 28.v.2006, light trap, Pham Hong Thai; **Quang Binh:** 5 males, 2 females, U Bo pass, Truong Son, Quang Ninh, 550m, 10.v.2007, Pham Hong Thai; **Hoa Binh:** 1 male, Hoa Binh-Tonkin, 1919, R. Oberthuer (MNHN); **Ninh Binh:** 1male, 1 female, Cuc Phuong NP, v.2006; 1male, 1 female, Cuc Phuong NP, Cic1075, Cic1076, 25.v.2005; **Ha Noi:** 1 male, Tonkin, Hanoi, 1909, Louis Duport (MNHN); 2 females, Annam, Caleu, July, 1921, M. Maunier (MNHN).

Distribution. Vietnam (Bac Kan, Ha Noi, Ha Tinh, Hai Phong, Hoa Binh, Lang Son, Ninh Binh, Phu Tho, Quang Binh, Quang Nam, Quang Tri, Thanh Hoa, Thua-Thien Hue, Tuyen Quang, Vinh Phuc), China (including Hainan), Thailand, Myanmar, Laos, Campuchia.

8. *Cryptotympana holsti* Distant, 1904

Cryptotympana holsti Distant, 1904b: 331 [Type location: Central Formosa]; Distant, 1917a: 101; Kato, 1932: 208; Metcalf, 1963a: 354; Hayashi, 1987b: 79; Pham, 2005b: 233.

Cryptotympana vitalisi Distant, 1917b: 319, 320 [Type location: Laos; Vietri; Cochin China; Cap Saint Jacques]; Metcalf, 1963a: 370 (synonymized by Hayashi (1987b)).

Material examined. **Vinh Phuc:** 2 males, Tam Dao NP, 1200m, 3.vii.2003, Ta Huy Thinh; 1 male, Tam Dao NP, 1000m, Cic0528, 25.v.2004 (IEBR); 1 male, Tay Thien, Dai Dinh, Tam Dao, 500m, Cic0430, 17.v.2004, light trap, Hoang Vu Tru; 2 males, Tonkin, Tam Dao, 900-1100m, vii.1996, R. Boistel (MNHN); **Phu Tho:** 1 male, 12 females, Xuan Son NP, 500m, 11-15.vi.2004, Pham Hong Thai; **Lai Chau:** 1 male, Muong Phang, 1100m, v.2001, Ta Huy Thinh; **Ha Tay:** 2 females, Ba Vi NP, Cic0269, Cic0270, 800m, 2.vi.2001, Hoang Vu Tru; **Thua Thien Hue:** 1 male, Bach Ma NP, 1200m, V 2003, Ta Huy Thinh; **Ninh Binh:** 1 male, vii.1965 (DZM); **Thanh Hoa:** 1 male, Xuan Hoa, Nhu Xuan, Ho.1.0178, 29.v.2008; **Quang Binh:** 1 male, U Bo pass, Truong Son, Quang Ninh, 550m, 10.v.2007, Pham Hong Thai; **Lao Cai:** 1 male, Tonkin, Chapa, 1500-1700m, fin. VII. 1996, R. Boistel (MNHN); **Ha Noi:** 1 male, Cic0887, 31.v.2004 (IEBR); 2 males, Tonkin, Hanoi, 1911, Adj. Monceau (MNHN); **Lai Chau:** 1 male, Muong Phang, Cic0275, v.2001; **Kon Tum:** 1 male, Ngoc Linh, vi.006; **Nghe An:** 1 male, Khe Kem, Pu Mat NP, Cic1143, 27.iv.2006.

Distribution. Vietnam (Yen Bai, Vinh Phuc, Phu Tho, Lai Chau, Ha Noi, Ha Nam, Ninh Binh, Thanh Hoa, Nghe An, Quang Binh, and Thua Thien-Hue provinces), S. China (including Hainan), Taiwan (including Liudau Island), Laos, Campuchia.

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**TỘC VE SÀU CRYPTOTYMPANINI Handlirsch, 1925
(HEMIPTERA: CICADIDAE) Ở VIỆT NAM**

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TÓM TẮT

Tộc ve sàu Cryptotympanini thuộc phân họ Ve sàu Cicadenae, họ Ve sàu Cicadidae. Tộc này gồm có 19 giống trên thế giới. Ở Việt Nam đã ghi nhận 3 giống: *Chremistica* Stål, 1870; *Salvazana* Distant, 1913 và *Cryptotympana* Stål, 1861. Trong đó, giống *Salvazana* có 1 loài *S. mirabilis* Distant, 1913, giống *Chremistica* có 1 loài *C. viridis* (Fabricius, 1803) và giống *Cryptotympana* có 6 loài: *Cryptotympana aquila* (Walker, 1850), *C. recta* (Walker, 1850), *C. nitidula* Hayashi, 1987, *C. atrata* (Fabricius, 1775), *C. mandarina* Distant, 1891 và *C. holsti* Distant, 1904. Loài *Cryptotympana nitidula* Hayashi, 1987 thuộc giống *Cryptotympana* mới chỉ ghi nhận ở Việt Nam. Trong bài báo này chúng tôi xây dựng khoá định loại đến giống và loài thuộc tộc Cryptotympanini đã ghi nhận ở Việt Nam.