

Additions to the genus *Rhaphuma* Pascoe, 1858 (Coleoptera: Cerambycidae: Cerambycinae: Clytini) from Vietnam

Bổ sung các loài thuộc giống Xén tóc thường Rhaphuma Pascoe, 1858 (Coleoptera: Cerambycidae: Cerambycinae: Clytini) ở Việt Nam

Short communication

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The paper presents a checklist of the genus *Rhaphuma* Pascoe, 1858 belonging to the tribe Clytini from Vietnam. Of the total 26 species, there were eight species newly recorded for the Vietnam's fauna, viz. *Rhaphuma anongi* Gressitt et Rondon, 1970; *Rhaphuma clarina* Gressitt et Rondon, 1970; *Rhaphuma constricta* Gressitt et Rondon, 1970; *Rhaphuma diana* Gahan, 1906; *Rhaphuma eleodina* Gressitt et Rondon, 1970; *Rhaphuma elongata* Gressitt et Rondon, 1970; *Rhaphuma minima* Gressitt et Rondon, 1970 and *Rhaphuma phiale* Gahan, 1906. All species are presented with notes on distribution.

Bài báo thông kê danh sách 26 loài thuộc giống Rhaphuma Pascoe, 1858, trong số đó có 8 loài là ghi nhận mới cho khu hệ Xén tóc của Việt Nam, đó là: Rhaphuma anongi Gressitt et Rondon, 1970; Rhaphuma clarina Gressitt et Rondon, 1970; Rhaphuma constricta Gressitt et Rondon, 1970; Rhaphuma diana Gahan, 1906; Rhaphuma eleodina Gressitt et Rondon, 1970; Rhaphuma elongata Gressitt et Rondon, 1970; Rhaphuma minima Gressitt et Rondon, 1970; Rhaphuma phiale Gahan, 1906. Ngoài ra, bài báo còn cung cấp thông tin về phân bố của mỗi loài ở trong nước cũng như trên thế giới.

Keywords: Coleoptera, Cerambycidae, Cerambycinae, Clytini, distribution, new record

1. Introduction

The tribe Clytini is one of the generically diverse tribus in the Cerambycinae. The tribe Clytini is a large of longhorn beetles that occurs throughout the world, but is most diverse in the Neotropical, Oriental and Palearctic regions. Up to now, there were about 35.000 known species of the tribe Clytini in the world with over 70 genera and the genus *Rhaphuma* is a big genus of the Clytini. The genus *Rhaphuma* was established by Pascoe in 1858. The genus is currently placed in the tribe Clytini and consists of over 170 species in the world. The type species of this genus is *Clytus quadricolor* Castelnau et Gory, 1841. It was described from the Philippines [17].

In Vietnam, the species of Vietnamese *Rhaphuma* have been reported in papers scattered in the literature: Vitalis Salvaza (1919) recorded 2 species; Plant Protection Research Institute, (1976) recorded 4 species; Ta Huy Thinh

& Hoang Vu Tru (2005) recorded 2 species; Hoang Vu Tru, Ta Huy Thinh & Cao Thi Quynh Nga (2009, 2011) recorded 2 species; Cao Thi Quynh Nga & Khuat Dang Long (2014) listed 14 species [1, 4, 5, 14, 15, 19].

Our paper continues to gain an understanding of the fauna of Vietnam and in this paper some of new records of the genus *Rhaphuma* from Vietnam.

2. Materials and methods

Studied specimens were from the insect collection of the Department of Insect Systematics (DIS) at the Institute of Ecology and Biological Resource (Hanoi, Vietnam). All the specimens were collected by netting and light trapping at several localities from Vietnam. The specimens of the longhorn beetles were collected in several surveys organized by entomologists of Institute of Ecology and Biological Resources (IEBR).

Terminology used in this paper follows Gressitt & Rondon (1970) [3]. Abbreviations of localities used in this paper are as follows: BMNH = The Natural History Museum, London, England; BPBM = Bernice Pauahi Bishop Museum, Honolulu, America; CEV = Collection Eduard Vives, Terrassa; CPV = Private collection of Viktora, Kutna Hora, Czech Republic; IZCAS = Institute of Zoology, Chinese Academy of Sciences, Beijing; KPMNH = Kanagawa Prefectural Museum of Natural History, Odawara; MNHN = Muséum National d'Histoire Naturelle, Paris, France; NHR = Naturhistoriska Riksmuseet, Stockholm; OUMNH = Oxford University Museum of Natural History; PPRI = Plant Protection Research Institute; RMNH = Rijksmuseum van Natuurlijke Historie, Leiden; SMTD = Staatliches Museum für Tierkunde, Dresden; ZMC = Zoologisk Museum Copenhagen; ZMUM = Zoological Museum, University of Moscow; N = North; S = South; C = Central; NC = North Central; NE = Northeast; NW = Northwest; SW = Southwest; W = West; the old name of localities used in the literature: Annam = North Central; Cochinchina = Southern Vietnam and Tonkin = Northern Vietnam; NP = National Park; NR = Natural Reserve. The asterisk indicates species newly recorded for the fauna of Vietnam. In-country distribution of the species is followed in order of areas, provinces (in brackets) from north to south, and outside Vietnam distribution of species follows in the alphabetical order.

3. Results and discussion

3.1. Results

Taxonomy

Genus *Rhaphuma* Pascoe, 1858: 240, 241 (Type species: *Clytus 4 color* Castelnau et Gory, 1841) [7].

Diagnosis: Body elongate and narrow. Head with the face subvertical, generally longer than broad, slightly widened below. Antennal insertions fairly close, distinctly raised, antenna lacking spines at apices of segments, antennae subapproximate at the base, rarely longer than the body in the male, sometimes a little longer, sometimes shorter and always shorter than the body in the female. Prothorax oblong-ovate or subcylindrical, longer than broad. Elytra long, very slightly narrowed posteriorly, truncate at apex, the lateral margins sinuate in the middle in some of the forms, nearly straight in others. Leg long and generally rather slender, the hind femora extend past the apex of the elytra in the male. First joint of the hind tarsi as long at least as the remaining the united.

In the world, genus *Rhaphuma* consists of over 170 species (Tavakilian & Chevillotte, 2018). In Vietnam, the genus *Rhaphuma* included twenty six species, among them there are eight new record for Vietnam's fauna and there are ten species with none specimens.

1. *Rhaphuma anongi* Gressitt et Rondon, 1970*
Rhaphuma anongi Gressitt et Rondon, 1970. Cer. Pac. Ins. Mon., 24: 247 (Laos; BPBM).
 Specimens examined: Son La: 1 specimen, Co Ma, Thuan Chau, 1.v.2016, net, leg Hoang Vu Tru; Thua

Thien Hue: 7 specimens, Tra Lenh, A Roang, A Luoi, 28.v.2006, Ce.0552-Ce.0558, 700m, light trap, leg Hoang Vu Tru; Vinh Phuc: 4 specimens, Tay Thien, Tam Dao, 18.v.2004, 500m, net.

Distribution: Vietnam (Son La, Thua Thien Hue, Vinh Phuc), Laos, China.

2. *Rhaphuma bicolor* Pic, 1927
Rhaphuma bicolor Pic, 1927. Mel. Exo.-Ent., 49: 31 (Vietnam: Tonkin; MNHN).
 Specimens examined: None specimens.
 Distribution: Vietnam (Tonkin [12]).
3. *Rhaphuma binhensis* (Pic, 1922)
Chlorophorus binhensis Pic, 1922. Mel. Exot.-Ent., 37:13 (Vietnam: Tonkin: Hoa Binh; MNHN).
 Specimens examined: None specimens.
 Distribution: Vietnam (Nghia Lo [14], Tonkin: Hoa Binh [9]), Laos, China.
4. *Rhaphuma boreovietnamica* Viktora & Tichy, 2017
Rhaphuma boreovietnamica Viktora & Tichy, 2017: 224 (Vietnam: Vinh Phuc: Tam Dao NP; CPV).
 Specimens examined: None specimens.
 Distribution: Vietnam (Vinh Phuc) [18].
5. *Rhaphuma brodskyi* Holzschuh, 1992
Rhaphuma brodskyi Holzschuh, 1992. FBVA – Berichte. 69: 28 (Vietnam: Tonkin: Vinh Phu; CCH).
 Specimens examined: None specimens.
 Distribution: Vietnam (Tonkin: Vinh Phu [6]).
6. *Rhaphuma clarina* Gressitt et Rondon, 1970*
Rhaphuma clarina Gressitt et Rondon, 1970. Cer. Pac. Ins. Mon., 24: 250 (Laos; BPBM).
 Specimens examined: Vinh Phuc: 1 specimen, Me Linh, 25.v.2001, net; 1 specimen, Tam Dao NP, v-vi.2002.
 Distribution: Vietnam (Vinh Phuc), Laos.
7. *Rhaphuma constricta* Gressitt et Rondon, 1970*
Rhaphuma constricta Gressitt et Rondon, 1970. Cer. Pac. Ins. Mon., 24: 243 (Laos; BPBM).
 Specimens examined: Thanh Hoa: 2 specimens, Xuan Hoa, Nhu Xuan, 23.iv.2009, Co.1.5051, Co.1.5052, net.
 Distribution: Vietnam (Thanh Hoa), Laos.
8. *Rhaphuma diana* Gahan, 1906*
Rhaphuma diana Gahan, 1906. Fauna India. Col. 1: 271 (Myanmar; BMNH).
 Specimens examined: Hoa Binh: 1 specimen, Pa Co, Mai Chau, 28.iv.2001, 900m; Phu Tho: 1 specimen, Du, Xuan Son, 11.iv.2004; Vinh Phuc: 5 specimens, Tay Thien, Tam Dao, 18.v.2004, 500m.
 Distribution: Vietnam (Hoa Binh, Phu Tho, Vinh Phuc), Laos, Myanmar.
9. *Rhaphuma eleodina* Gressitt et Rondon, 1970*
Rhaphuma eleodina Gressitt et Rondon, 1970. Cer. Pac. Ins. Mon., 24: 244 (Laos, BPBM).
 Specimens examined: Cao Bang: 1 specimen, Phia Oac NR, Thanh Cong, Nguyen Binh, 25.v-27.vi.2011, net.
 Distribution: Vietnam (Cao Bang), Laos, Myanmar.
10. *Rhaphuma elongata* Gressitt et Rondon, 1970*
Rhaphuma elongata Gressitt et Rondon, 1970. Cer. Pac. Ins. Mon., 24: 240 (China; IZCAS).
 Specimens examined: Hoa Binh: 1 specimen, Pa Co, Mai Chau, 20-21.iv.2002, >1000m.
 Distribution: Vietnam (Hoa Binh), Laos.

11. *Rhaphuma excisa* Holzschuh, 1992
Rhaphuma excisa Holzschuh, 1992. FBVA – Berichte. 69: 36 (Vietnam: Tonkin: Vinh Phu; CCH). Specimens examined: None specimens.
Distribution: Vietnam (Tonkin: Vinh Phu [6]).
12. *Rhaphuma horsfieldi* (White, 1855)
Clytus horsfieldi White, 1855. Cat. Col. Brit. Mus. 8: 284 (Laos; BMNH).
Rhaphuma horsfieldi var. *laoensis* Pic, 1923. Mel. Exo.-Ent., 39: 9 (Laos; MNHN).
Specimens examined: Bac Giang: 2 specimens, Luc Son, Luc Nam, 27.ix.2002, net; Son La: 1 specimen, Copia NR, Co Ma, Thuan Chau, 4.iv.2009, net.
Distribution: Vietnam (Bac Giang, Son La, Tonkin: Chapa [19]), India, Indonesia, Laos, Mianma, China.
13. *Rhaphuma improba* Holzschuh, 1992
Rhaphuma improba Holzschuh, 1992. FBVA – Berichte. 69: 32 (Vietnam: Tonkin: Vinh Phu; CCH). Specimens examined: Vinh Phuc: 2 specimens, Tam Dao NP, 16.vii.1998, 2.v.2013, net.
Distribution: Vietnam (Vinh Phuc, Tonkin: Vinh Phu [6]).
14. *Rhaphuma innotata* Pic, 1927
Rhaphuma innotata Pic, 1927. Mel. Exo.-Ent., 49: 31 (Vietnam: Tonkin: Chapa; MNHN).
Specimens examined: Cao Bang: 1 specimen, Phia Oac NR, Thanh Cong, Nguyen Binh, 13.v.2010, 1500-1600, net, leg Hoang Vu Tru.
Distribution: Vietnam (Cao Bang, Tonkin: Chapa [12]).
15. *Rhaphuma luteopubens* Pic, 1937
Rhaphuma luteopubens Pic, 1937. Mel. Exo.-Ent., 69: 13 (Vietnam: Annam; MNHN).
Specimens examined: None specimens.
Distribution: Vietnam (Annam [13]).
16. *Rhaphuma maceki* Holzschuh, 1992
Rhaphuma maceki Holzschuh, 1992. FBVA – Berichte. 69: 29 (Vietnam: Tonkin: Vinh Phu; CCH). Specimens examined: None specimens.
Distribution: Vietnam (Tonkin: Vinh Phu [6]).
17. *Rhaphuma manipurensis vietnamica* Holzschuh, 1992
Rhaphuma manipurensis vietnamica Holzschuh, 1992. FBVA – Berichte. 69: 29 (Vietnam: Tonkin: Vinh Phu; CCH).
Specimens examined: Vinh Phuc: 2 specimens, Tam Dao NP, v-vi.2002.
Distribution: Vietnam (Vinh Phuc).
18. *Rhaphuma meridiovietnamica* Viktora & Tichy, 2017
Rhaphuma meridiovietnamica Viktora & Tichy, 2017: 228 (Vietnam: Lam Dong: Bao Lam; CPV).
Specimens examined: None specimens.
Distribution: Vietnam (Lam Dong) [18].
19. *Rhaphuma minima* Gressitt et Rondon, 1970*
Rhaphuma minima Gressitt et Rondon, 1970. Cer. Pac. Ins. Mon., 24: 242 (Laos; BPBM).
Specimens examined: Vinh Phuc: 2 specimens, Tam Dao NP, 9-10.vi.2012, 1.vi.2003, net.
Distribution: Vietnam (Vinh Phuc), Laos, Mianma.
20. *Rhaphuma patkaina* Gahan, 1906
Rhaphuma patkaina Gahan, 1906. Fauna India, Col. 1: 272 (India; BMNH).
- Rhaphuma multiinterrupta* Pic, 1923. Mel. Exo.-Ent., 39: 10 (Laos; MNHN).
Rhaphuma multiinterrupta ininterrpta Pic, 1937. Mel. Exo.-Ent., 69: 14 (Vietnam: Annam; MNHN). Specimens examined: Cao Bang: 1 specimen, Phia Oac NR, Thanh Cong, Nguyen Binh, 25.v-7.vi.2011, net; Vinh Phuc: 10 specimens, Tay Thien, Tam Dao, 1-4.vii.2003, 18-19.v.2004, 500-800m, net.
Distribution: Vietnam (Cao Bang, Vinh Phuc), India, Laos, Mianma, China.
21. *Rhaphuma phiale* Gahan, 1906*
Rhaphuma phiale Gahan, 1906. Fauna India, Col. 1: 273 (Mianma; MNHN).
Specimens examined: Vinh Phuc: 2 specimens, Tay Thien, Tam Dao, 19.v.2004, 500-800m, net.
Distribution: Vietnam (Vinh Phuc), Laos, Mianma.
22. *Rhaphuma placida* Pascoe, 1858
Rhaphuma placida Pascoe, 1858. Tra. Ent. Soc. Lon., (2) 4 (6): 240 (Indônia; BMNH).
Specimens examined: Kon Tum: 1 specimen, Dak Ha, Đak Ha, 4.v.2011, light trap.
Distribution: Vietnam (Kon Tum [4]), India, Indone-sia, Laos, Mianma, China.
23. *Rhaphuma quadrimaculata* Pic, 1923
Rhaphuma 4-maculata Pic, 1923. Mel. Exo.-Ent., 39: 10 (Laos; MNHN).
Specimens examined: Hoa Binh: 1 specimen, Pa Co, Mai Chau, 26.iv.2002.
Distribution: Vietnam (Hoa Binh), Laos, Nepal, China.
24. *Rhaphuma rybniceki* Holzschuh, 1992
Rhaphuma rybniceki Holzschuh, 1992. FBVA – Berichte. 69: 30 (Vietnam: Tonkin: Vinh Phu; CCH).
Specimens examined: Hoa Binh: 1 specimen, Hang Kia – Pa Co NR, Mai Chau, 20.iv.2002, 1100m; Vinh Phuc: 1 specimens, Tam Dao NP, 2.iv.2002, 1000-1300m.
Distribution: Vietnam (Hoa Binh, Vinh Phuc).
25. *Rhaphuma rufobasalis* Pic, 1924
Rhaphuma rufobasalis Pic, 1924. Mel. Exo.-Ent., 41: 16 (Vietnam: Tonkin; MNHN).
Specimens examined: None specimens.
Distribution: Vietnam (Tonkin [11]).
26. *Rhaphuma strnadi* Holzschuh, 1992
Rhaphuma strnadi Holzschuh, 1992. FBVA – Berichte. 69: 31 (Vietnam: Tonkin: Vinh Phu; CCH).
Specimens examined: None specimens.
Distribution: Vietnam (Tonkin: Vinh Phu [6])

3.2. Discussion

A total of twenty six species were examined, among them sixteen species identified based on the analysis of fifty two the longhorn beetle specimens of the genus *Rhaphuma* and there were eight species newly recorded for the longhorn beetle fauna of Vietnam, such as: *Rhaphuma anongi* Gressitt et Rondon, 1970; *Rhaphuma clarina* Gressitt et Rondon, 1970; *Rhaphuma constricta* Gressitt et Rondon, 1970; *Rhaphuma diana* Gahan, 1906; *Rhaphuma eleodina* Gressitt et Rondon, 1970; *Rhaphuma elongata* Gressitt et Rondon, 1970; *Rhaphuma minima* Gressitt et Rondon, 1970; *Rhaphuma phiale* Gahan, 1906.

There were ten species previously recorded from Vietnam (Pic, 1924; Pic, 1927; Pic, 1937; Holzschuh, 1992), unfortunately, we could not find any specimens of these species [6, 11, 12, 13].

Regarding the distribution of species, all species the genus *Rhaphuma* from Vietnam are widely distributed over the Oriental region. Among them, there are 11 species known only from Vietnam, namely *Rhaphuma bicolor* Pic, 1927; *Rhaphuma brodskyi* Holzschuh, 1992; *Rhaphuma excisa* Holzschuh, 1992; *Rhaphuma improba* Holzschuh, 1992; *Rhaphuma innotata* Pic, 1927; *Rhaphuma luteopubens* Pic, 1937; *Rhaphuma maceki* Holzschuh, 1992; *Rhaphuma manipurensis vietnamica* Holzschuh, 1992; *Rhaphuma rybniceki* Holzschuh, 1992; *Rhaphuma rufobasalis* Pic, 1924 and *Rhaphuma strnadi* Holzschuh, 1992.

Of the total already known twenty-six *Rhaphuma* species from Vietnam, none species are widely distributed in the country, five species are recorded in both northern east Vietnam and northern west Vietnam, twelve species are only recorded in northern east Vietnam, three species are only recorded in northern west Vietnam, three species are recorded in north of centre Vietnam, two species are recorded in high land Vietnam and none species are recorded in southern Vietnam.

4. Conclusion

A total of twenty six species of the genus *Rhaphuma*, there were eight species newly recorded for the longhorn beetle fauna of Vietnam, included: *Rhaphuma anongi* Gressitt et Rondon, 1970; *Rhaphuma clarina* Gressitt et Rondon, 1970; *Rhaphuma constricta* Gressitt et Rondon, 1970; *Rhaphuma diana* Gahan, 1906; *Rhaphuma eleodina* Gressitt et Rondon, 1970; *Rhaphuma elongata* Gressitt et Rondon, 1970; *Rhaphuma minima* Gressitt et Rondon, 1970; *Rhaphuma phiale* Gahan, 1906.

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