

CHECKLIST OF THE GENUS *PERROTTETIA* KOBELT, 1905 (PULMONATA: STREPTAXIDAE) OF VIETNAM, WITH DESCRIPTION OF A NEW SPECIES

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ABSTRACT: The checklist of the genus *Perrottetia* Kobelt, 1905 of Vietnam includes ten species, of which *P. hongthinhae* n. sp. is described as new. It was collected in Nam Loong Commune, Lai Chau City, Lai Chau Province, Vietnam. The new species differs from *P. dugasti* (Morlet, 1892) in having a single parietal lamella, a strong higher basal lamella, and a rectangular aperture with rounded angles.

KEY WORDS: systematics, Lai Chau, Vietnam, Streptaxidae, *Perrottetia*

INTRODUCTION

The Streptaxidae are carnivorous terrestrial snails from tropical and subtropical areas of America, Africa and Asia (SUTCHARIT et al. 2010). They are diverse in Africa and south-eastern Asia (VAN BENTHEM JUTTING 1954, SIRIBOON et al. 2013). Eight streptaxid genera (*Discartemon*, *Indoartemon*, *Perrottetia*, *Stemmatopsis*, *Haploptychius*, *Oophana*, *Elma*, and *Huttonella*) with thirty eight species have been recorded from Vietnam to date (SCHILEYKO 2011, DO & DO 2015, PÁLL-GERGELY et al. 2015).

The genus *Perrottetia* Kobelt, 1905 is distributed in India, Sri Lanka, Laos, Thailand, Vietnam and south-

ern China (SCHILEYKO 2011, SIRIBOON et al. 2013, INKHAVILAY et al. 2016). Most species of *Perrottetia* from Vietnam have narrow distributions, with five species (*P. daedaleus*, *P. dugasti*, *P. gudei*, *P. messengeri*, and *P. oppidulum*) recorded from north-western, two (*P. cristatellus*, *P. mabille*) from north-eastern, one (*P. aberrata*) from central, and one (*P. simonianus*) from southern Vietnam. This paper aims at providing a list of species of *Perrottetia* Kobelt, 1905 with their distribution in Vietnam (Fig. 1), and description of a new species.

MATERIAL AND METHODS

Streptaxids were collected from evergreen forest, limestone karst and limestone forest in northern Vietnam from 2012 to 2016. The identifications were based on MORLET (1892), BAVAY & DAUTZENBERG (1903, 1908, 1909), KOBELT (1906) and SIRIBOON et al. (2013). Shell height (H), shell width (W), and

apical angle were measured and whorls were counted and interpreted following SIRIBOON et al. (2013). The material is kept at the collections of VNMN_IZ – Vietnam National Museum of Nature; HNUE-OC – Museum of Biology of Hanoi National University of Education, Vietnam.

SYSTEMATIC PART

Family: Streptaxidae J. Gray, 1860

Genus: *Perrottetia* Kobelt, 1905

- Odontartemon* (*Perrottetia*) KOBELT 1905: 91.
Odontartemon (*Perrottetia*) – KOBELT 1906: 108.
Odontartemon (*Perrottetia*) – FORCART 1946: 215.
Oophana (*Perrottetia*) VAN BENTHEM JUTTING 1954: 95.
Perrottetia – ZILCH 1960: 562, 563.
Perrottetia – RICHARDSON 1988: 237.
Perrottetia – SCHILEYKO 2011: 23.
Perrottetia – SIRIBOON et al. 2013: 44, 45.
Perrottetia – DO & DO 2015: 37.
Perrottetia – INKHAVILAY et al. 2016: 36.

Type species: *Helix peroteti* Petit, 1841, subsequent designation (FORCART 1946)

Distribution: The genus is widespread in Asia (India, Sri Lanka, Indochina and China) (KOBELT 1906, SCHILEYKO 2011, SIRIBOON et al. 2013, INKHAVILAY et al. 2016).

Perrottetia aberrata (Souleyet, 1852)

Helix aberrata Souleyet, 1852 in EYDOUX & SOULEYET 1852: 505, pl. 28, figs. 32–34.

Streptaxis aberrata – CROSSE & FISCHER 1863: 355.

Streptaxis aberratus – MÖLLENDORFF 1898: 66.



Fig. 1. Approximate geographical position of the type localities of *Perrottetia* spp. of Vietnam: 1 – *P. aberrata*, 2 – *P. cristatellus*, 3 – *P. daedaleus*, 4 – *P. dugasti*, 5 – *P. gudei*, 6 – *P. mabille*, 7 – *P. messengeri*, 8 – *P. oppidulum*, 9 – *P. simonianus*, 10 – *P. hongthinhiae* n. sp.



Streptaxis aberratus – GUDE 1902: 221.
Perrottetia aberrata – SCHILEYKO 2011: 23.
Type locality: Da Nang, Vietnam
Dimensions: H 5.0, W 7.0 mm
Distribution: The species is known from Da Nang Province in central Vietnam (EYDOUX & SOULEYET 1852, GUDE 1902) (Fig. 1).

***Perrottetia cristatellus* (Möllendorff, 1901)**

Streptaxis (*Odontartemon*) *cristatellus* MÖLLENDORFF 1901: 66.
Streptaxis (*Odontartemon*) *cristatellus* – BAVAY & DAUTZENBERG 1903: 202, pl. VII, figs 10–12.
Streptaxis cristatellus – GUDE 1902: 224.
Odontartemon (*Perrottetia*) *cristatellus* – KOBELT 1906: 116, pl. 59, figs 1–3.
Perrottetia cristatella – ZILCH 1961: 86, pl. 5, fig. 20.
Perrottetia cristatella – SCHILEYKO 2011: 23.
Type locality: Mau Son, Cao Loc, Lang Son, Vietnam
Dimensions: H 2.0, W 5.0 mm
Distribution: The species is known from the provinces Lang Son (Mau Son mountain and That Khe), Cao Bang and Bac Kan (Cho Ra) in northern Vietnam (MÖLLENDORFF 1901, BAVAY & DAUTZENBERG 1903) (Fig. 1).

***Perrottetia daedaleus* (Bavay et Dautzenberg, 1908)**

Streptaxis daedaleus BAVAY & DAUTZENBERG 1908: 230.
Streptaxis daedaleus var. *major* BAVAY & DAUTZENBERG 1908: 231.
Streptaxis daedaleus – BAVAY & DAUTZENBERG 1909: 164, pl. IV, fig. 14.
Oophana daedaleus major – RICHARDSON 1988: 234.
Perrottetia daedalea – SCHILEYKO 2011: 23.
Perrottetia daedaleus – INKHAVILAY et al. 2016: 38, fig. 5C.
Type locality: Bac Ha, Lao Cai, Vietnam
Dimensions: H 3.0–5.0, W 4.0–9.0 mm
Distribution: The species is known only from Lao Cai Province in north-western Vietnam (BAVAY & DAUTZENBERG 1909) (Fig. 1).

***Perrottetia dugasti* (Morlet, 1892)**

Fig. 2

Streptaxis dugasti MORLET 1892: 82.
Streptaxis dugasti – MORLET 1893 (1892): 315, pl. VII, figs 5, 5a, 5b.
Streptaxis dugasti – GUDE 1902: 225.
Perrottetia dugasti – KOBELT 1906: 123, Taf. 61, fig. 13.
Perrottetia dugasti – SCHILEYKO 2011: 23.
Perrottetia dugasti – DO & DO 2015: 38, fig. 3A.

Perrottetia dugasti – INKHAVILAY et al. 2016: 38, fig. 5A.
Type locality: Lai Chau, Vietnam (banks of the Da River, Lai Chau Province, Vietnam)
Dimensions: H 3.0, W 4.0–6.5 mm
Distribution: The species is known from the provinces Lao Cai, Lai Chau and Son La in north-western Vietnam (MORLET 1892, SCHILEYKO 2011, DO & DO 2015, INKHAVILAY et al. 2016) (Fig. 1).

***Perrottetia gudei* (Fulton, 1915)**

Streptaxis gudei FULTON 1915: 322.
Streptaxis gudei var. *minor* FULTON 1915: 322.
Perrottetia gudei – SCHILEYKO 2011: 23.
Type locality: Bac Ha, Lao Cai, Vietnam
Dimensions: H 5.0–6.0, W 6.5–8.0 mm
Distribution: The species is known only from the districts Bac Ha and Muong Khuong of Lao Cai Province in north-western Vietnam (FULTON 1915, SCHILEYKO 2011) (Fig. 1).

***Perrottetia mabillei* (Bavay et Dautzenberg, 1903)**

Streptaxis (*Odontartemon*) *mabillei* BAVAY & DAUTZENBERG 1903: 203, pl. VII, figs 13–15.
Odontartemon (*Perrottetia*) *mabillei* – KOBELT 1906: 114, Taf. 59, figs 13–15.
Streptaxis (*Odontartemon*) *mabillei* – DAUTZENBERG & FISCHER 1908: 170.
Perrottetia mabillei – SCHILEYKO 2011: 23
Type locality: Cho Ra, Ba Be, Bac Kan, Vietnam
Dimensions: H 5.0, W 7.0 mm
Distribution: The species is known from the provinces Bac Kan (Cho Ra), Lang Son (That Khe) and Cao Bang (Trung Khanh) in north-eastern Vietnam (DAUTZENBERG & FISCHER 1908, SCHILEYKO 2011) (Fig. 1).

***Perrottetia messengeri* (Bavay et Dautzenberg, 1908)**

Fig. 3

Streptaxis messengeri BAVAY & DAUTZENBERG 1908: 229.
Streptaxis messengeri var. *minor* BAVAY & DAUTZENBERG 1908: 230.
Streptaxis messengeri – BAVAY & DAUTZENBERG 1909: 163, pl. IV, figs 9–12, 13.
Perrottetia messengeri – SCHILEYKO 2011: 23
Type locality: Phong Tho, Lai Chau, Vietnam
Dimensions: H 3.5–5.0, W 6.0–10.0 mm
Distribution: The species is known only from Phong Tho District of the province Lai Chau in north-western Vietnam (BAVAY & DAUTZENBERG 1909, INKHAVILAY et al. 2016) (Fig. 1).



Fig. 2–4. Shells of *Perrottetia* spp.: 2 – *P. messengeri* (HNUE-OC 216: Vietnam, Lai Chau Province, Phong Tho District, Khong Lao Commune, limestone areas, $22^{\circ}35'02''\text{N}$, $103^{\circ}23'52''\text{E}$, 1,289 m; 14.07.2015), 3 – *P. dugasti* (HNUE-OC 201: collection data as *P. messengeri*), 4 – *P. hongthinhae* n. sp. (holotype, VNMN_IZ 000.000.153: Vietnam, Lai Chau Province, Nam Loong Commune, Lai Chau City, $22^{\circ}25'16''\text{N}$, $103^{\circ}22'25''\text{E}$, 1,226 m; 12.07.2015). Photo: DO DUC SANG. Bar equals 2 mm

***Perrottetia oppidulum* (Bavay et Dautzenberg, 1908)**

Streptaxis oppidulum BAVAY & DAUTZENBERG 1908: 231.

Streptaxis oppidulum – BAVAY & DAUTZENBERG 1909: 165, pl. IV, figs 5–8.

Streptaxis oppidulum var. *major* – BAVAY & DAUTZENBERG 1912: 1, pl. I, fig. 1.

Perrottetia oppidulum – SCHILEYKO 2011: 24.

Type locality: Bac Ha, Lao Cai, Vietnam

Dimensions: H 3.0–4.0, W 3.5–8.0 mm

Distribution: The species is known from the provinces Lao Cai (Bac Ha District) and Tuyen Quang (Hong Gioi mountain) in northern Vietnam (BAVAY & DAUTZENBERG 1909, SCHILEYKO 2011) (Fig. 1).

***Perrottetia simonianus* (Heude, 1890)**

Streptaxis simonianus HEUDE 1890: 151, pl. XXXV, fig. 26.

Streptaxis simonianus – FISCHER 1891: 18.

Perrottetia simoniana – SCHILEYKO 2011: 24.

Type locality: Tay Ninh, Vietnam

Dimensions: H 13.0, W 8.0 mm

Distribution: The species is known only from the province Tay Ninh in southern Vietnam (HEUDE 1890, SCHILEYKO 2011) (Fig. 1).

***Perrottetia hongthinhae* n. sp.**

Fig. 4

Material: Holotype (VNMN_IZ 000.000.153) and Paratypes (HNUE-OC 215: 2 shells) – both from the type locality, leg. DO DUC SANG, CH., 12.07.2015.

Type locality: Limestone forests in Nam Loong Commune, Lai Chau City, Lai Chau Province, Vietnam (22°25'16"N, 103°22'25"E, 1,226 m a.s.l., Fig. 1).

Etymology: The new species is dedicated to my wife Nguyen Thi Hong Thinh.

Differential diagnosis: *Perrottetia hongthinhae* n. sp. differs from *P. dugasti* (Morlet, 1892) in having a single parietal lamella, a strong higher basal lamella, and a rectangular aperture with rounded angles.

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Table 1. Shell measurements (mm) of the new species *Perrottetia hongthinhae*: shell height (H), shell width (W), apical angle (AA)

Specimen	H	W	AA
Holotype (VNMN_IZ 000.000.153)	3.3	5.8	21.3
Paratype 1 (HNUE-OC 215)	3.2	5.7	22.1
Paratype 2 (HNUE-OC 215)	3.2	5.6	24.8

Compared to *P. messengeri* (Bavay et Dautzenberg, 1908), the new species has a smaller shell with weak transverse ridges, and the body whorl moderately expanded. Compared to its congeners from Vietnam (*P. aberrata*, *P. daedalus*, *P. gudei*, *P. mabillei*, and *P. simonianus*), *P. hongthinhae* n. sp. has a relatively smaller shell, and the profiles of the shell base are quite different in all five species. The new species differs from *P. unidentata* (Inkhavilay et Panha, 2016) in its smooth shell surface, smaller size (H 3.2–3.3, W 5.6–5.8), and in having a rectangular aperture with rounded angles.

Description: Shell oblique-heliciform, white and translucent, with six whorls, weakly convex spire and distinct suture. Shell glossy with transverse ridges on upper surface. Embryonic shell large, about 2½ whorls; subsequent whorls regularly coiled. Body whorl axially deflected. Aperture rectangular with rounded angles, peristome discontinuous; parietal callus relatively thick. Lip thickened, broadly expanded and reflected; shallow sinulus present. Apertural dentition with very large, strong parietal lamella, one palatal lamella, one large basal lamella, one strong collumellar lamella and one small supracolumellar lamella. Umbilicus widely open and shallow (see Fig. 4).

Measurements: Table 1

Distribution: The species is known only from the type locality (Fig. 1).

Remarks: No live specimens have been found to date.

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