

***Amphidromus jonabletti* and *Amphidromus hejingi*, two new species of *Amphidromus*
(Mollusca: Gastropoda: Camaenidae) from Vietnam**

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Abstract: Two new species belonging to the genus *Amphidromus* Albers, 1850 and originating from Vietnam are described and compared with six other species of this genus: *Amphidromus johnabbasi* Thach, 2017, *Amphidromus yenlinhae* Thach & Huber, 2017, *Amphidromus mariae* Thach & Huber, 2017, *Amphidromus ngocanhi* Thach, 2017, *Amphidromus bramvanderbijli* Thach, 2019 and *Amphidromus qiongensis* He & Zhou, 2017.

Introduction: *Amphidromus* is a genus within the family **Camaenidae** which includes many species collected in Vietnam. At the end of 2018, two more species belonging to this genus were collected. They were not listed in the works by Parkinson et al. (1987), Abbott (1989), Dharma (2005), Van der Bijl et al. (2010), Stanisc et al. (2010, 2017), Schileyko (2011), Tan et al. (2011), Parsons (2014), Raheem et al. (2014), Sutcharit et al. (2015), Inkhavilay et al. (2017), Lok & Tan (2018), Thach (2005, 2007, 2012, 2016, 2017, 2018). In this article, they are described as new to science.

Abbreviations:

MNHN: National Museum of Natural History, Paris, France

NHMUK: Natural History Museum, London, UK

NNT: Collection Dr Thach

SH: Shell height

SW: Shell width

AH: Aperture height

BH: Body whorl height

Systematic account:

Class **Gastropoda** Cuvier, 1797

Superfamily **Helicoidea** Rafinesque, 1815

Family **Camaenidae** Pilsbry, 1895

Subfamily **Camaeninae** Pilsbry & Olsson, 1954

Genus ***Amphidromus*** Albers, 1850

Type species: *Helix perversus* Linnaeus, 1758
(subsequent designation by Martens, 1896)

***Amphidromus jonabletti* sp.nov.**

Figs 1-8

Type material: **Holotype** 32.3 mm high in NHMUK (Figs 1-4, 8) NHMUK 20190672. **Paratypes:** All from type locality, **Paratype 1:** 34.3 mm (Figs 5-6) and **Paratype 2:** 27.2 mm (Fig. 7) in NNT.

Type locality: Krông Păk District, Đắk Lắk Province, Central Vietnam.

Habitat: Tree dweller.

Diagnosis: The new species can readily be recognised by its slightly cylindrical shape with its height much larger than its width and widely-spaced, black axial stripes that are accompanied by a red line at the left side.

Description: Shell medium-sized for the genus (measuring between 27.2mm and 34.3 mm in height), slightly cylindrical in shape with sinistral coiling (3/3 collected specimens are sinistral). Spire rather tall, sutures deep. Body whorl slightly inflated and measuring 62.7% of shell height (see table 1), periphery rounded. Shell width 44.7% of height, outer surface ornamented with long and widely-spaced axial stripes reaching the parietal wall. Sculpture consists of axial striae and

carmine-red subsutural bands. Aperture elongate with external pattern visible within and flared outward, occupying 43.7% of shell height, outer lip moderately thick, slightly reflected and strongly curved at posterior part. Columella curved and bordered by purple-red stripe, umbilicus open.

Colour white with black axial stripes and apex, carmine-red line at left side of axial stripes.

No	1	2	3
SH (mm)	32.3	34.3	27.2
SW (mm)	14.2	14.3	13.0
SW/SH	0.44	0.42	0.48
Mean SW/SH	0.447		
BH (mm)	20.3	21.1	17.2
BH/SH	0.63	0.62	0.63
Mean BH/SH	0.627		
AH (mm)	14.0	14.4	12.5
AH/SH	0.43	0.42	0.46
Mean AH/SH	0.437		

Table 1

Discussion: The new species is close to *A. johnabbasi* Thach, 2018 (Fig. 9) in having a white outer lip and columella, but the axial stripes are more regularly-spaced, the subsutural bands are carmine-red (not white), the shell shape more cylindrical, the aperture more rounded at the anterior part and the columella is bordered by a carmine-red stripe.

A. yenlinhae Thach & Huber, 2017 (Fig. 10) resembles the new species in its widely-spaced axial stripes, but mainly differs in its green (not white) background colour, closed (not open) umbilicus, red columella, red early whorls, less elongate aperture, not carmine-red subsutural bands and presence of a yellow stripe on the parietal wall.

A. mariae Thach & Huber, 2017 (Fig. 11) resembles the new species in its black and widely-spaced axial stripes, but is mainly distinguished by the shortness of these axial stripes at the anterior ends (not reaching parietal wall), a black outer lip, red columella, a turmeric-yellow background colour and a more inflated body whorl.

The new species mainly differs from *A. ngocanhi* Thach, 2017 (Fig. 12) in not having a dark brown aperture, a white outer lip and columella, no greenish background colour and black (not white) axial stripes.

Etymology: This new species is named in honour of Dr Jonathan Ablett from the UK for his great contribution to the malacological study.

Amphidromus hejingi sp. nov.

Figs 13-20

Type material: **Holotype** 28.2 mm in MNHN (Figs 13-16, 20a) MNHN-IM-2000-34291. **Paratypes:** All from type locality, **Paratype 1:** 26.2.0mm (Figs 17-18), **Paratype 2:** 27.0 mm (Fig. 19), **Paratype 3:** 28.2 mm (not illustrated), **Paratype 4:** 26.1mm (not illustrated), **Paratype 5:** 24.1mm (not illustrated) in NNT.

Type locality: Krông Bông District, Đắk Lắk Province, Central Vietnam.

Habitat: Among leaf litter around trees.

Diagnosis: The new species is characterised by a small adult size, translucent shell, very wide aperture, broad and yellowish subsutural bands, the presence of two black, widely-spaced spiral bands on anterior body whorl and many brown, square dots arranged into spiral bands on spire whorls.

Description: Shell small for the genus (measuring between 24.1 mm and 28.2 mm in height), thin and elongate-tapering in outline with sinistral coiling (6/6 collected specimens are sinistral). Spire low, sutures shallow. Body whorl swollen and measuring 70.5% of shell height, periphery rounded (see table 2). Shell width 55.5% of height, outer surface ornamented with two short and widely-spaced spiral bands on body whorl, many faint axial lines not reaching sutures and numerous squarish dots arranged into spiral bands on spire whorls. Sculpture consists of axial striae and broad, yellowish subsutural bands along sutures. Aperture wide, occupying 51.8% of shell height and flared outward, outer lip moderately thick and reflected. Umbilicus open, columella curved.

Colour pale yellow with black spiral bands, greenish axial lines, brown dots, black apex and whitish aperture.

Discussion: The new species resembles *A. bramvandebijli* Thach, 2019 (Figs 21-22) in the presence of two black spiral bands on the anterior body whorl, but differs mainly in the white (not black) outer lip, the white (not purplish-red) columella, less yellow background

colour and lacking the green line along the suture of the body whorl.

A. qiongensis He & Zhou, 2017 (Figs 23-24) from Hainan; China is mainly distinguished from the new species in the thicker and more solid shell, larger adult size (28.4-36.1 mm high), brown (not black) and broader, longer spiral bands, purple (not white) outer lip and columella, closed umbilicus, lack of greenish axial lines on the outer surface, much yellower background colour, and the band along the suture is narrower and brown (not yellowish).

No	1	2	3	4	5	6
SH (mm)	28.2	26.2	27.0	28.2	26.1	24.1
SW (mm)	15.3	14.4	14.9	15.2	15.0	13.8
SW/SH	0.54	0.55	0.55	0.54	0.58	0.57
Mean SW/SH	0.555					
BH (mm)	19.6	18.1	18.7	19.9	19.0	17.0
BH/SH	0.70	0.69	0.69	0.71	0.73	0.71
Mean BH/SH	0.705					
AH (mm)	14.3	13.4	13.8	14.0	14.3	12.8
AH/SH	0.51	0.51	0.51	0.50	0.55	0.53
Mean AH/SH	0.518					

Table 2

Etymology: This new species is named in honour of He Jing from China for his contribution to the malacological study.

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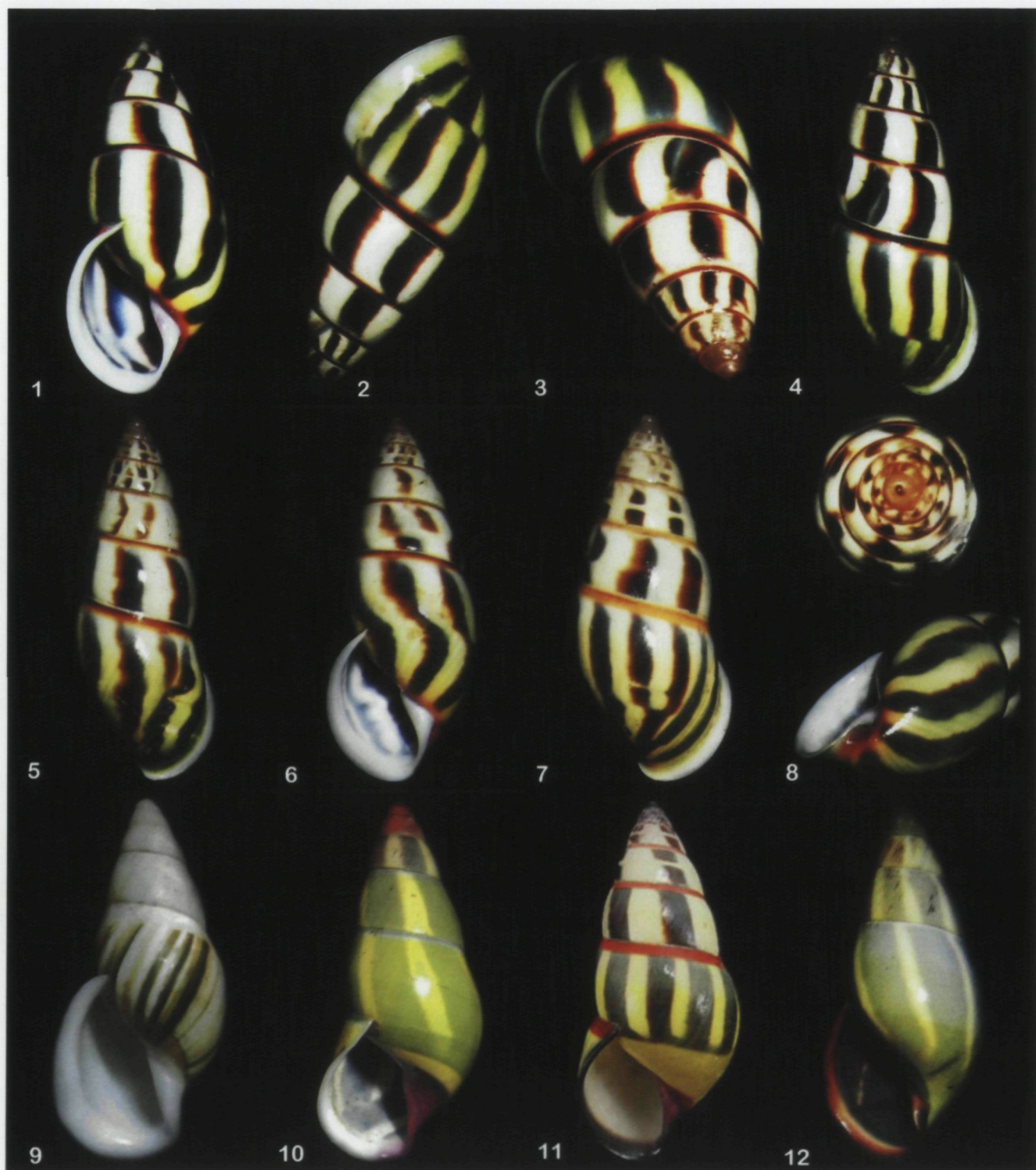


Plate 1:

1-8: *Amphidromus jonabletti* sp.nov.,
Krông Pák, Đắk Lắk, Vietnam.

1-4: Holotype, NHMUK, 32.3 mm

5-6: Paratype 1, NNT, 34.3 mm.

7: Paratype 2, NNT, 27.2 mm

8: Holotype with enlarged apex (top) and
umbilicus (bottom).

9: *Amphidromus johnabbasi* Thach, 2017, 43.9 mm.

10: *Amphidromus yenlinhae* Thach & Huber, 2017,
37.4 mm.

11: *Amphidromus mariae* Thach & Huber, 2017,
41.4 mm (photo by Andy Tan)

12: *Amphidromus ngocanhi* Thach, 2017, 33.5 mm

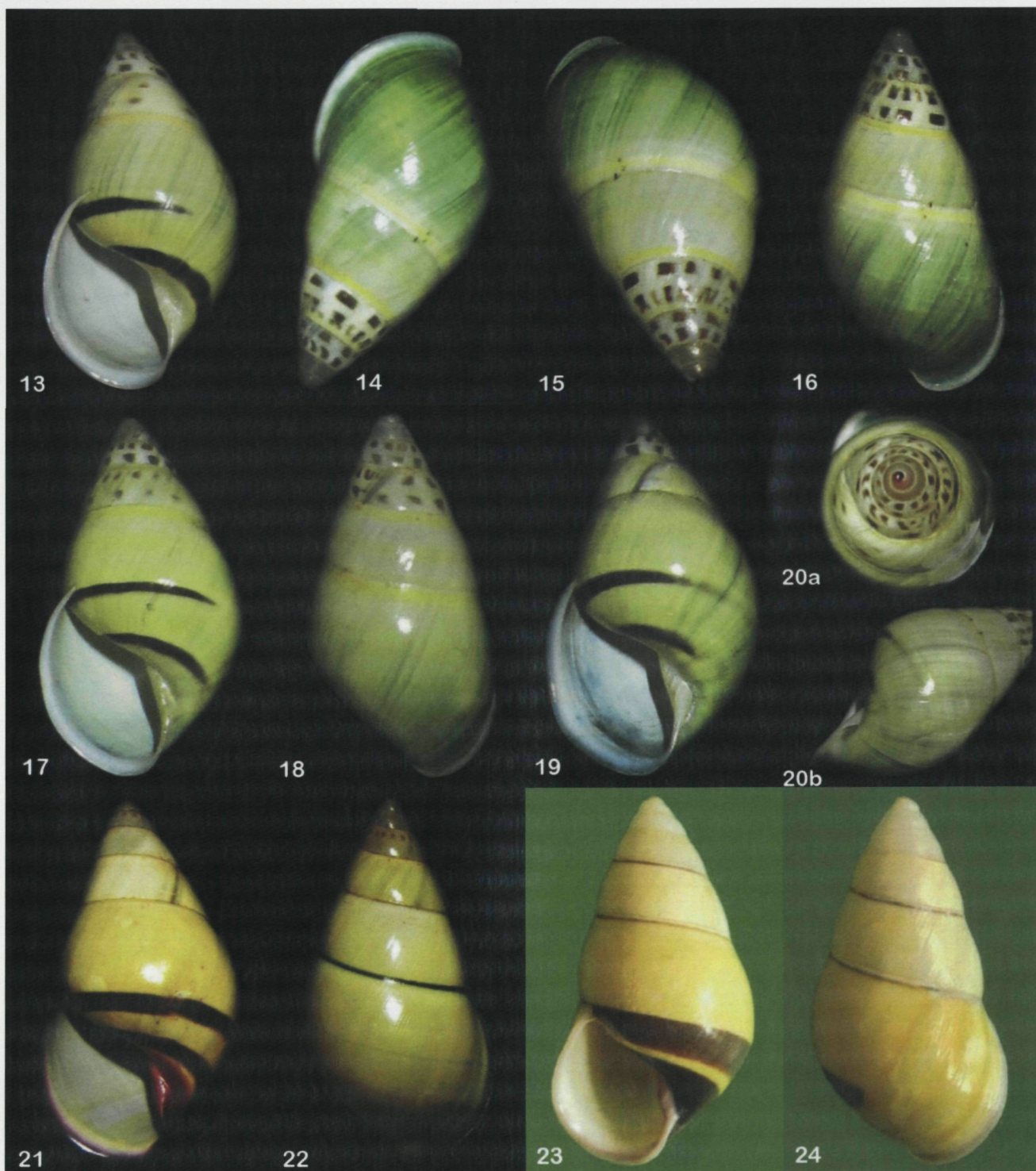


Plate 2

13-20: *Amphidromus hejingi* sp. nov.

Krông Bông, Đắk Lắk, Vietnam.

13-16: Holotype, MNHN, 28.2 mm.

17-18: Paratype 1, NNT, 26.2 mm.

19: Paratype 2, NNT, 27.0 mm.

20a: Holotype with enlarged apex.

20b: Paratype 2 with enlarged umbilicus.

21-22: *Amphidromus bramvanderbijli* Thach, 2019,
31.8 mm.

23-24: *Amphidromus qiongensis* He & Zhou, 2017,
30.0 mm. Photo from He & Zhou, 2017.