

***Amphidromus siongkiati* and *Amphidromus bramvanderbijli*, two new species of *Amphidromus* (Mollusca: Gastropoda: Camaenidae) from Vietnam and Correction of Errata in “New Shells of South Asia”**

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Keywords: GASTROPODA, HELICOIDEA, CAMAENIDAE, *Amphidromus*, *Mauritia*, Chư Păh, Gia Lai, Phước An, Đắc Lắc, Vietnam, new taxon.

Abstract: Two new species belonging to the genus *Amphidromus* Albers, 1850 are described from Vietnam and compared to four other species within this genus: *Amphidromus cochinchinensis* (Pfeiffer, 1857), *Amphidromus lindstedti* (Pfeiffer, 1857), *Amphidromus globonevilli* Sutcharit & Panha, 2015 and *Amphidromus sinensis* (Benson, 1851).

Introduction: *Amphidromus* is a genus within the family **Camaenidae** with many species collected in Vietnam. In January 2019, two further species belonging to this genus were collected. They were not listed in the works by Parkinson, Hemmen & Groh (1987), Abbott (1989), Dharma (2005), Van der Bijl et al. (2010), Stanisc, Shea, Potter & Griffiths (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). So, in this article, they are described as new to science.

Abbreviations:

LKCNHM: Lee Kong Chian Natural History Museum, National University of Singapore

NHMUK: Natural History Museum, London, UK

RMNH: Naturalis Center of Biodiversity, Leiden, The Netherlands

NNT: Collection Dr Thach

AH: Aperture height

BH: Body whorl height

SH: Shell height

SW: Shell width

Systematics

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 siongkiati* sp. nov.**

Figs 1-8

Type material: Holotype (Figs 1, 2, 6, 8b) LKCNHM. Registration number ZRC.MOL.13887, 38.8mm.

Paratypes: All from type locality, **Paratype 1** (Figs 4, 5, 7): 34.0 mm, NNT; **Paratype 2** (Figs 3, 8a): 36.0 mm, NNT; **Paratype 3:** 39.0mm (not illustrated), **Paratype 4:** 40.5mm (not illustrated); **Paratype 5:** 36.8mm (not illustrated).

Type locality: Chư Păh District, Gia Lai Province, Central Vietnam.

Habitat: Among leaf litter around trees.

Diagnosis: The new species can readily be recognised by the chalky white colour, constricted sutures, black apex, pink early whorl and black stripe bordering the umbilicus, followed by a reddish-brown stripe.

Description: Shell medium-sized for the genus (measuring between 34.0 mm and 40.5 mm in height), elongate-tapering in outline with both dextral and sinistral coilings. Spire tall, sutures constricted. Body

whorl inflated and measuring 65.8% of shell height (see table 1), periphery rounded. Shell width 46.8% of height, outer surface not ornamented, except some widely-spaced dots arranged into spiral bands on early whorls. Sculpture of weak axial striae and orange subsutural bands. Aperture elongate, occupying 47.5% of shell height and pointed at anterior end, outer lip moderately thick, highly calloused and reflected. Columella also calloused, umbilicus open and bordered by a black stripe that is followed by another reddish-brown stripe. Colour white with pink early whorls and black apex.

No	1	2	3	4	5	6
SH (mm)	38.8	34.0	36.0	39.0	40.5	36.8
SW (mm)	19.2	17.5	16.8	16.3	19.1	16.7
SW/SH	0.49	0.51	0.47	0.42	0.47	0.45
Mean SW/SH	0.468					
AH (mm)	19.2	16.1	17.5	18.2	18.3	17.5
AH/SH	0.49	0.47	0.49	0.47	0.45	0.48
Mean AH/SH	0.475					
BH (mm)	26.5	22.6	23.9	24.9	26.2	24.3
BH/SH	0.68	0.66	0.66	0.64	0.65	0.66
Mean BH/SH	0.658					

Table 1

Etymology: This new species is named in honour of Dr Tan Siongkiat from Singapore for his contributions to the malacological study.

Discussion: The new species is close to *A. cochinchinensis* (Figs 9-10) in its white colour, but mainly differs in having pink early whorls, a black apex, the presence of orange subsutural bands and a black spiral band bordering the umbilicus that is followed by reddishbrown stripe.

A. lindstedti (Figs 11-12) resembles the new species in its white colour when bleached, but is mainly distinguished by the not black umbilicus, narrower spire, broader columella, less constricted sutures, less inflated body whorl and lack of orange subsutural bands.

Amphidromus bramvanderbijli sp. nov.

Figs 13-20

Type material: **Holotype** (Figs 13-16, 20a) in RMNH, registration RMNH.MOL.338519. 30 mm high **Paratypes:** all from type locality. **Paratype 1** (Figs 17, 20b): 31.8 mm; **Paratype 2** (Figs 18-19): 30.6 mm. Both in NNT.

Type Locality: Phước An District, Đắc Lắc Province, South Vietnam.

Habitat: Among leaf litter.

Diagnosis: The new species is readily recognisable by its black outer lip, purplish red columella, green subsutural bands, the presence of two black spiral bands at the base of the body whorl and the straight-sided and rapidly tapering spire.

Description: Shell small for the genus (average height between 30.0 and 31.8 mm), elongate, tapering, sinistral with width 54.7% of height (see table 2). Spire moderately tall, sutures deep. Body whorl slightly inflated and measuring about 69 % of shell height, periphery rounded. Ornamentation consists of widely-spaced sets of two parallel brown axial lines on spire whorls and many close-set green axial lines on the dorsal side of the body whorl. Sculpture with weak axial riblets and well-visible subsutural bands. Aperture wide and occupying 51.3% of shell height, outer lip moderately thick and reflected with red line at inner margin. Umbilicus narrowly open, columella curved and bordered by reddish brown band. Colour yellow with black apex and outer lip, purplish-red columella and green subsutural bands.

No	1	2	3
SH (mm)	30.0	31.8	30.6
SW (mm)	15.9	18.2	16.6
SH/SH	0.53	0.57	0.54
Mean SW/SH	0.547		
BH (mm)	20.8	22.1	21.2
BH/SH	0.69	0.69	0.69
Mean BH/SH	0.690		
AH (mm)	14.7	16.4	16.2
AH/SH	0.49	0.52	0.53
Mean AH/SH	0.513		

Table 2

Etymology: This new species is named in honour of Bram Van der Bijl from the Netherlands for his contributions to malacological study.

Discussion: The new species is close to *A. globonevilli* (Figs 21-22) in having two black spiral bands at the base, but mainly differs in a not swollen body whorl, not constricted sutures, straight-sided spire, black outer lip and purplish-red columella.

A. sinensis (Figs 23-24) is mainly distinguished from the new species in having a more inflated body whorl, more constricted sutures, a white outer lip and columella, an aperture with external pattern visible within and the lack of green axial lines on the dorsal side of the body whorl.

ERRATA – New Shells of South Asia (2018)

The name *Mauritia arabica huberi* Thach, 2018 on pages 26, 103, 104 of the book “New Shells of South Asia” published in 2018 is to be replaced by *Mauritia arabica khanhhoaensis* Thach, 2019 to avoid homonymy.

Acknowledgements: I express thanks to the Natural History Museum of London, UK for the photos of *A. cochinchinensis*, *A. lindstedti*, *A. globonevilli* and *A. sinensis* and to the reviewers for useful comments.

References:

- Abbott, R.T.**, 1989. *Compendium of landshells*. American Malacologists Inc., Florida, USA, 240 pp.
- Dharma, B.**, 2005. *Recent & Fossil Shells of Indonesia*. ConchBooks, Hackenheim, Germany, 432pp.
- Inkhavilay, K., Sutcharit, C. & Panha, S.**, 2017. Taxonomic review of the tree snail genus *Amphidromus* Albers, 1850 (Pulmonata: Camaenidae) in Laos, with the description of two new species. *European Journal of Taxonomy* 330: 1-40
- Lok, A.F.S.L. & Tan, S.K.**, 2018. A review of the Singapore status of the green tree snail, *Amphidromus atricallosus perakensis* Fulton, 1901 and its biology. *Nature in Singapore* 1 : 225–230.
- Parkinson, B., Hemmen, J. & Groh, K.**, 1987. *Tropical land shells of the world*. Verlag Christa Hemmen, Wiesbaden, Germany, 279 pp.
- Parsons, J.**, 2014. Lectotype designation and descriptions of two new subspecies of *Amphidromus* (*Syndromus*) *laevus* Müller, 1774. *Biodiversity Journal* 5 (2): 175-196.
- Raheem, D.C., Taylor, H., Ablett, J., Preece, R.C., Aravid, N.A. & Naggs, F.**, 2014. *A Systematic Revision of the Land*

Snails of the Western Ghats of India. Supplement 4, Museum of Natural History, 294pp.

Schileyko, A.A., 2011. Check-list of land pulmonate molluscs of Vietnam (Gastropoda: Stylommatophora). *Ruthenica* 21 (1) 68pp.

Stanisic, J., Shea, M., Potter, D. & Griffiths, O., 2010. *Australian Land Snails, Volume 1*. Bioculture Press, Mauritius, 591pp.

Stanisic, J., Shea, M., Potter, D. & Griffiths, O., 2017. *Australian Land Snails, Volume 2*. Bioculture Press, Mauritius, 592pp.

Sutcharit, C., Ablett, J., Tongkerd, P., Naggs, F. & Panha, S., 2015. Illustrated type catalogue of *Amphidromus* Albers, 1850 in Natural history Museum, London, and descriptions of two new species. *Zookeys* 492: 49-105.

Tan, S.K., Chan, S.Y. & Panha, S., 2011. A New subspecies of *Amphidromus* (*Amphidromus*) *atricallosus* from Singapore (Mollusca: Gastropoda: Camaenidae). *The Raffles Bull. Zoology* (1): 39-46.

Thach, N.N., 2005. *Shells of Vietnam*. ConchBooks, Hackenheim, Germany, 430pp.

Thach, N.N., 2007. *Recently collected Shells of Vietnam*. L’Informatore Piceno & NNT, Ancona, Italy, 380pp.

Thach, N.N., 2012. *New Records of Molluscs from Vietnam*. 48HrBooks Co., USA, 427pp.

Thach, N.N., 2016. *Vietnamese New Mollusks*. 48HrBooks Co., USA, 205pp.

Thach, N.N., 2017. *New Shells of Southeast Asia*. 48HrBooks Co., USA, 128pp.

Thach, N.N., 2018. *New Shells of South Asia*. 48HrBooks Co., USA, 173pp.

Van der Bijl, A.N., Moolenbeek, R.G. & Goud, J., 2010. *Mattheus Marinus Schepman (1847-1919) and his contribution to Malacology. A malacological biography and bibliography*. Netherlands Malacological Society, 200pp, Leiden, The Netherlands.

Plate 1:

1-8: *Amphidromus siongkiati* sp.nov.

Gia Lai, Vietnam.

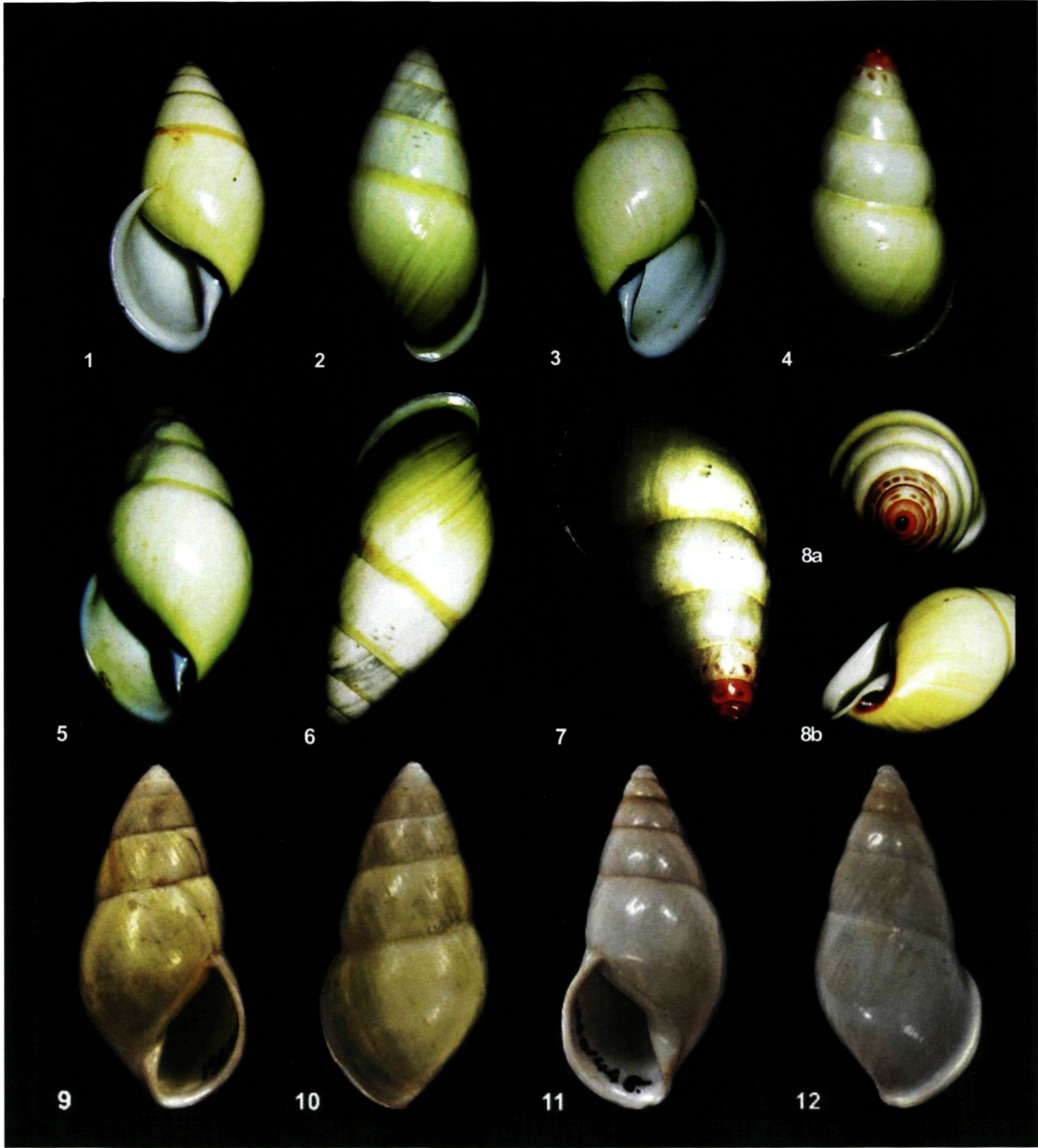
1,2,6,8b: Holotype 38.8mm with ventral and dorsal sides, reflected outer lip and enlarged umbilicus. LKCNHM

4,5,7: Paratype 1, 34.0mm with dorsal and ventral sides and spire view. NNT

3,8a: Paratype 2, 36.0mm with ventral side and enlarged apex in NNT

9-10: *Amphidromus cochinchinensis* (Pfeiffer, 1857)
for comparison, photo of NHMUK

11-12: *Amphidromus lindstedti* (Pfeiffer, 1857)
for comparison, photo of NHMUK



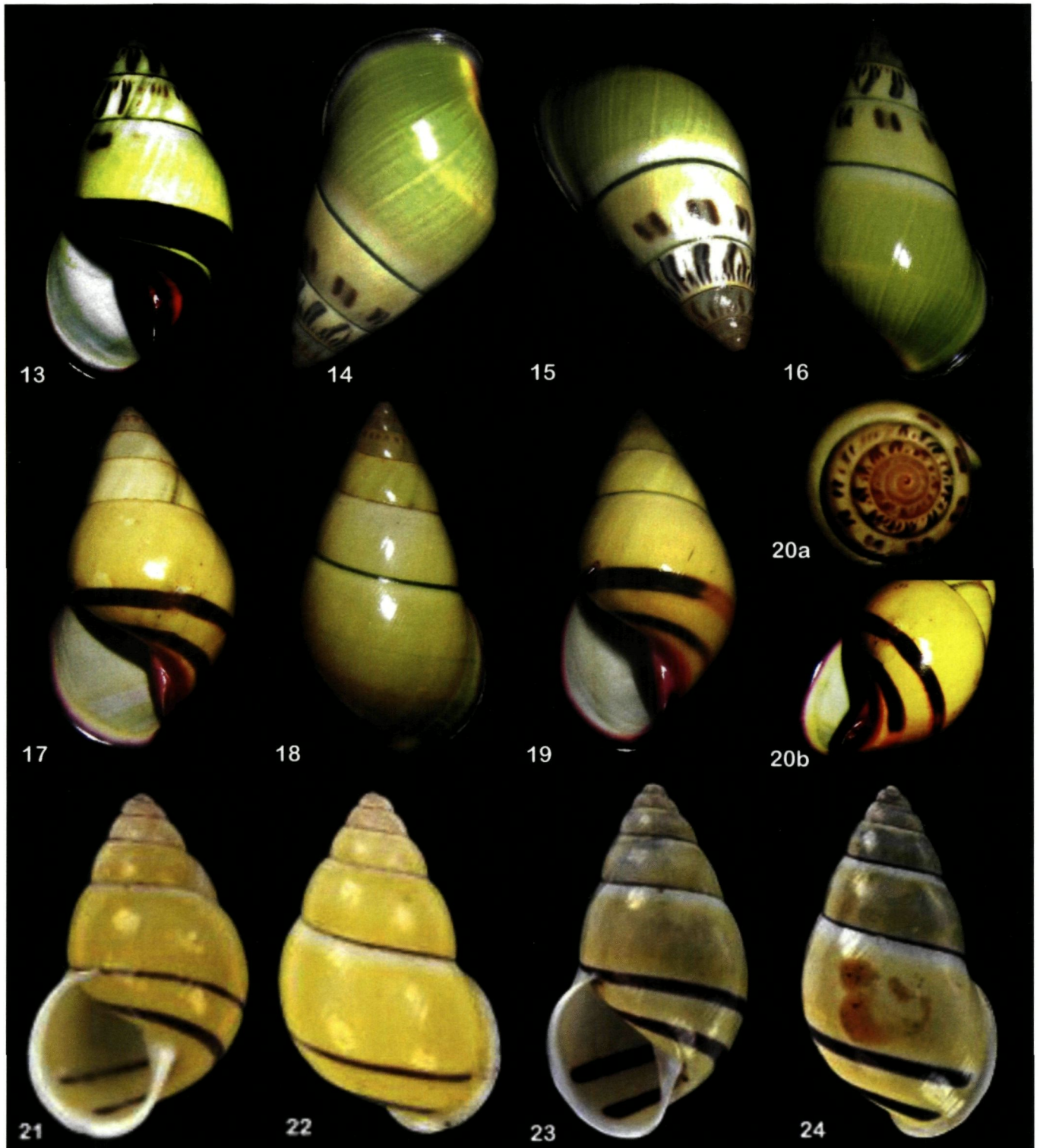


PLATE 2

13-20: *Amphidromus bramvanderbijli* sp.nov., Đắc Lắc Province, Vietnam.

13,14,15,16,20a: Holotype 30.0mm with ventral & dorsal sides, reflected outer lip & enlarges apex, RMNH.

17,20b: Paratype 1, 31.8mm with ventral side and enlarged umbilicus, NNT.

18,19: Paratype 2, 30.6mm with dorsal and ventral sides, NNT.

21-22: *Amphidromus globonevilli* Sutcharit & Panha, 2015. For comparison, photo of NHMUK

23-24: *Amphidromus sinensis* (Benson, 1851). For comparison, photo of NHMUK