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Ganesella ***tamchuc*** sp. nov., a new Camaenid species from Ninh Bình Province, Northern Vietnam (Gastropoda: Eupulmonata: Camaenidae)

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ABSTRACT. An impressive, medium-sized new camaenid species, *Ganesella* ***tamchuc*** sp. nov., is described from Ninh Bình Province, northern Vietnam. *Ganesella* ***tamchuc*** sp. nov. is similar to *Ganesella emma* (Pfeiffer, 1863) in its general shell coloration pattern but differs by having a smaller shell size; three distinct color belts on the shell surface, including a white belt at the keel and two dark brown belts situated above and below the keel; strong radial ribs that protrude from the shell surface and also present at the umbilicus and within the aperture; a distinctly keeled last whorl that becomes weak behind the peristome; and a widely open umbilicus through which all whorls are visible.

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Ganesella ***tamchuc*** sp. nov. – новый вид камаенид из провинции Ниньбинь, Северный Вьетнам (Gastropoda: Eupulmonata: Camaenidae)

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РЕЗЮМЕ. Описан среднего размера новый вид камаенид – *Ganesella* ***tamchuc*** sp. nov., обнаруженный в провинции Ниньбинь на севере Вьетнама. *Ganesella* ***tamchuc*** sp. nov. сходна с *Ganesella emma* (Pfeiffer, 1863) по общей окраске раковины, но отличается меньшими размерами; наличием трёх выраженных цветовых поясов на поверхности раковины, включая белый пояс на киле и два тёмно-коричневых пояса, расположенных выше и ниже киля; сильно выраженными радиальными рёбрами, выступающими над поверхностью раковины, а также присутствующими в области пупка и внутри устья; отчётливо килеватым последним оборотом; и широко открытым пупком, через который видны все обороты.

Introduction

Ninh Bình Province in northern Vietnam possesses abundant limestone habitats that are highly suitable for terrestrial mollusk communities, which are particularly diverse in both species richness and population density. However, the terrestrial snail fauna of Ninh Bình remains poorly documented. In contrast, the faunas of neighboring regions such as Lào Cai, Sơn La, Lạng Sơn, Cao Bằng, Quảng Ninh, Hải Phòng, and Thanh Hóa provinces have been surveyed since the late 19th and early 20th centuries [Mabille, 1887a, 1887b; Möllendorff, 1901; Bavay, Dautzenberg, 1899, 1909a, 1909b; Dautzenberg, Fischer H., 1905, 1906; Schileyko, 2011; Páll-Gergely, Hunyadi, 2019].

The family Camaenidae is the largest group of pulmonate land snails in Vietnam, exhibiting considerable morphological diversity, including vibrant coloration, polymorphism, and relatively large shell size. Most camaenid species are strictly confined to limestone habitats, while some occur in other environments but are typically represented by only a few individuals [Schileyko, 2003, 2004, 2011; Páll-Gergely *et al*., 2018, 2019, 2022, 2023; Wu *et al*., 2025]. Nevertheless, our understanding of this family remains limited in several aspects, including species diversity, distribution patterns, and phylogenetic relationships.

A distinctive camaenid species was discovered during a field survey in December 2024 in the Tam Chúc limestone area, Ninh Bình Province, northern Vietnam. Morphological comparisons with known taxa indicate that it represents a species new to science. Here, we describe this new species of the family Camaenidae based on its shell morphology and distributional data.

Material and methods

Description of the new species is based solely on conchological characters, as no living individuals have been found to date. Shell measurements were taken in millimeters (mm), accurate to the nearest 0.1 mm. Shell height (SH) was measured from the apex to the lowest point on the basal side of the aperture, while shell width (SW) was measured at the widest point perpendicular to the coiling axis. The number of whorls was counted with a precision of 0.25 whorls, following the method of Kerney and Cameron [1979]. Multiple photographs of shells were taken using a Nikon® Z6 II camera equipped with a macro lens. These images were subsequently stacked and merged into a single composite image using Adobe Photoshop. Specimens are deposited in the following scientific collections: Zoological Collection of Biological Museum, VNU University of Science (Vietnam National University, Hanoi), Vietnam (ZVNU); Vietnam National Museum of Nature, Hanoi, Vietnam (VNMN), and the Vietnam Forest Museum (VFM), Forest Inventory and Planning Institute.

Abbreviations.

DDS: Collection Do Duc Sang (Hanoi, Vietnam)

MNHN: Muséum National d'Histoire Naturelle, Paris

Taxonomy

Class Gastropoda Cuvier, 1795
Subclass Heterobranchia Gray, 1840
Order Stylommatophora Schmidt, 1855
Superfamily Helicoidea Rafinesque, 1815
Family Camaenidae Pilsbry, 1895
Subfamily Camaeninae Pilsbry, 1895

Genus *Ganesella* Blanford, 1863

Helix (*Ganesella*) W.T. Blanford, 1863: 86.

Helix (*Trochomorphoides*) Nevill, 1878: 80 (type species: *Helix acris* Benson, 1859, OD).

Darwininitium Budha, Mordan in Budha *et al.*, 2012: 21 (type species: *Darwininitium shiwalikianum* Budha et Mordan, 2012, OD).

Ganesella – Zilch, 1966: 201; Schileyko, 2011: 48; Sutcharit *et al*., 2019: 54.

Type species. *Helix capitium* Benson, 1848 (by subsequent designation)

Remarks. The shell morphology of *Ganesella* species exhibits a wide range of variation, particularly in size, coloration, and surface sculpture. However, several diagnostic characteristics of this genus can be summarized as follows: Shell trochoid to moderately conical, moderately thin to solid, comprising 4–6 convex whorls. The last whorl is rounded to angular, with or without a peripheral keel, and slightly descends anteriorly. Coloration light and monochromatic, sometimes with dark belts, spots, or streaks. Protoconch smooth. Teleoconch with irregular, thin radial ridges and spiral lines. Aperture broadly ovate, moderately oblique, with variably reflected margins. Umbilicus narrow, open, and rarely closed. Shell size highly variable, with height and width reaching up to 25–27 mm [Schileyko 2003; Budha *et al*., 2012; Sutcharit *et al*., 2019].

According to Páll-Gergely *et al*. [2020], the taxonomic placement of most Camaenid species in Southeast Asia needs to be clarified based on genital anatomy or molecular data. The genitalia and radula of the genus *Ganesella* were described by Sutcharit *et al*. [2019].

Ganesella ***tamchuc*** sp. nov.
(Figs 1, 3)

Zoobank registration: urn:lsid:zoobank.org:act:C69C88F9-C0D2-4A15-B5ED-E0635332A892

Type material. Holotype ZVNU.MOL. 050 (shell height 8.7 mm, shell width 14.2 mm, whorls 4¼; Figs 1, 3), Vietnam, Ninh Bình Province, Tam Chúc Ward, limestone karst mountains with disturbed vegetation, near the Tam Chúc Pagoda (20°35'10.5"N, 105°49'03.8"E), leg. D.S. Do and H.N. Dao, 28 December 2024.

Paratypes. Three specimens (ZVNU.MOL 051), three specimens (VNMN-IZ 000.002.350), three specimens (VFM. MOL 0001), six specimens (D.S. Do Collection), were all collected from the type locality together with the holotype.

Diagnosis. Shell medium-sized, with a slightly elevated spire; ochre-colored, with a white belt on the keel and two additional dark brownish belts located above and below the peripheral keel; last whorl angular, bearing a distinct keel at the periphery; radial ribs very strong, relatively regular, and prominently protruding from the surface shell, with some ribs not extending from the suture to the umbilicus (half ribs); aperture rounded, relatively large, and oriented horizontally.

Description. Shell dextral, medium-sized, rather thick-walled, and depressed globose; dorsal side slightly elevated with a protruding apex; ochre-colored, with a white belt on the keel and two additional dark brownish belts above and below the

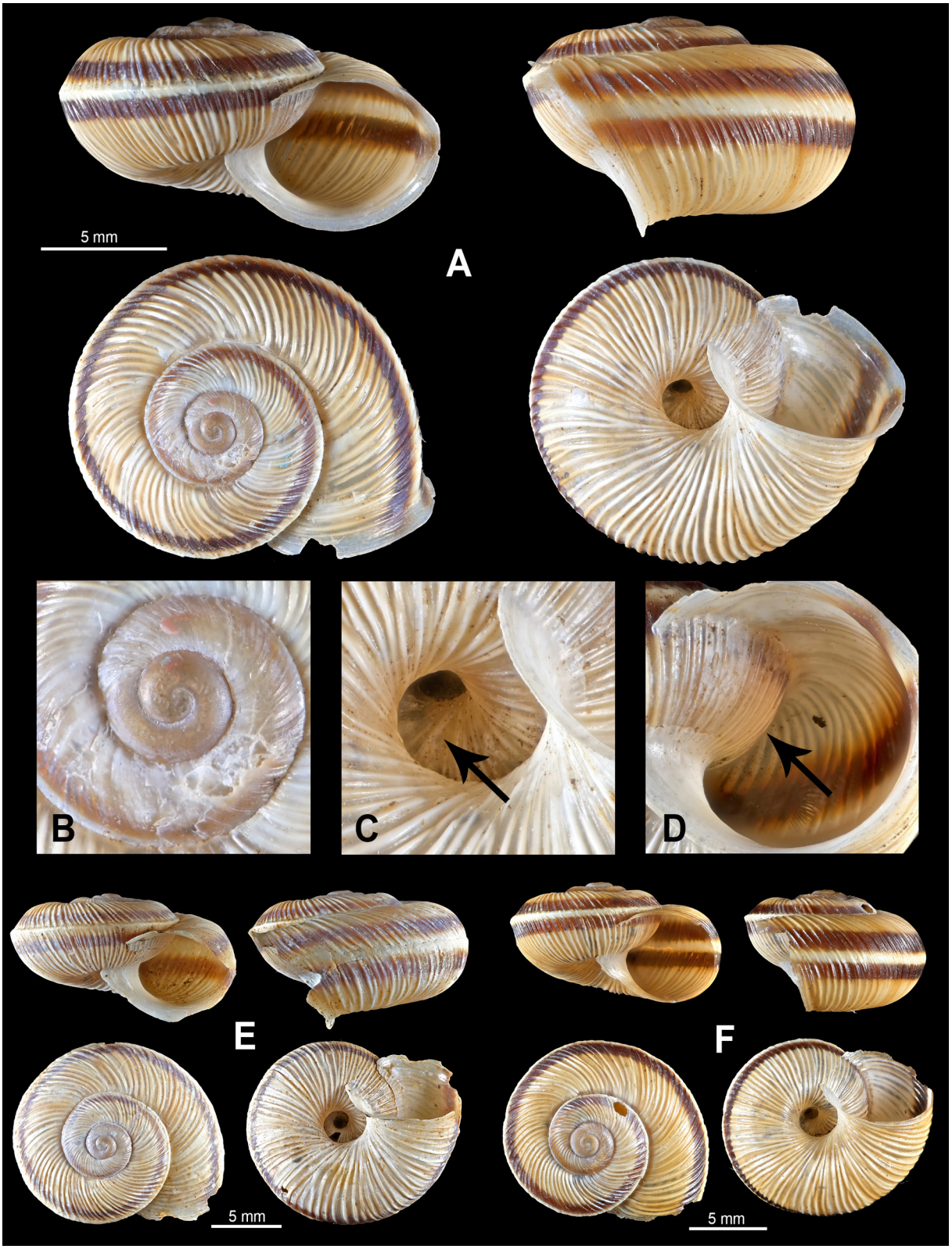

FIG. 1. *Ganesella* ***tamchuc*** sp. nov. **A–D.** Holotype ZVNU.MOL. 050. **A.** Shell morphology (apertural view, dorsal view, ventral view, and side view). **B.** Details of the protoconch. **C.** Details of the umbilicus. **D.** Details of the aperture. **E.** Paratype VNMN-IZ 000.002.350. **F.** Paratype VFM. MOL 0001. The arrow indicates ribs at the umbilicus area (C) and in the aperture (D). Photos: Nguyen T.S. and Do D.S.

peripheral keel; entire shell consists of 4–4¼ whorls, protoconch consists of 2.0 whorls, with radially arranged finely ribs, slightly elevated compared to the first teleoconch whorl; transition between protoconch and teleoconch is clearly visible because of the increasingly abrupt size of ribs; teleoconch consists of

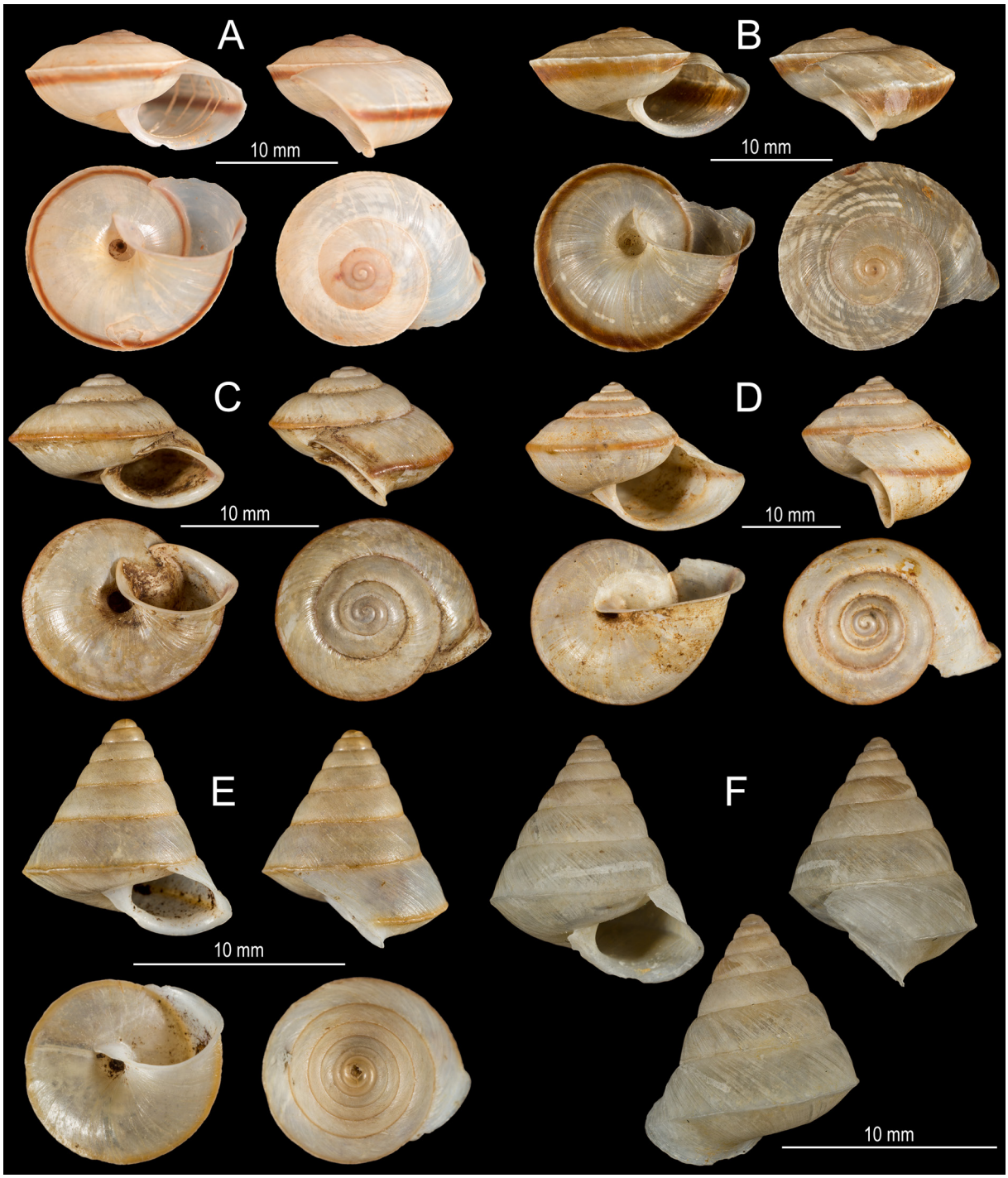

FIG. 2. **A, B.** *Ganesella emma* (Pfeiffer, 1863), **A**. *Helix* (*Plectotropis*?) *chaudroni* (MNHN-IM-2000-32867), **B.** ZVNU, specimen from Pưa Lai Village, Tô Múa Commune, Sơn La Province, Vietnam, **C.** *Ganesella saurivonga* (Bavay, Dautzenberg, 1900) (MNHN-IM-2000-1984), **D.** *Ganesella demangei* (Dautzenberg, H. Fischer, 1906) (MNHN-IM-2000-1873), **E, F.** *Ganesella perakensis* (Crosse, 1879), **E.** syntype MNHN-IM-2000-1964 from Perak, **F.** MNHN-IM-2000-34064, holotype of *Ganesella thachi* F. Huber, 2018 from Nam Định, Vietnam (A, C–F from MNHN).

2.5 rapidly increasing whorls, which are separated by a rather deep suture; sculpture of teleoconch dominated by very strong, relatively regular radial ribs, which are protruding from the surface shell, forming distinct crenulations at the periphery; most radial ribs are complete, i.e., extending from the suture to the umbilicus, while others are incomplete (half ribs), situated between two complete ribs; the last whorl bears 59–71 radial ribs in total, including 17–21 half ribs (n = 16); at the ventral surface, most of ribs spiral into the umbilicus. The last whorl has a slightly sharp peripheral keel but not distinctly on the area behind the peristome; spiral striations sparse throughout protoconch and teleoconch. Aperture

A **B**

FIG. 3. Study area where the new species was collected, Tam Chúc Pagoda Complex, Tam Chúc Ward, Ninh Bình Province, northern Vietnam. **A.** General view of the collection site. **B.** Closer view of the sampling area.

rounded, relatively large, and oriented horizontally; peristome discontinuous, moderately expanded, and slightly reflected in direction of the umbilicus; parietal callus is inconspicuous and appears as a thin calcareous layer, strong ribs are still present on the parietal wall and the inner areas of the aperture. Umbilicus open, relatively wide (occupying 20–28% of shell diameter), slightly eccentric, and partially covered by the reflected peristome, but all whorls remain visible.

Differential diagnosis. The new species resembles *Ganesella emma* (Pfeiffer, 1863) in general shell coloration pattern, but differs by the following characters: smaller shell size; three distinct color belts (one white and two dark brown) on the shell surface, whereas *G. emma* bears only a single dark brown band below the keel; last whorl angulated at the periphery but indistinct behind the peristome; shell sculpture with very strong, elevated radial ribs that are prominently raised above the shell surface, also present around the umbilicus and extending into the aperture; umbilicus widely open, exposing all whorls. Compared to *Ganesella demangei* (Dautzenberg, H. Fischer, 1906), the new species differs by its smaller shell size, distinctly raised radial ribs present on both dorsal and ventral surfaces, the presence of three color belts on the shell surface, a widely open umbilicus, and a rounded aperture with a peristome lacking an angle between the parietal and basal sides. The new species, *Ganesella* ***tamchuc*** sp. nov., is similar in size to *Ganesella saurivonga* (Bavay et Dautzenberg, 1900), but differs in possessing a flattened globose shell (vs. conical in the latter), with strongly elevated radial ribs forming deep grooves, and three distinct color bands on the shell surface, including a white band at the keel and two dark brown bands located above and below it (see Fig 1, 2). Compared to other *Ganesella* species recorded from Vietnam, the new species can be easily distinguished by its flattened globose shell, strongly developed radial ribs raised from the shell surface, the presence of three color belts at the periphery of the whorls, and a widely open umbilicus.

Measurements (in mm). SH 8.5–9.0, SW 14.0–15.1, AH 6.2–6.7, AW 7.3–7.6 (n = 16)

Etymology. The species name *tamchuc* refers to the Tam Chúc Pagoda complex in Kim Bảng District, Hà Nam Province, northern Vietnam, where the type specimens were collected.

Ecology. This new species was found under leaf litter in limestone rock crevices on steep karstic limestone mountains with disturbed vegetation (Fig. 3). Other terrestrial snail species recorded from the same microhabitat (leaf litter and topsoil) include *Aphanoconia hungerfordiana* (Möllendorff, 1882), *Gyliotrachela crossei* (Morlet, 1886), *Gulella bicolor* (Hutton, 1834), *Georissa decora* Möllendorff, 1900, *Allopeas clavulinum* (Potiez et Michaud, 1838), *Chalepotaxis infantilis* (Gredler, 1881), *Cyclotus* sp., etc.

Distribution. The species is currently known only from the type locality in northern Vietnam.

Remarks. *Ganesella* ***tamchuc*** sp. nov. is a variable species in terms of shell size, coloration of the protoconch and teleoconch, as well as the number and size of radial ribs on the shell surface (59–71 ribs on the last whorl). Some radial ribs are incomplete, not extending fully from the suture to the umbilicus (i.e., half ribs). To date, no living specimens have been found.

Checklist of *Ganesella* species found in Vietnam

Ganesella acris (Benson, 1859)

Helix acris Benson, 1859: 387, 388.

Satsuma lantenoisi Dautzenberg, Fischer H., 1906: 360, pl. 9, figs 10, 11 (type locality: Tonkin: Ha-Giang = Hà Giang, Vietnam; Siam = Thailand).

Satsuma acris – Dautzenberg, Fischer H., 1908: 181.
Helix (*Trochomorphoides*) *acris* – Bavay, Dautzenberg, 1909b: 199.
Helix (*Trochomorphoides*) *acris* var. ex forma *parakensis* – Bavay, Dautzenberg, 1909b: 200.
Ganesella acris acris – Schileyko, 2011: 48.
Ganesella acris – Richardson, 1985: 129; Schileyko, 2003: 1518; Marzuki *et al*., 2012: 70, figs 31D, 53B; Preece *et al*., 2022: 204, fig. 98A.

Type locality. Teria Ghát montium Khasiæ (Khasia Hills, Teria Ghát, India).

Remarks. This species has previously been recorded from several localities in northern Vietnam, including Ha-Giang (Hà Giang Province), Ha-Lang (Hạ Lang District, Cao Bằng Province), Pac-Kha (Bắc Hà, Lào Cai Province) [Dautzenberg, Fischer H., 1906, 1908; Bavay, Dautzenberg, 1909b].

Ganesella concavospira (Möllendorff, 1901)

Satsuma concavospira Möllendorff, 1901: 73.
Ganesella concavospira – Fischer, Dautzenberg, 1904: 402; Zilch, 1966: 203, pl. 5, fig. 34; Richardson, 1985: 134; Schileyko, 2011: 48.

Type locality. Than-moi, Tonkin (Thanh Mọi ?, Lạng Sơn Province).

Remarks. Based on the type locality and the lectotype image (SMF 8503) provided by Zilch (1966), it is suggested that *Satsuma concavospira* may be a synonym of *Ganesella perakensis* [Möllendorff, 1901; Zilch, 1966].

Ganesella demangei (Dautzenberg et H. Fischer, 1906)
(Fig. 2D)

Helix (*Papuina*) *demangei* Dautzenberg, H. Fischer, 1906: 147, pl. 5, figs 1–3.
Ganesella demangei – Schileyko, 2011: 48.

Type locality. Tonkin: Su-Yut, Rivière Noire (Black River valley, northern Vietnam).

Remarks. The Black River, also known as the Đà River or Bờ River, flows through the Vietnamese provinces of Lai Châu, Điện Biên, Sơn La, and Phú Thọ Provinces, before joining the Red River in Phú Thọ Province.

Ganesella emma (Pfeiffer, 1863)
(Figs 2A–B)

Helix emma Pfeiffer, 1863 (“1862”): 273; 1863: 209, pl. 55, figs 4–7.
Helix (*Ganesella* ?) *lamyi* Dautzenberg, Fischer H., 1905: 91–93, pl. 3, figs 10–12 (type locality: Tonkin, Ile Krieu = Hạ Long Bay, Quảng Ninh, Vietnam).
Helix (*Plectotropis* ?) *chaudroni* Bavay, Dautzenberg, 1909a (“1908”): 242 (type locality: Cam-Duong, Gia-Phu = Cam Đường, Gia Phú, Lào Cai Province; Phong-Tho = Phong Thổ, Lai Châu Province, Vietnam); 1909: 193, pl. 8, figs 1–3.
Aegista (*Plectotropis*) *emma* – Richardson, 1983: 11.
Plectotropis (?) *chaudroni* – Schileyko, 2011: 38.
Euplecta huberi Thach, 2018: 41, figs 551–553 (type locality: Bosavan, Laos).
Aegista emma – Inkhavilay *et al*., 2019: 85, figs 40C, 57E.
Ganesella emma – Páll-Gergely *et al*., 2020: 60, figs 26–29.

Type locality. Lao Mountains, Camboja (Cambodia or Laos).

Remarks. The species exhibits variation in shell shape, coloration, and sculpture among populations, although most variants possess a dark brown belt below the peripheral keel [Páll-Gergely *et al*., 2020].

Ganesella eximia (Möllendorff, 1901)

Satsuma eximia Möllendorff, 1901: 72.
Helix (*Trochomorphoides*) *eximia* – Bavay, Dautzenberg, 1909b: 202, textfig. A.
Ganesella eximia – Fischer H., Dautzenberg, 1904: 402; Zilch, 1966: 204, pl. 5, fig. 35; Schileyko, 2011: 48.

Type locality. Mansongebirge (Mẫu Sơn, Lạng Sơn Province, Vietnam).

Remark. To date, this species is only known from its type locality.

Ganesella fulvescens (Dautzenberg et H. Fischer, 1908)

Satsuma fulvescens Dautzenberg, H. Fischer, 1908: 179, 180, pl. 5, figs 7–9.
Helix (*Trochomorphoides*) *fulvescens* – Bavay, Dautzenberg, 1909b: 200.
Ganesella fulvescens – Richardson, 1985: 135; Schileyko, 2011: 48.

Type locality. Nam-Nhang (Nặm Nàng ?, Thạch An, Cao Bằng Province, Vietnam).

Remark. To date, this species is only known from its type locality.

Ganesella huberi Thach, 2018

Ganesella huberi Thach, 2018: 69, 70, figs 909–911.

Type locality. Lộc Lâm, Bảo Lộc, Lâm Đồng Province, southern Vietnam.

Remarks. This species possesses a dark brown peripheral belt on the whorls, which gradually increases in both width and color intensity along the direction of shell coiling.

Ganesella hyperteleia (Morlet, 1892)

Helix (*Plectotropis*) *hyperteleia* Morlet, 1892: 82, 83; Morlet, 1893 (“1892”): 316, 317, pl. 6, fig. 2, 2a, b.
Plectotropis hyperteleia – Schileyko, 2011: 39.
Ganesella hyperteleia – Fischer H., Dautzenberg, 1904: 402; Richardson, 1985: 137; Inkhavilay *et al*., 2019: 103, 104, fig. 52F.

Type locality. Kham-Keute, dans le Laos (around Kham Kheuth District, Bolikhamxay Province, Laos).

Remarks. According to Schileyko [2011], this species may occur in Vietnam; however, no evidence has yet been found to support this suggestion.

Ganesella leptopomopsis (Dautzenberg et H. Fischer, 1908)

Satsuma leptopomopsis Dautzenberg, H. Fischer, 1908: 180, 181, pl. 4, figs 17–19.
Ganesella leptopomopsis – Richardson, 1985: 139; Schileyko, 2011: 48; Inkhavilay *et al*., 2019: 104, 104, fig. 53A.

Type locality. Lung-Phoi, près That-Khé (Village Lũng Phầy, Thất Khê Commune, Lạng Sơn Province, Vietnam).

Remarks. A yellowish-brown belt is present along the sutures and at the periphery of the last whorl. This species has also been recorded in Xieng Khouang Province, Laos [Inkhavilay *et al*., 2019].

Ganesella oxytropis (Möllendorff, 1901)

Satsuma oxytropis Möllendorff, 1901: 113, 114.
Ganesella oxytropis – Fischer, Dautzenberg, 1904: 402; Zilch, 1966: 205, pl. 5, fig. 36; Richardson, 1985: 140; Schileyko, 2011: 48.

Type locality. Insula Ke-bao (Cái Bầu Island, Vân Đồn Special Zone, Quảng Ninh Province, Vietnam; formerly known as Ke Bao Island).

Remarks. To date, this species is only known from the type locality.

Ganesella perakensis (Crosse, 1879) (Figs 2E–F)

Helix (*Geotrochus*) *perakensis* Crosse, 1879: 199, pl. 8, fig. 4.
Geotrochus perakensis Mabille, 1887b: 95; Morlet, 1889: 126; Fischer P., 1891: 24.
Helix (*Geotrochus*) *perakensis* var. *subperakensis* Pilsbry, 1891: 82, pl. 18, figs 46, 47 (type locality: Tonquin = Tonkin, northern Vietnam).
Helix (*Trochomorphoides*) *acris* var. ex forma *parakensis* – Bavay, Dautzenberg, 1909b: 200.
Helix (*Trochomorphoides*) *acris* var. ex colore *saturata* Bavay, Dautzenberg, 1909b: 200 (type locality: Muong Bo).
Helix (*Trochomorphoides*) *acris* var. ex colore *albina* Bavay, Dautzenberg, 1909b: 200 (type locality: Pac-Kha).
Ganesella acris perakensis – Richardson, 1985: 130; Schileyko, 2011: 48.
Ganesella perakensis – Fischer H., Dautzenberg, 1904: 403; Sutcharit *et al*. 2019: fig. 4d; 2020: 33, figs 5C, 12A.
Ganesella thachi F. Huber, 2018 in Thach, 2018: 70, figs 912–917 (type locality: Nam Định City, Nam Định Province, north Vietnam), **new synonym**

Type locality. Perak (Perak State, Malaysia).

Remarks. This species has previously been recorded from several localities in northern Vietnam, including Pac-Kha, Muong-Hum, Muong-Bo (Bắc Hà, Mường Hum, Mường Bo, Lào Cai Province), That-Khe (Thất Khê, Lạng Sơn Province), Bac-Kan (Bắc Kạn Province), Baie d'Along et mongtagne de l'Éléphant, Tonkin (Hạ Long Bay, Quảng Ninh and Elephant Mountain, An Lão, Hải Phòng City) [Fischer H., Dautzenberg, 1904; Bavay, Dautzenberg, 1909]. *Ganesella thachi*, described from the suburb of Nam Định City, Nam Định Province, northern Vietnam, is herein considered a junior synonym of *G. perakensis*, as no species-specific differences in morphological traits are found to justify their separation [Thach, 2018; Páll-Gergely *et al*., 2020].

Ganesella phonica (Mabille, 1887)

Helix phonica Mabille, 1887a: 3.
Geotrochus phonicus – Mabille, 1887b: 94, pl. 2, figs 8, 9; Fischer P., 1891: 24.
Helix phonica – Pilsbry, 1891: 83.
Ganesella phonica – Fischer H., Dautzenberg, 1904: 403; Schileyko, 2011: 49.
Helix (*Trochomorphoides*) *phonica* – Bavay, Dautzenberg, 1909b: 201, pl. 8, figs 15, 16.

Type locality. Tonkin (northern Vietnam).

Remarks. This species was recorded from Bắc Kạn Province, northeastern Vietnam, by Bavay and Dautzenberg [1909b].

Ganesella platyconus (Möllendorff, 1901)

Satsuma platyconus Möllendorff, 1901: 114.
Ganesella platyconus – Fischer H., Dautzenberg, 1904: 403; Zilch, 1966: 206, pl. 5, fig. 37; Schileyko, 2011: 49.

Type locality. Tonkin (northern Vietnam, from title).

Remarks. In the original description, Möllendorff (1901) did not mention a type locality, except for 'Tonkin' in the title. Later, Zilch (1966) provided a photograph of the lectotype (SMF 8534) and specified the locality as 'Tonkin: Bah-mun' (Ba Mùn Island, Minh Châu Commune, Vân Đồn Special Zone, Quảng Ninh Province, Vietnam).

Ganesella procera Gude, 1902

Ganesella procera Gude, 1902: 333; 1903: 266, pl. 7, figs 21–24.
Helix (*Trochomorphoides*) *procera* – Bavay, Dautzenberg, 1909b: 202, 203.
Ganesella procera – Richardson, 1985: 141; Schileyko, 2011: 49.

Type locality. Than-moi, Tonkin (most probably refers to Thanh Mọi, Lạng Sơn Province, Vietnam).

Remark. To date, this species is only known from the type locality.

Ganesella producta (Dautzenberg et H. Fischer, 1908)

Satsuma producta Dautzenberg, Fischer H., 1908: 182, 183, pl. 5, figs 1–6.
Helix (*Buliminopsis*) *producta* – Bavay, Dautzenberg, 1909b: 204.

Ganesella producta – Schileyko, 2011: 49.

Type locality. Nam-Nhang (Nặm Nàng ?, Thạch An, Cao Bằng, Vietnam).

Remark. To date, this species is only known from the type locality.

Ganesella rostrella (Pfeiffer, 1863)

Helix rostrella Pfeiffer, 1863 ("1862"): 270; Pfeiffer, 1868: 379, pl. 88, figs 1–3.
Bradybaena (*Torobaena*) *rostrella*: Richardson, 1983: 46.
Euplecta hueae Thach et Huber in Thach, 2018: 42, figs 557–559.
Geotrochus rostrella – Fischer P., 1891: 24.
Bradybaena (?) *rostrella* – Schileyko, 2011: 40.
Ganesella rostrella – Fischer H., Dautzenberg, 1904: 403; Inkhavilay et al., 2019: 104, fig. 53B–C; Páll-Gergely et al., 2020: 62.

Type locality. Lao Mountains, Camboja (Cambodia or Laos).

Remarks. This species has been recorded from southern Vietnam [Fischer H., Dautzenberg, 1904; Schileyko, 2011].

Ganesella saurivonga (Bavay et Dautzenberg, 1900) (Fig. 2C)

Helix (*Ganesella*) *saurivonga* Bavay, Dautzenberg, 1900: 112, 113, 442, 443, pl. 9, figs 10–12.
Helix (*Ganesella*) *saurivonga* var. *concolor* Bavay, Dautzenberg, 1900: 443.
Ganesella saurivonga – Fischer H., Dautzenberg, 1904: 403; Dautzenberg, Fischer H., 1908: 178; Richardson, 1985: 142; Schileyko, 2011: 49.
Ganesella saurivonga var. *depressa* Dautzenberg, Fischer H., 1908: 179 (type locality: Ha-Lang = Hạ Lang, Cao Bằng, Vietnam).

Type locality. Bac-Kan et That-Khé (Bắc Kạn Province and Thất Khê Commune, Lạng Sơn Province, Vietnam).

Remarks. This species has a distribution range in northeastern Vietnam, including Cao Bằng, Thái Nguyên, and Lạng Sơn Provinces [Bavay, Dautzenberg, 1900; Schileyko, 2011].

Ganesella straminea (Möllendorff, 1901)

Satsuma straminea Möllendorff, 1901: 73.
Ganesella straminea – Fischer H., Dautzenberg, 1904: 403; Schileyko, 2011: 49.

Type locality. Than-moi, Tonkin (Thanh Mọi ?, Lạng Sơn Province, Vietnam).

Remarks. To date, this species is only known from the type locality.

Ganesella substraminea (Bavay et Dautzenberg, 1909) (Figs 4A–F)

Helix (*Buliminopsis*) *substraminea* Bavay, Dautzenberg, 1909a ("1908"): 244, 245; 1909b: 203, 204, pl. 8, figs 17–18.
Helix (*Buliminopsis*) *substraminea* var. *minor* Bavay, Dautzenberg, 1909a ("1908"): 245 (type locality: Long-Ping, Pac-Kha, Trinh-Tuong = Lùng Phình, Bắc Hà, Trịnh Tường, Lào Cai Province, Vietnam); 1909: 204, figs 19–20 (var. *minor*).
Ganesella (?) *substraminea* – Schileyko, 2011: 49.

Type locality. Pac-Kha (Bắc Hà, Lào Cai Province, Vietnam).

Remarks. Despite the large differences in size, *Ganesella substraminea* and *Ganesella substraminea* var. *minor* are considered conspecific, as no other conchological differences have been found (this conclusion was provided by Dr. Barna Páll-Gergely, a peer reviewer of this paper; see Fig. 4). This species has been recorded at several localities in Lào Cai Province, northwestern Vietnam [Bavay, Dautzenberg, 1909a; Schileyko, 2011].

Ganesella turgidula (Bavay et Dautzenberg, 1909) (Figs 4G–I)

Helix (*Buliminopsis*) *substraminea* var. *turgidula* Bavay, Dautzenberg, 1909a ("1908"): 245; 1909b: 204, pl. 8, figs 21, 22.
Ganesella (?) *substraminea* var. *turgidula* – Schileyko, 2011: 49.

Type locality. Pac-Kha, Muong-Hum (Bắc Hà District; Mường Hum Commune, Lào Cai Province, Vietnam).

Remarks. This species was described as a form of *Helix* (*Buliminopsis*) *substraminea*; however, in addition to its lower spire, it clearly differs from *G. substraminea* in having a more open umbilicus, a blunter keel, a more strongly expanded peristome, and fine but visible spiral striations on the shell, except on the first 4.5 whorls (this conclusion was provided by Dr. Barna Páll-Gergely; see Fig. 4). This species has been recorded at several localities in Lào Cai Province, northwestern Vietnam [Bavay, Dautzenberg, 1909a; Schileyko, 2011].

Ganesella vatheleti (Bavay et Dautzenberg, 1899)

Helix (*Geotrochus*) *vatheleti* Bavay, Dautzenberg, 1899: 36, pl. 1, fig. 2.
Satsuma pulchella Möllendorff, 1901: 72 (type locality: Mansongebirge = Mẫu Sơn, Lạng Sơn Province, Vietnam).
Ganesella acris vatheleti – Richardson, 1985: 131.
Ganesella vatheleti – Fischer H., Dautzenberg, 1904: 403; Dautzenberg, Fischer H., 1905: 94; Schileyko, 2011: 49.

Type locality. La baie d'Along (Hạ Long Bay, Quảng Ninh Province, Vietnam).

Remarks. A yellowish-brown belt is present along the sutures and at the periphery of the last whorl. This species has a distribution range in north-

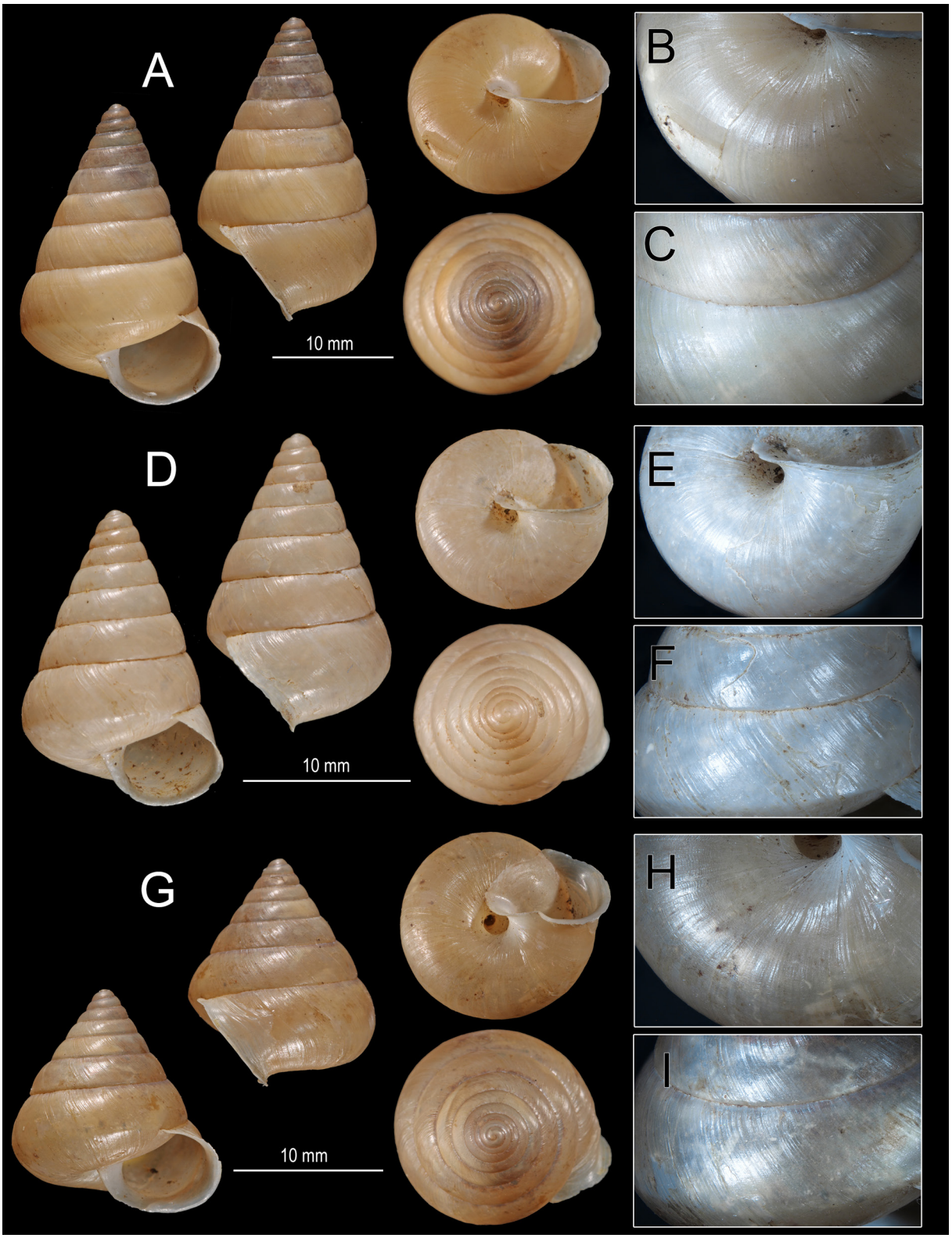

FIG. 4. **A–F.** *Ganesella substraminea* (Bavay, Dautzenberg, 1908), **A–C.** *Helix* (*Buliminopsis*) *substraminea* (syntype MNHN-IM-2000-32870 from Pac-Kha), **D–F.** *Helix* (*Buliminopsis*) *substraminea* var. *minor* (syntype MNHN-IM-2000-32871 from Long-Ping, Pac-Kha, Trinh-Tuong). **G–I.** *Ganesella turgidula* (Bavay, Dautzenberg, 1909) (syntype MNHN-IM-2000-32872 from Pac-Kha). Photos: B. Páll-Gergely.

eastern Vietnam, including Lạng Sơn and Quảng Ninh Provinces.

Discussion

At present, a total of 262 species and subspecies belonging to 25 genera of the family *Camaenidae* have been recorded from Vietnam. These genera include *Acusta* Martens, 1860 (1 species), *Aegista* Albers, 1850 (8 species), *Aegistohadra* Wu, 2004 (3 species), *Amphidromus* Albers, 1850 (118 species), *Anceyoconcha* S. Tumpeesuwan et C. Tumpeesuwan, 2020 (6 species), *Bellatrachia* Schileyko, 2018 (2 species), *Bouchetcamaena* Thach, 2018 (2 species), *Bradybaena* Beck, 1837 (9 species), *Burmochloritis* Godwin-Austen, 1920 (5 species), *Camaena* Albers, 1850 (27 species), *Camaenella* Pilsbry, 1893 (3 species), *Chloritis* Beck, 1837 (8 species), *Entadella* Páll-Gergely et Hunyadi, 2016 (3 species), *Ganesella* Blanford, 1863 (22 species), *Giardia* Ancey, 1907 (5 species), *Globotrochus* Haas, 1935 (2 species), *Landouria* Godwin-Austen, 1918 (2 species), *Moellendorffia* Ancey, 1887 (8 species), *Neocepolis* Pilsbry, 1891 (2 species), *Neotrachia* Schileyko, 2018 (1 species), *Plectotropis* Martens, 1860 (7 species), *Sauroconcha* Zhang et Shea, 2008 (1 species), *Thaitropis* Schileyko, 2004 (2 species), *Trachia* Martens, 1860 (4 species), and *Trichochloritis* Pilsbry, 1891 (11 species) [Schileyko, 2011, 2018; Thach, 2016–2023; Sutcharit *et al*., 2007, 2019; Páll-Gergely *et al*., 2016–2023; Nahok *et al*., 2020; Lee *et al*., 2022; Jirapatrasilp *et al*., 2024; MolluscaBase, 2025; this study].

In Vietnam, species of *Ganesella* have been recorded mainly in the Northeastern region (Lạng Sơn, Cao Bằng, Thái Nguyên, and Tuyên Quang provinces) and the Northwestern region (Lào Cai, Lai Châu, and Sơn La provinces). Additional records are known from coastal areas of Quảng Ninh Province (Hạ Long Bay) and Hải Phòng City. Several species exhibit restricted distribution ranges and may be endemic to Vietnam, or specifically to northern Vietnam [Dautzenberg, Fischer H., 1908; Bavay, Dautzenberg, 1900, 1909a; Möllendorff, 1901; Schileyko, 2011].

In this paper, the new species *Ganesella* ***tamchuc*** sp. nov. is tentatively assigned to the genus *Ganesella* based on several morphological characters that are either consistent with those of *Ganesella* or have been documented in certain species within the genus. These characters include a medium-sized shell with 4–4¼ whorls; dark brown spiral belts on the shell surface; a distinct peripheral keel on the last whorl; and distinct radial ribs sculpted across the shell surface.

Nevertheless, the taxonomic position of *Ganesella* ***tamchuc*** sp. nov. remains questionable, as it exhibits several morphological features that differ markedly from those of other *Ganesella* species. Firstly, the radial ribs on the shell surface are very strong and extend into the umbilical region as well as deep inside the aperture. Secondly, the umbilicus is widely open, fairly deep, and exposes the internal whorls. Thirdly, the aperture is large, rounded, and almost horizontally oriented. Furthermore, the feature of prominent radial ribs on the shell surface is also present in the genus *Neocepolis* – an endemic genus to Vietnam that includes *Neocepolis merarcha* (Mabille, 1888) and *Neocepolis morleti* (Dautzenberg et d'Hamonville, 1887); in the genus *Bradybaena*, such as *Bradybaena jourdyi* (Morlet, 1886) and *Bradybaena similaris* (Férussac, 1822); and in the genus *Aegista* Albers, 1850, for example, *Aegista packhaensis* (Bavay et Dautzenberg, 1909). In addition, the feature of a widely open umbilicus is common to many *Aegista* species, including *Aegista pseudotrochula* (Bavay et Dautzenberg, 1909), *Aegista gitaena* (Bavay et Dautzenberg, 1909), and others. The above situation suggests that *Ganesella* ***tamchuc*** sp. nov. may represent a new subgenus, or possibly even a distinct genus.

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