AN OVERVIEW OF THE MEDITERRANEAN 'ALLIED COWRIES' (GASTROPODA: OVULIDAE), WITH THE DESCRIPTION OF *XANDAROVULA AETHERIA* N. SP.

Andrea NAPPO [7]

ABSTRACT

The family Ovulidae Fleming, 1822, collectively known as the 'allied cowries', is represented by nine species across four genera in the Mediterranean Sea. The taxonomy of these species has undergone multiple revisions in recent years by various authors. Unfortunately, these changes were frequently published in less accessible journals or self-published books, making them challenging to locate. Consequently, this has led to a lack of updates in prominent online registers such as WoRMS and MolluscaBase. This paper aims to shed light on this group by elucidating the chronology of the taxonomic changes and evaluating their outcomes.
Mioseguenzia cimbrica recens Nordsieck, 1973 and *Mioseguenzia conica* Nordsieck, 1973 are herein removed from the synonymy of *Pedicularia sicula* Swainson, 1840 and considered *nomina dubia*. Their genus, *Mioseguenzia* Nordsieck, 1973, is also considered a *nomen dubium*. The Eastern Atlantic and Mediterranean systematics for the genera *Neosimnia* Fischer, 1884, *Simnia* Risso, 1826, and *Xandarovula* Cate, 1973, and the species included in them, is here reverted to the one proposed by DOLIN & LEDON (2002): *Simnia nicaeensis* Risso, 1826 is a junior synonym of *Simnia spelta* (Linnaeus, 1758); *Neosimnia* Fischer, 1884 is a junior synonym of *Simnia* Risso, 1826; and *Xandarovula* Cate, 1973 is reinstated to include *Xandarovula aetheria* **n. sp.**, *Ovulum apertum* Sowerby II, 1849, *Simnia hiscocki* Lorenz & Melaun, 2011, *Simnia hyalina* Lorenz & Fehse, 2009, *Simnia jacintoi* Fehse & Trigo, 2015, and *Bulla patula* Pennant, 1777. *Neosimnia illyrica* Schilder, 1927 is considered a junior synonym of *Simnia spelta* (Linnaeus, 1758), and *Pseudosimnia angusta* Celzard, 2017 is considered a junior synonym of *Pseudosimnia carnea* (Poiret, 1789). *Ovula capellinii* De Stefani, 1889 and *Ovula passerinalis* Lamarck, 1810 are moved from the genus *Pseudosimnia* F. A. Schilder, 1927 to *Simnia* Risso, 1826.

*Keywords***:** Mollusca, Gastropoda, Cypraeoidea, *Ovulidae*, Mediterranean Sea

SINTEŻI

[Ħarsa ġenerali lejn l-ovulidi tal-Mediterran (Gastropoda: Ovulidae), bid-deskrizzjoni ta' *Xandarovula aetheria* n. sp.] Il-familja Ovulidae Fleming, 1822 hi rrappreżentata fil-Mediterran minn disat ispeċi maqsumin f'erba' ġeneri. It-tassonomija ta' dawn l-ispeċi għaddiet minn bosta tibdiliet minn awturi varji f'dawn l-aħħar snin. Sfortunatament, ħafna minn dan it-tibdil deher f'ġurnali mhux aċċessibli faċilment, jew inkella f'kotba awto-ppubblikati li diffiċli jinstabu. Bħala konsegwenza, dan wassal għal nuqqas ta' aġġornamenti f'reġistri prominenti online bħall-WoRMS u MolluscaBase. F'dan ix-xogħol, il-kronoloġija ta' dan it-tibdil tassonomiku qiegħda tiġi iċċarata, u r-riżultati tat-tali tibdil qiegħdin jiġu evalwati.
Mioseguenzia cimbrica recens Nordsieck, 1973 u *Mioseguenzia conica* Nordsieck, 1973 qegħdin jiġu mneħħijin mis-sinonimija ta' *Pedicularia sicula* Swainson, 1840, u kkunsidrati bħala *nomina dubia*. Il-ġeneru tagħhom, *Mioseguenzia* Nordsieck, 1973, huwa wkoll ikkunsidrat bħala *nomen dubium*. Is-sistematika tal-ġeneri *Neosimnia* Fischer, 1884, *Simnia* Risso, 1826 u *Xandarovula* Cate, 1973 tal-Atlantiku tal-Lvant u tal-Mediterran, u tal-ispeċi inklużi fihom, issegwi l-proposta ta' DOLIN & LEDON (2002): *Simnia nicaeensis* Risso, 1826 huwa sinonimu iżgħar ta' *Simnia spelta* (Linnaeus, 1758); *Neosimnia* Fischer, 1884 huwa sinonimu iżgħar ta' *Simnia* Risso, 1826; u

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Xandarovula Cate, 1973 qiegħed jerġa' jiġi integrat biex jinkludi lil *Xandarovula aetheria* **n. sp.**, *Ovulum apertum* Sowerby II, 1849, *Simnia hiscocki* Lorenz & Melaun, 2011, *Simnia hyalina* Lorenz & Fehse, 2009, *Simnia jacintoi* Fehse & Trigo, 2015, u *Bulla patula* Pennant, 1777. *Neosimnia illyrica* Schilder, 1927 huwa kkunsidrat sinonimu iżgħar ta' *Simnia spelta* (Linnaeus, 1758), u *Pseudosimnia angusta* Celzard, 2017 huwa kkunsidrat sinonimu iżgħar ta' *Pseudosimnia carnea* (Poiret, 1789). *Ovula capellinii* De Stefani, 1889 u *Ovula passerinalis* Lamarck, 1810 jiġu trasferiti mill-ġeneru *Pseudosimnia* F. A. Schilder, 1927 għal *Simnia* Risso, 1826.

Kliem muftieħ: Mollusca, Gastropoda, Cypraeoidea, *Ovulidae*, il-Baħar Mediterran

INTRODUCTION

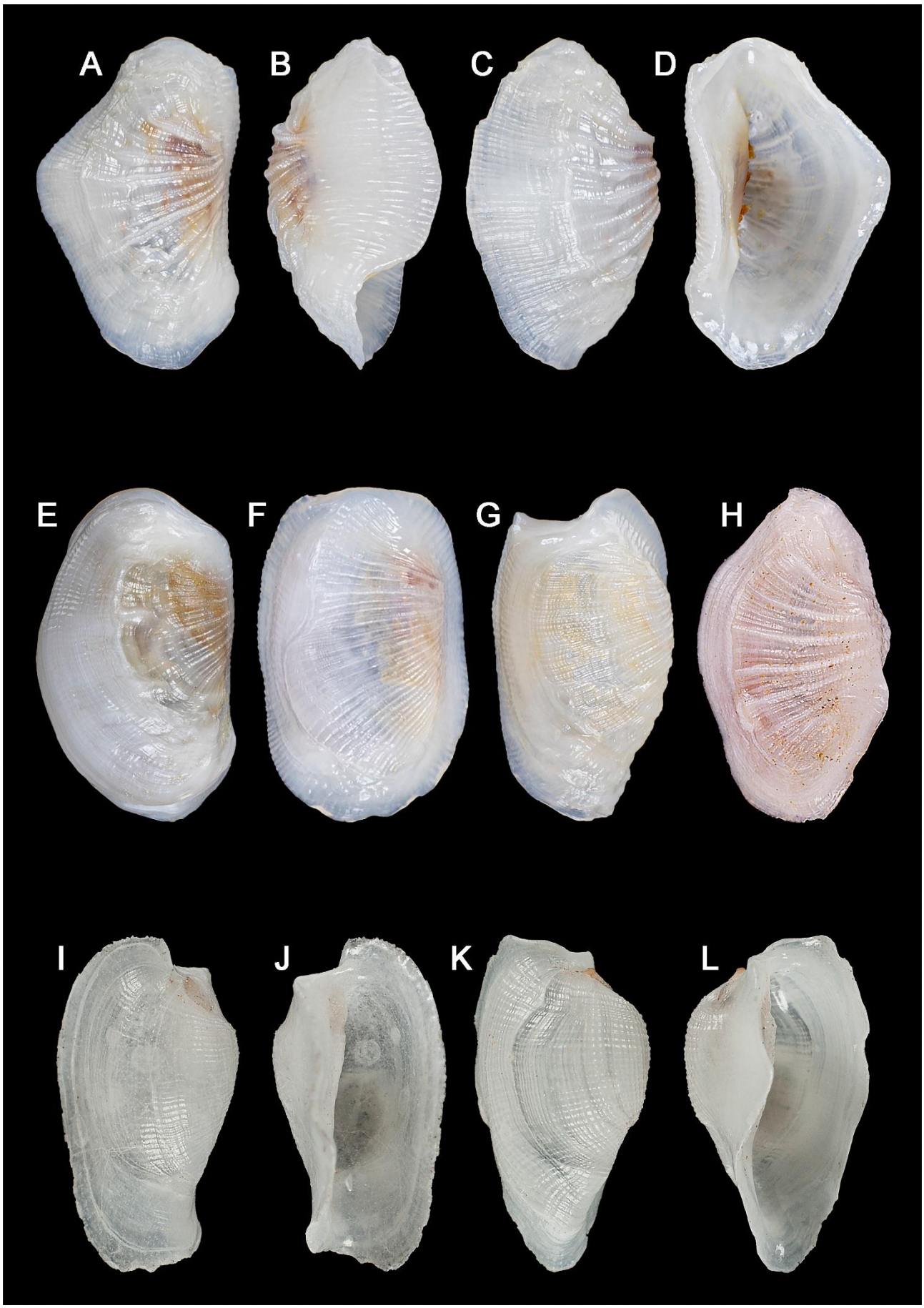
According to Molluscabase (https://www.molluscabase.org/; last accessed 29 Feb. 2024) the family *Ovulidae* Fleming, 1822 contains around 365 recent and fossil species, grouped in 57 genera. They are distributed in tropical and temperate seas, from the intertidal to the bathyal zone (LORENZ & FEHSE, 2009). The majority of ovulids function as ectoparasites on sessile colonial coelenterates, particularly soft corals, leather corals, and black corals, feeding on their polyps and secretions. The animals of these gastropods often mimic the colors and patterns of the host, making them very hard to notice.

Species of the ovulid subfamily *Pediculariinae* Gray, 1853 live in association with corals of the family *Stylasteridae* Gray, 1847. Members of the subfamily *Pediculariinae* are protandric, which means that they are born male, but undergo a sex change at a certain point in their life to become female. This shift in biological sex is reflected in a sudden alteration in the shape and sculpture of their shells. In fact, male (younger) shells are more cylindrical and lack an expanded lip, making them better suited for movement. On the other hand, female (older) shells exhibit a distorted shape with an expanded lip, usually mirroring the conformation of the coral host where they reside, indicating a lack of movement during this phase. This observation suggests an active role for the male in fertilizing the female (LORENZ & FEHSE, 2009).

MATERIALS AND METHODS

Material was obtained by dredging, fishing and scuba diving. Standard photographs were obtained with Nikon D80 and Sony Alpha 7 II cameras and processed with Adobe Photoshop 2024® (by way of brightness, contrast, sharpness and colour balance adjustments exclusively, applied to the entirety of the image). Sizes are given in millimetres (mm) and listed as [shell height × shell width].

Symbols and abbreviations:
*: original description
coll.: collection of
pp.: pages
s.l.: *sensu lato*
spm./spms.: specimen/s
ANC: Andrea NAPPO collection (Il-Ħamrun, Malta)
ATPC: Attilio PAGLI collection (Empoli, Italy)
ALPC: Alen PETANI collection (Zadar, Croatia)
DPC: Daniel PELLEGRINI collection (Valmontone, Italy)
CCC: Charles CACHIA collection (Qormi, Malta)
FSC: Frank SWINNEN collection (Lommel, Belgium)
IMMC: Ivan MULERO MENDEZ collection (Murcia, Spain)
PUC: Pero UGARKOVIĆ collection (Split, Croatia)
MNHN: Muséum national d'Histoire naturelle, Paris, France
MSF: The Mollusca Science Foundation, Inc. (Baltimore, Maryland, U.S.A.)
NHMUK: Natural History Museum (London, England)
SBC: Stellario BERTOLINO (Trapani, Italy)



Pl. 1 Figs. A–L: *Pedicularia sicula* Swainson, 1840. **A–H**: Specimens of *P. sicula* from Italy. **A–D**: Messina Strait, 140 m depth, Jul. 1990, 7.5 mm (ANC). **E**: Messina Strait, 140 m depth, Jul. 1990, 7.9 mm (ANC). **F**: Messina Strait, 140 m depth, Jul. 1990, 5.5 mm (ANC). **G**: Messina Strait, 140 m depth, Jul. 1990, 7.5 mm (ANC). **H**: Messina Strait,

140 m depth, Jul. 1990, 6 mm (ANC). **I–L**: Specimens of *P. sicula* from Portugal. **I–J**: Selvagens Islands, 30.1060° N, 15.9163° E, 669 m depth, 4.2 mm (FSC). **K–L**: Selvagens Islands, 30.1060° N, 15.9163° E, 669 m depth, 4 mm (FSC).

SYSTEMATICS

Class Gastropoda Cuvier, 1795
Subclass Caenogastropoda Cox, 1960
Order Littorinimorpha Golikov & Starobogatov, 1975
Superfamily Cypraeoidea Rafinesque, 1815
Family Ovulidae J. Fleming, 1822
Subfamily Pediculariinae Gray, 1853
Genus *Pedicularia* Swainson, 1840
(type species by monotypy: *Pedicularia sicula* Swainson, 1840)

Remarks: Following NOCELLA et al. (2024), pediculariids are here placed as a subfamily within the family *Ovulidae* J. Fleming, 1822, while as of the time of writing, online registers as WoRMS (https://www.marinespecies.org/; last accessed 29 Feb. 2024) and MolluscaBase place them in their own family, namely *Pediculariidae* Gray, 1853.

Pedicularia sicula Swainson, 1840 (**Pl. 1 Figs. A–L, Pl. 2 Figs. A–C, F**)

* *Pedicularia Sicula* SWAINSON, 1840: 357, fig. 44.
Calyptraea polymorpha CALCARA, 1842: 17.
Thyreus paradoxus PHILIPPI, 1844: 92, pl. 18 fig. 1.
Pedicularia sicula var. sublevigata LOCARD, 1897: 99.

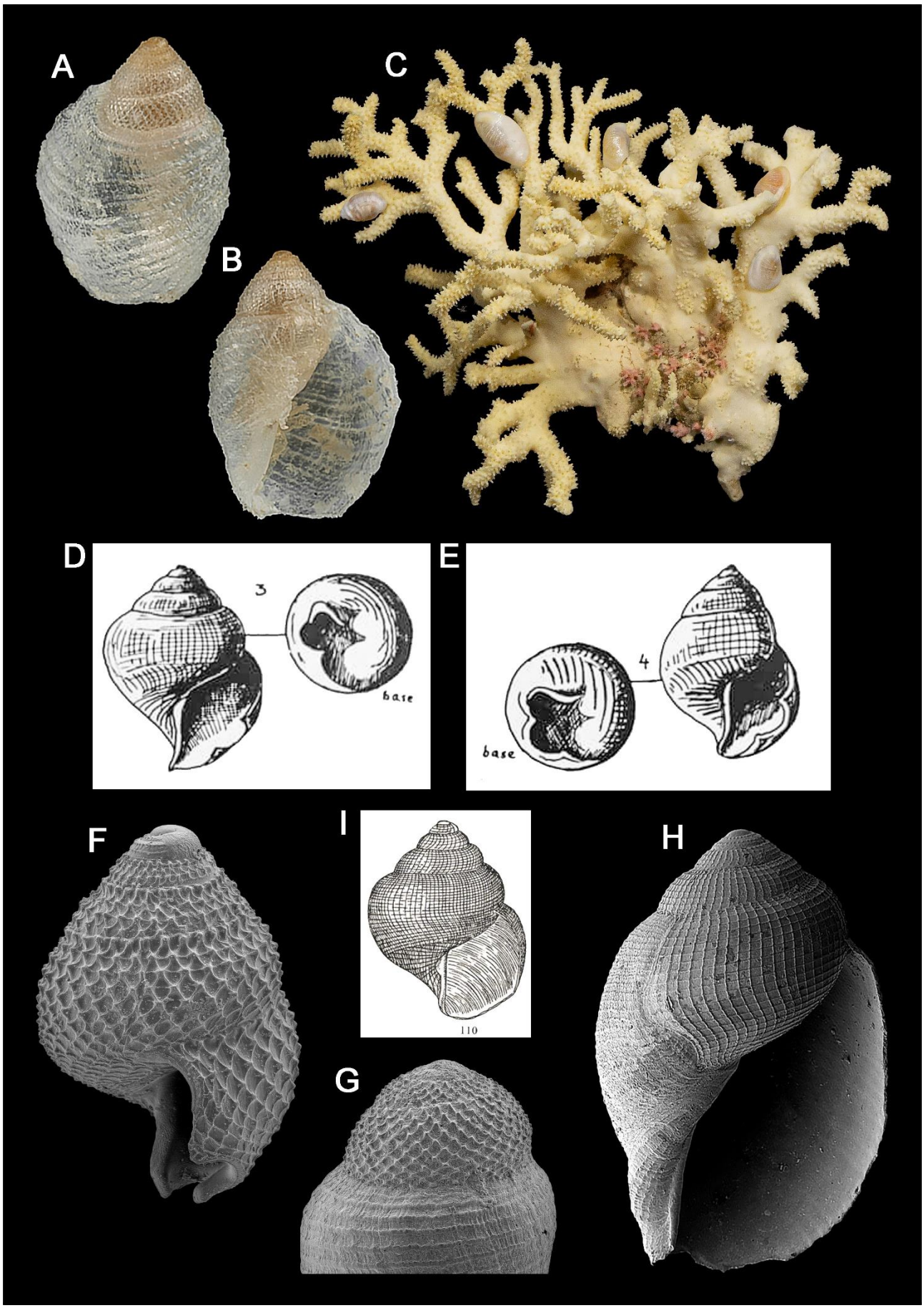
Type locality: coasts of Sicily, Italy.

Type material: Lost (see BOUCHET & WARÉN, 1993; MCGHIE, 2008).

Original description: 'Shell irregular, sub-patelliform; a thick, large, obsolete apex on one of the longest sides, and an internal callous rim within, on one side only; circumference undulated, irregular' (SWAINSON, 1840: 357).

Material studied:
ITALY • 16 spms.; Messina Strait; 140 m depth; Jul. 1990; ANC.
PORTUGAL • 5 spms.; Selvagens Islands; 30.1060° N, 15.9163° E; 669 m depth; FSC.

Remarks: *Pedicularia sicula* Swainson, 1840 is an extremely variable species in shape. This occurs because the animal adjusts the shape of the shell to the host branch during the female phase. Species of this genus are born male, and in this phase, the shells are cylindrical, often with dentition on the outer lip. During this stage, the male is mobile and sexually active. The sex change from male to female is reflected in the shell through a sudden change in sculpture. While in the male phase, the shell exhibits a strong spiral sculpture, whereas in the female phase, the shell has a smooth surface, with sparse spiral sculpture.
In the Mediterranean, this species' distribution is scattered, occurring specifically in Sicily, Alboran Sea, and possibly Malta, at depths ranging from 70 to 140 metres. In the Atlantic, the species is found from the northern part of the Bay of Biscay to the Azores and the Canary Islands, at depths from 110 to 1125 meters. *P. sicula* in the Mediterranean lives exclusively on *Errina aspera* (Linnaeus, 1767), while in the Atlantic it was recorded also on *Errina dabneyi* (Pourtalès, 1871) and *Stylaster ibericus* (Zibrowius & Cairns, 1992) (BRAGA-HENRIQUES et al., 2010).
The databases at MolluscaBase and WoRMS list two taxa - *Mioseguenzia cimbrica recens* Nordsieck, 1973 (NORDSIECK, 1973: 6, fig. 3) (**Pl. 2 Fig. D** in this paper) and *Mioseguenzia conica* Nordsieck, 1973 (NORDSIECK, 1973: 6, fig. 4) (**Pl. 2 Fig. E** in this paper) - as synonyms of *P. sicula*.



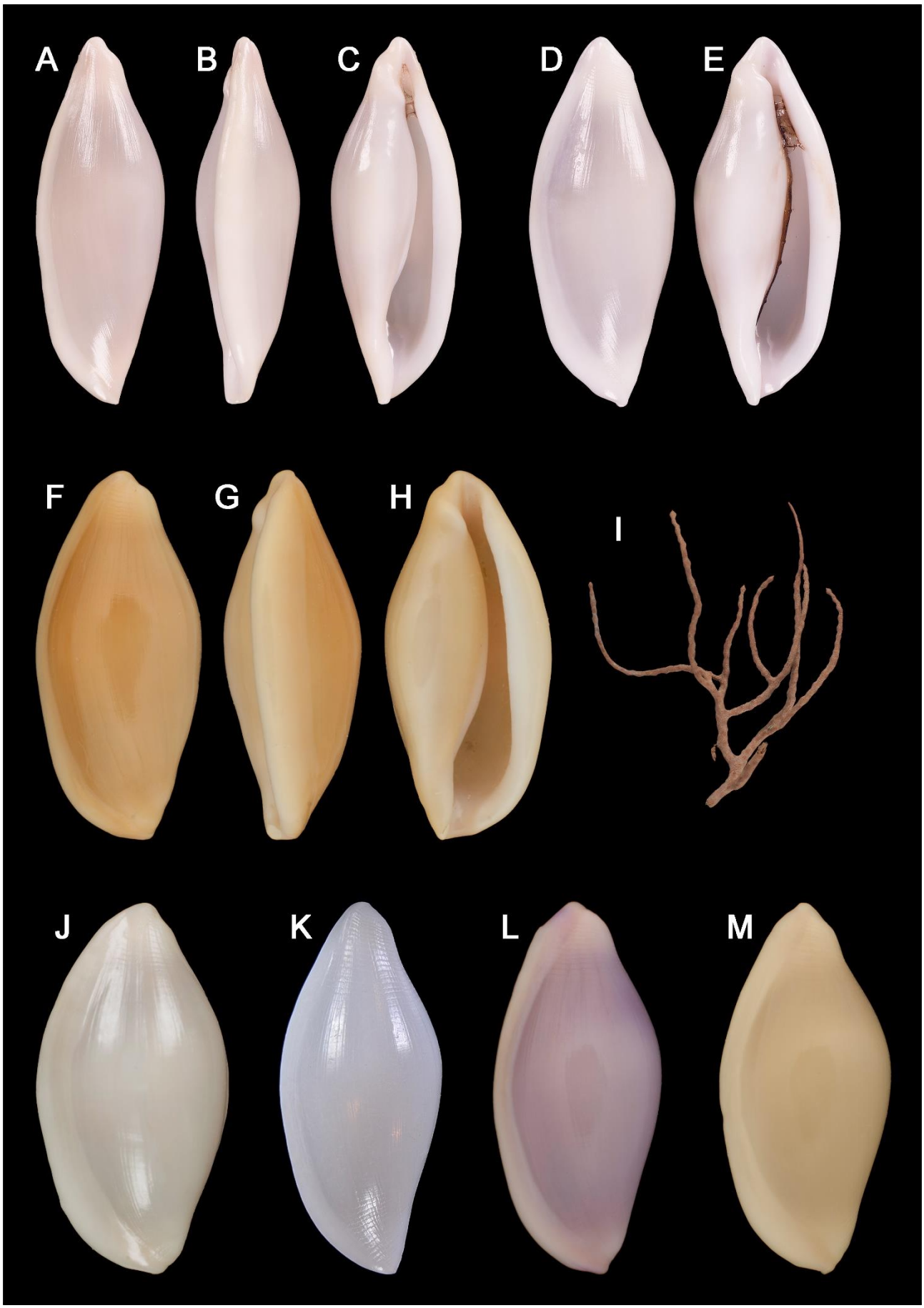
Pl. 2 Figs. A–H: *Pedicularia sicula* Swainson, 1840, its host, and comparative gastropod material. **A–C**: Specimens of *P. sicula* from Italy. **A–B**: Messina Strait, 140 m depth, Jul. 1990, 1.5 mm (ANC). **C**: *Errina aspera* (Linnaeus, 1767) with *P. sicula*, Messina Strait, 140 m depth, Jul. 1990 (ANC). **F**: Specimen of *P. sicula* from Portugal, Selvagens

Islands, 30.1060° N, 15.9163° E, 669 m of depth, 4.2 mm (FSC). **G**: Specimen of Ovulidae s.l. J. Fleming, 1822 from Ascension Island, Georgetown, 130 m depth, 7°53.505'S 14°25.990'W, 1.5mm (FSC). **H**: Specimen of Cypraeidae Rafinesque, 1815 from Italy, Sicily, Catania, Cannizzaro, 45 m depth, 2.3 mm (ANC). **D–E, I**: Drawings from reference works used for comparative purposes. **D**: *Mioseguenzia cimbrica recens* Nordsieck, 1973: 6, fig. 3. **E**: *Mioseguenzia conica* Nordsieck, 1973: 6, fig. 4. **I**: *Janthina cimbrica* Sorgenfrei, 1958: 176, pl. 32 fig. 110.

Although the source of this synonymization could not be traced, NORDSIECK's (1973) original illustrations unequivocally indicate the familial assignment of these two taxa. The drawings clearly depict protoconchs of Cypraeoidea Rafinesque, 1815, most likely representing two different species or even genera, based on their overall shape and spire height. Both illustrations, however, exhibit a distinct sculpture composed of intersecting horizontal spiral ridges and vertical axial ridges, typical of the protoconchs of Cypraeidae Rafinesque, 1815 (**Pl. 2 Fig. H**). In contrast, members of the Pediculariinae (**Pl. 2 Fig. F**) and Ovulidae s.l. (**Pl. 2 Fig. G**) possess protoconchs with sculptures consisting of oblique ridges. Consequently, these two taxa are excluded from the synonymy of *P. sicula* and designated as *nomina dubia*. Assigning a generic and specific name is unlikely, given the lack of characteristics for a confident identification. The two taxa were described in the genus *Mioseguenzia* Nordsieck, 1973, of which *Janthina cimbrica* Sorgenfrei, 1958, a Miocene fossil from Denmark, was designed as type species. QUINN (1983) removed this genus from 'Seguenziacea' (Seguenziidae Verrill, 1884) because the original illustration of *J. cimbrica* depicted a larva of 'Cypraeacea' (Cypraeidae). Similarly to the preceding taxa, the excellent illustration of *J. cimbrica* (SORGENFREI, 1958: 176, pl. 32 fig. 110) (**Pl. 2 Fig. I** in this paper) indeed displays a larva of a cypraeid. Consequently, the synonymy of *Mioseguenzia* with *Pedicularia* is not justified. However, the genus is herein also designated as *nomen dubium*, as it is not possible to trace it back to a specific genus or species.

Subfamily Simniinae Schilder, 1927
Genus *Simnia* Risso, 1826
(type species by subsequent designation: *Simnia nicaeensis* Risso, 1826, accepted as *Simnia spelta* (Linnaeus, 1758))

Remarks: Recently, the validity of this genus was discussed by several authors (DOLIN & LEDON, 2002; FEHSE, 2018). This confused situation is caused by the interpretation these authors gave to the type species of the genus: *Simnia nicaeensis* Risso, 1826. This species was described from a single specimen only, and the original drawing by RISSO (1826: fig. 150) shows an elongate, thin shell, with extremely developed siphonal canals (**Pl. 7 Fig. A** in this paper). The subsequent drawing of the same specimen made by SCHILDER (1932) shows a damaged shell, which is less elongate than the original drawing and more pyriform in shape (**Pl. 7 Fig. B** in this paper). Today, the lectotype of *Simnia nicaeensis* Risso, 1826 housed in the MNHN (MNHN-IM-2000-3644) is a broken shell of 13.7 mm, pinkish in color and with huge parts missing (**Pl. 7 Fig. C**). Even if very damaged, the type specimen itself and the two drawings show a very elongate form which is identical to juvenile specimens of *Simnia spelta* (Linnaeus, 1758) (**Pl. 7 Fig. D**) and clearly different from the shells usually identified in literature as *S. nicaeensis* (in this paper *Xandarovula aetheria* n. sp.) (**Pl. 7 Figs. E–H, Pl. 8 Figs. A–H**) which possess a more cylindrical shell, with an aperture that is wider anteriorly. The length and shape of the siphonal canals match the ones of juvenile *S. spelta* and are very different from the short and wide canals of *Xandarovula aetheria* n. sp., which is also bigger in size (*X. aetheria* n. sp.: ~25 mm; *S. spelta*: ~20 mm) and white in colour.
Following DOLIN & LEDON (2002), *Simnia nicaeensis* Risso, 1826 is regarded a synonym of *Bulla spelta* Linnaeus, 1758. *Neosimnia* P. Fischer, 1884, of which *B. spelta* is the type species, becomes a synonym of *Simnia* Risso, 1826.
All the species possessing thin lips (namely *Ovulum apertum* Sowerby II, 1849; *Simnia hiscocki* Lorenz & Melaun, 2011; *Simnia hyalina* Lorenz & Fehse, 2009; *Simnia jacintoi* Fehse & Trigo, 2015; and *Bulla patula* Pennant, 1777) are moved to *Xandarovula* Cate, 1973, of which *Bulla patula* Pennant, 1777 is the type species (**Pl. 9 Figs. A–C**). Additionally, this genus also includes the *Xandarovula* in open nomenclature of the present paper, namely, *X.* sp. 1 and *X.* sp. 2, and *Xandarovula aetheria* n. sp.



Pl. 3 Figs. A–M: *Simnia spelta* (Linnaeus, 1758) and its host. **A–E**: Specimens of *S. spelta* from Croatia, Brač Island, 25 m depth on *Eunicella singularis* (Esper, 1791). **A–C**: 20 mm (ANC). **D–E**: 17.6 mm (ANC). **F–I**: Specimen of *S. spelta* from Spain, and its host. **F–H**: Granada, 20 m depth on *Leptogorgia sarmentosa* (Esper, 1791), 2020, B.

CUNNINGHAM APARICIO leg., 11.4 mm (ANC). **I**: *Leptogorgia sarmentosa* (Esper, 1791), 20 m depth, 2020, B. CUNNINGHAM APARICIO leg. (ANC). **J–M**: Specimens of *S. spelta* from Italy. **J**: Latium, Civitavecchia, 50–80 m of depth, A. GAGLINI leg., 10.3 mm (ANC). **K**: Calabria, Scilla, 50 m of depth, A. VAZZANA leg.,14.4 mm (ATPC). **L**: Sardinia, Cagliari Gulf, Poetto, 50–80 m depth; A. NAPPO leg., 10.3 mm (ANC). **M**: Sardinia, Cagliari Gulf, Poetto, 50–80 m depth, A. NAPPO leg., 10.8 mm (ANC).

Ovula capellinii De Stefani, 1889, from the Italian Pliocene, and *Ovula passerinalis* Lamarck, 1810, from the Italian and Spanish Pliocene, are usually placed by several authors (CHIRLI, 1997; BRUNETTI & VECCHI, 2015; PACAUD, 2021) in the genus *Pseudosimnia* F. A. Schilder, 1927, due to their bulbous shape. However, the lack of dentition on both the columellar and the labral sides, the presence of a strong funiculum on the columellar side in the posterior terminal, and the aperture widening anteriorly suggest that *Simnia* is a better fit for these two species, even if the bulbous shape of the shell is unusual for this genus.

Simnia spelta (Linnaeus, 1758) (**Pl. 3 Figs. A–H**, **J–M**, **Pl. 4 Figs. A–H**, **Pl. 5 Figs. A–I**)

* *Bulla spelta* LINNAEUS, 1758: 726.
Ovula triticea Lamarck, 1810 sensu PAYRAUDEAU, 1826: 169.
Ovulum obtusum SOWERBY I, 1828: 156.
Ovulum secale SOWERBY I, 1828: 157.
Simnia nicaeensis RISSO, 1826: 235, fig. 150.
Ovula spelta var. roseocarnea BUCQUOY, DAUTZENBERG & DOLLFUS, 1883: 135.
Ovula acicularis Lamarck, 1810, sensu TRYON, 1885: 251.
Ovula intermedia G. B. Sowerby I, 1828 sensu TRYON, 1885: 251.
Ovula sowerbyana Weinkauff, 1881 sensu TRYON, 1885: 253.
Ovula leathesi J. de C. Sowerby, 1824 sensu TRYON, 1885: 254.
Ovula obsoleta LOCARD, 1891: 36, pl. 8, fig. 12.
Ovula spelta var. lutea PALLARY, 1900: 301.
Ovula spelta var. rosea PALLARY, 1900: 301.
Simnia spelta var. brevis COEN, 1949: 18.

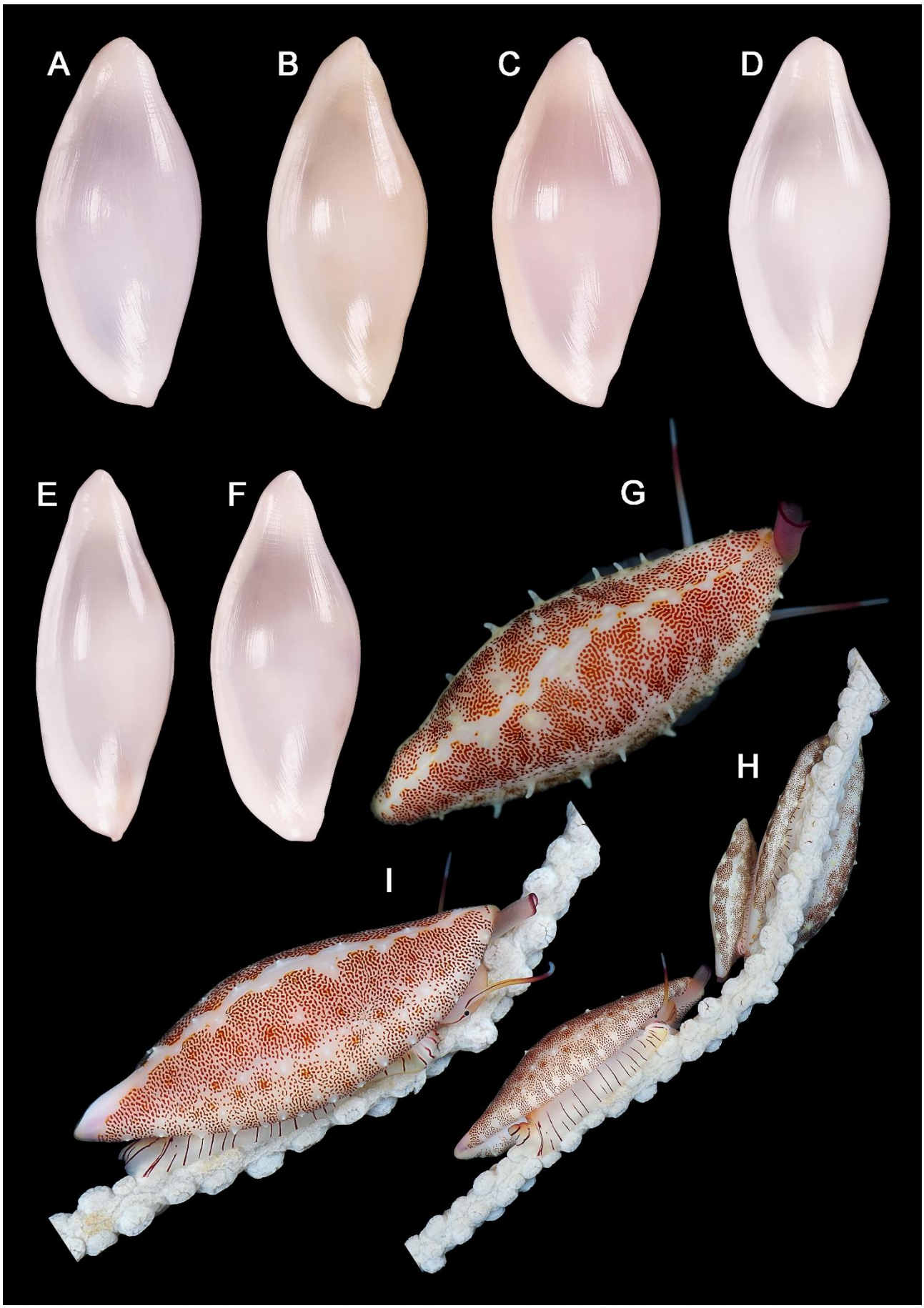
Type locality: Mediterranean Sea (LINNAEUS, 1758).

Type material: Syntypes in Linnean Society of London (N. P-Z 0010772).

Original description: 'Testa alba, lavis, semine Tritici duplo major, vix birostris, sed magis patula. Apertura longitudinalis, lunata cum denticulo obsoleto ad apicem columelle. Spira externa omnino nulla' [Shell white, smooth, twice as large as wheat seed, barely bi-rostrated, but quite open. Longitudinal opening, crescent-shaped with a nearly obsolete denticle at the tip of the columella. Sculpture entirely absent] (LINNAEUS, 1758: 726).

Material studied:
ITALY • 1 spm.; Latium, Civitavecchia; 50–80 m depth; A. GAGLINI leg.; ANC • 2 spms.; Sardinia, Cagliari Gulf, Poetto; 50–80 m depth; A. NAPPO A. Leg.; ANC • 1 spm.; Calabria, Scilla; 50 m depth; A. VAZZANA leg.; ATPC.
CROATIA • 9 spms.; Brač Island; 25 m depth on *Eunicella singularis* (Esper, 1791); 2021; R. STANIĆ leg.; ANC.
SPAIN • 1 spm.; Granada; 20 m depth on *Leptogorgia sarmentosa* (Esper, 1791); 2021; B. CUNNINGHAM APARICIO leg.; ANC.

Remarks: *Simnia spelta* (Linnaeus, 1758) is an extremely variable species in size, shape, and colours of the shell and animal. Adult specimens can vary in size from 10 to 20 mm. It lives in *Eunicella cavolini* (Koch, 1887), *Eunicella singularis* (Esper, 1791), *Leptogorgia ruberrima* (Koch, 1886), *Leptogorgia sarmentosa* (Esper, 1791) (**Pl. 3 Fig. I**) and *Leptogorgia viminalis* (Pallas, 1766) (SCHIAPARELLI et al., 2005).

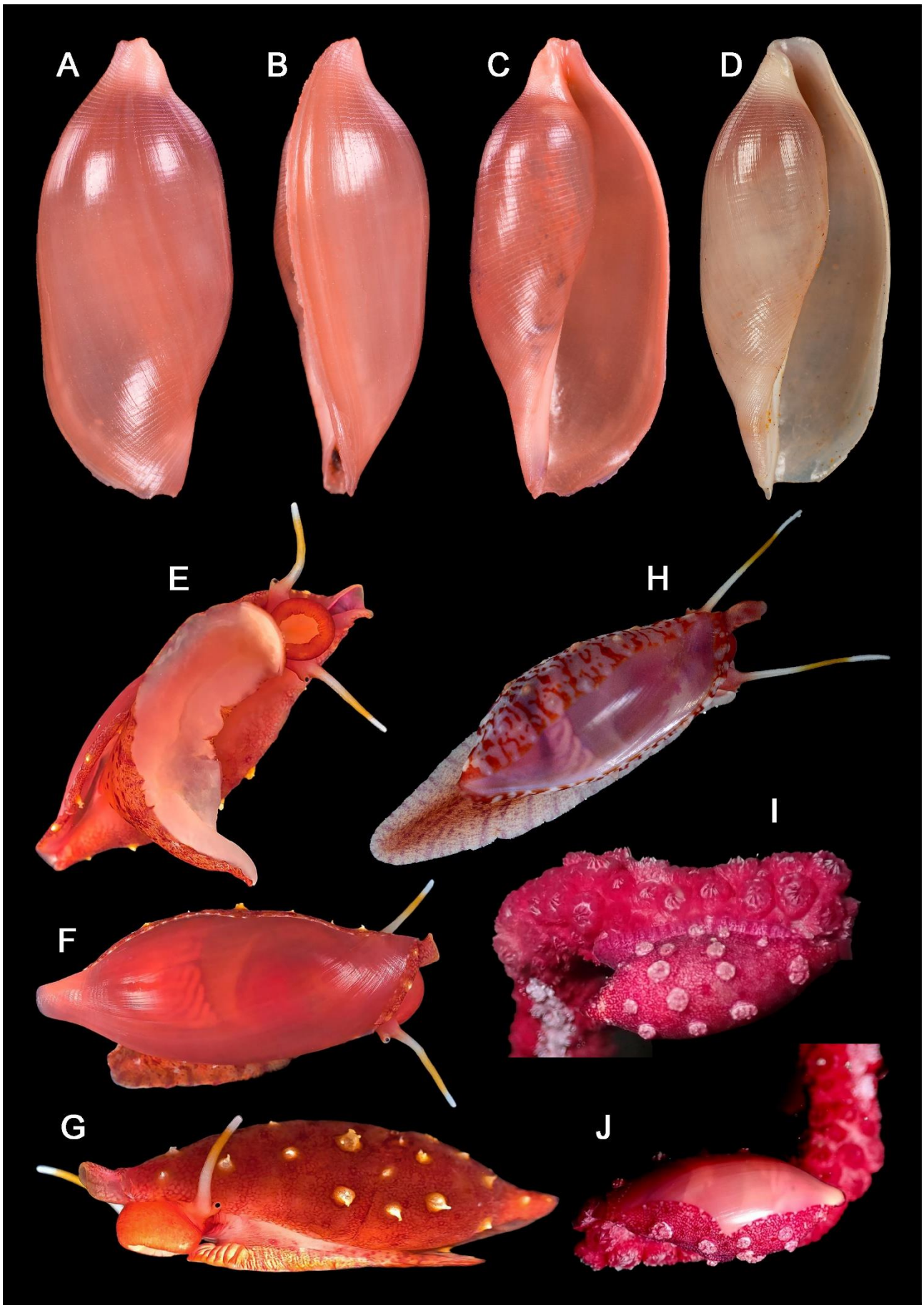


Pl. 4 Figs. A–I: *Simnia spelta* (Linnaeus, 1758). Specimens from Croatia, Brač Island, on *Eunicella singularis* (Esper, 1791). **A**: 25 m depth, 10.6 mm (ANC). **B**: 25 m depth, 12.2 mm (ANC). **C**: 25 m depth, 12.9 mm (ANC).

D: 25 m depth, 14.3 mm (ANC). **E**: 25 m depth, 15.6 mm (ANC). **F**: 25 m depth, 17.4 mm (ANC). **G–I**: 27 m depth (photo credit: R. STANIĆ). **Pl. 5 Figs. A–I**: *Simnia spelta* (Linnaeus, 1758). **A–B**: Specimens of *S. spelta* from Croatia, Brač Island, 25 m depth on *Eunicella singularis* (Esper, 1791) (photo credit: R. STANIĆ). **C**: Specimen of *S. spelta* from

Spain, St. Feliu de Guixols (photo credit: J. VILANOVA, user JOSEPVILANOVA on iNaturalist). **D–E**: Specimen of *S. spelta* from Spain, Granada, 20 m depth on *Leptogorgia sarmentosa* (Esper, 1791) (photo credit: B. CUNNINGHAM APARICIO). **F**: Specimen of *S. spelta* from Spain, Tarifa Island (photo credit: user WHODDEN on iNaturalist); **G**: Specimen of *S. spelta* from Spain, Almuñecar (photo credit: L. SÁNCHEZ TOCINO). **H**: Specimen of *S. spelta* from Spain, Ria de Muros, 17 m depth (photo credit: J. SANTIAGO). **I**: Specimen of *S. spelta* from Italy, Alghero, Capo Caccia, 20 m depth (photo credit: Bruno MANUNZA).

Neosimnia illyrica F. A. Schilder, 1927 was published from the Adriatic Sea as "=*spelta* var. Kob.". This probably means that SCHILDER (1927) wanted to give a name to the Adriatic form of *spelta* described by KOBELT (1908), which, translated from the German, is defined as '*a strikingly slender, pure white variety, which is characterized by a pronounced dorsal edge and, when viewed at a*
slightly oblique angle, also shows a clear calloused ridge on the mouth wall, which [is not found] *in specimens from the* [Western] *Mediterranean*[, its] *dimensions are:* [height of] *17.5* [mm], [maximum diameter of] *7 mm*.' (KOBELT, 1908: 39).
SCHIAPARELLI et al. (2005) highlighted a little genetic divergence between two morphs, which were named morphs '*A*' and '*B*'. The authors assign as '*morph A*' the specimens found on *E. singularis* and *E. cavolini*, characterized by a mantle with small, sparse and distinct orange-red spots. '*Morph B*' lives on *L. sarmentosa* [as *Lophogorgia ceratophyta* (Linnaeus, 1758)] and is characterized by having a mantle striped with different colours, and a large median red stripe.
LORENZ & FEHSE, 2009 assign the name *N. illyrica* to the morph with the striped mantle ('*morph B*' *sensu* SCHIAPARELLI et al., 2005) and *Neosimnia spelta* (Linnaeus, 1758) to the morph with sparse and distinct orange-red spot ('*morph A*' *sensu* SCHIAPARELLI et al., 2005).
Aside from the little genetic divergence highlighted by SCHIAPARELLI et al. (2005), differences in shell shape and size, the colour of the mantle, and the host preference don't seem to be stable.
The shell shape is extremely variable within the same population on the same host. In fact, **Pl. 3 Figs. A–E** show two specimens morphologically identifiable as *N. illyrica*, but collected in Croatia feeding on *E. singularis*, the purported host of *Simnia spelta* (Linnaeus, 1758). **Pl. 4 Figs. A–F** show six specimens from the same colony, but with a shell that is intermediate between typical *S. spelta* (**Pl. 4 Figs. A–D**) and the more elongate *S. illyrica*. **Pl. 3 Figs. F–H** show a specimen collected in Spain feeding on *L. sarmentosa* (**Pl. 3 Fig. I**), the purported host of *S. illyrica*, morphologically identifiable as *S. spelta*.
Aquarium observation of living specimens from Croatia proved that the two morphs both feed on polyps of *Eunicella* spp. As well as *Leptogorgia* spp. (J. PRKIC, unpublished).
The mantle pattern and colour seem highly variable too, and intermediate specimens between the two morphs exist, as shown in **Pl. 4 Figs. G–I** and **Pl. 5 Figs. A–I**.
Considering the extreme variability of all these features, *N. illyrica* is herein considered a synonym of *S. spelta*.
Amphiperas (Neosimnia) spelta var. pliomajor Sacco, 1894 is a Pliocenic species distributed in Italy, Spain and Portugal. It is morphologically identical to *S. spelta*, but it reaches larger sizes and, overall, its appearance resembles the one of *S. illyrica*. The two taxa are here considered separate due to the temporal distance between the fossil entity and the living one. This taxon is usually placed in the genus *Neosimnia* P. Fischer, 1884 (FEHSE, 2001, LANDAU & FEHSE, 2004, BRUNETTI & VECCHI, 2015) but is herein considered to belong in *Simnia*. CHIRLI (1997) reports *S. spelta* from the Italian Pliocene; this record was subsequently attributed to *S. pliomajor* (Sacco, 1894) by PACAUD (2021).
Cyphoma bovetensis SEGUENZA, 1880 is placed in the synonymy of *S. spelta* by Molluscabase, but LANDAU & FEHSE (2004) placed this Pliocenic taxon in the synonymy of *Neosimnia pliomajor*.



Pl. 6 Figs. A–J: *Xandarovula aperta* (Sowerby II, 1849). **A–G**: Specimens of *X. aperta* from Croatia. **A–C**: Lastovo Island, 80 m depth on *Corallium rubrum* (Linnaeus, 1758), 2014, R. STANIĆ leg. 2014, 12.8 mm (ANC). **E–G**: Svetac Island, 80 m depth on *Corallium rubrum* (Linnaeus, 1758), 16.1 mm (photo credits: P. UGARKOVIĆ & R.

STANIĆ). **D**, **H**: Specimens of *X. aperta* from Italy. **D**: Specimens of *X. aperta* from off Alghero, Sardinia, 120 m of depth on *Corallium rubrum* (Linnaeus, 1758); 1988; 15.4 mm (ANC). **H**: Specimen of *X. aperta* from Italy, Lecce, Gallipoli, 50 m depth on *Corallium rubrum* (Linnaeus, 1758) (photo credit: F. VITALE). **I–J**: Specimen of *X. aperta* from France, Marseille (photo credit: SLEBRIS on iNaturalist).

Genus *Xandarovula* Cate, 1973
(type species by original designation: *Bulla patula* Pennant, 1777)

Remarks: FEHSE (2018) considers *Xandarovula* Cate, 1973 a synonym of *Simnia*, and the latter as the proper generic placement for the thin-shelled species. The type species of *Simnia*, however, possesses a thick shell with a well-developed callous external lip, a feature absent in the type species of *Xandarovula*, which is *Xandarovula patula* (Pennant, 1777). This species always possesses a thin external lip (**Pl. 8 Figs. A–C**). Five species distributed in the Atlantic and the Mediterranean, plus two undescribed species and one herein described species from Mediterranean, are included in this genus, and all of them share shell features in common.

Xandarovula aperta (Sowerby II, 1849) (**Pl. 6 Figs. A–J**)

* *Ovulum apertum* SOWERBY II, 1849: 478, pl. ci. F. 106, 107.
Ovula birostris (Linnaeus, 1767) sensu TRYON, 1885: 253.
Primovula rhodia SCHILDER, 1932: 52.

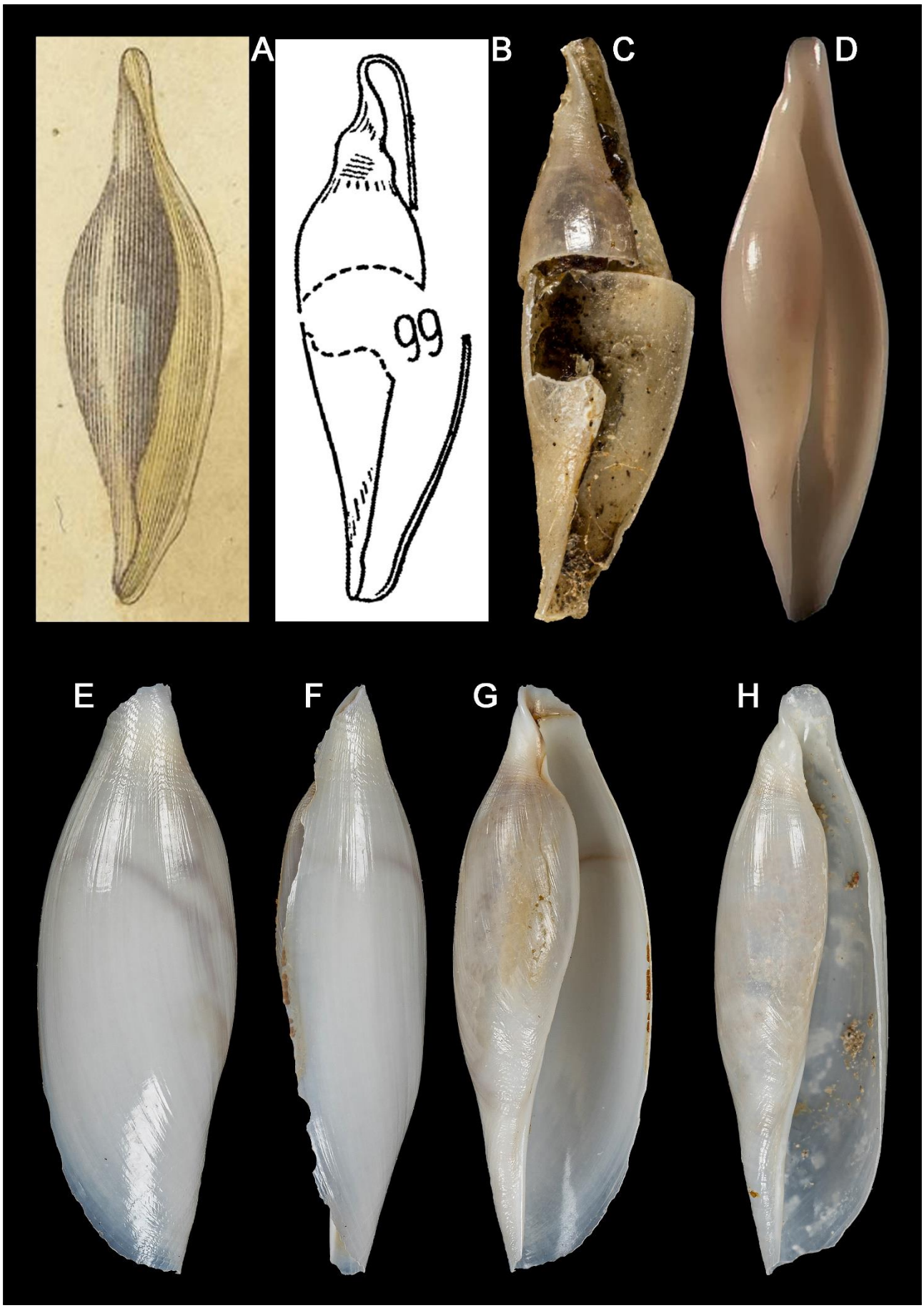
Type locality: Off Alghero, Sardinia, Italy (designated by FEHSE, 2006).

Type material: Syntype at NHMUK (1907.12.30.246).

Original description: 'O. testâ lævigatâ elongato-ovali, fulvâ-rufescente; canalibus breviusculis; aperturâ apertâ, labio externo tenui, anticè sub- emarginatâ; labio interno posticè ad canalem sub-reflexo, anticè sub-tortuoso tenui; intùs sub-depresso' [*Shell smooth, elongated-oval, fulvous-reddish; canals somewhat short; aperture wide, outer lip thin, aperture slightly emarginate anteriorly; inner lip slightly reflected posteriorly towards the canal, thin and slightly sub-tortous anteriorly; interior somewhat depressed*] (SOWERBY II, 1849: 478).

Material studied:
ITALY • 1 spm.; off Sardinia, Alghero; 120 m depth on *Corallium rubrum* (Linnaeus, 1758); 1988; ANC.
CROATIA • 2 spms.; Lastovo Island; 80 m depth on *Corallium rubrum* (Linnaeus, 1758); R. STANIĆ leg.; 2014; ANC.

Remarks: *Xandarovula aperta* (Sowerby II, 1849) was formerly known as *Simnia purpurea* Risso, 1826, but this taxon is a *nomen dubium* since it was published without a drawing, and the type specimen is lost. The short description by RISSO (1826) isn't precise enough to arrive to a proper identification. The main characteristic of this species is the bright reddish colour of the shell, which is purple in fresh collected specimens. The shell is cylindrical, with short and wide siphonal canals. The spiral sculpture is quite variable, with specimens almost fully covered by spiral cords in the ventral side (**Pl. 6 Figs. A–C**) to specimens with spiral sculpture only in the base and close to the siphonal canals (**Pl. 6 Fig. D**). The mantle is red, with whitish papillae. It lives in depths from 20 m (FEHSE et al., 2010) to 92 m (present paper) feeding on *Corallium rubrum* (Linnaeus, 1758) and *Alcyonium glomeratum* (Hassall, 1843) (LORENZ & FEHSE, 2009; FEHSE et al., 2010).
There is the possibility that multiple species with identical or almost identical shells are referred to by this name, since living specimens shown in the present paper from Croatia (**Pl. 6 Figs. E–G**), from Galicia, Spain (FEHSE et al., 2010) and from Salento, Puglia, Italy (**Pl. 6 Fig. H**) show identical shells, but extremely different animal features such as papillae, pattern and colour. Recently, this theory got confirmed by the description of *Simnia jacintoi* Fehse & Trigo, 2015, here placed in the genus *Xandarovula*, which possesses a shell almost or fully identical to the one of *Xandarovula aperta* (Sowerby II, 1849) except for minor differences, but with a totally different mantle.



Pl. 7 Figs. A–H: *Simnia spelta* (Linnaeus, 1758) and *Xandarovula aetheria* n.sp. **A**: Original drawing of *Simnia nicaeensis* by RISSO (1826). **B**: Drawing by SCHILDER (1932) of RISSO's specimen. **C**: Lectotype of *Simnia nicaeensis* Risso, 1826 (MNHN-IM-2000-3644) (photo credit: M. CABALLER). **D**: Specimen of *S. spelta* from Croatia, Brač Island,

60–80 m depth, 13.4 mm (photo credit: N. LETE). **E–H**: Specimens of *X. aetheria* n. sp. from Italy, Sardinia, Bosa Marina, 120 m depth on *Callogorgia verticillata* (Pallas, 1766). **E–G**: holotype of *X. aetheria*, 11.7 × 4 mm (MSF-ov3061). **H**: paratype 1 of *X. aetheria*, 14.9 × 4.4 mm (MSF).

Xandarovula aetheria n. sp. (**Pl. 7 Figs. E–H, Pl. 8 Figs. A–H**)
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Type material (*material studied*):
ITALY • **holotype**; 1 spm.; Sardinia, Bosa Marina; 120 m depth on *Callogorgia verticillata* (Pallas, 1766); MSF-ov3061 (dimensions: 10.2 × 2.9 mm) • **paratype I**; 1 spm.; same data as holotype; ANC (dimensions: 12.5 × 4.1 mm) • **paratype II**; 1 spm.; same data as holotype; ANC (dimensions: 11.4 × 4.2 mm) • **paratype III**; 1 spm.; same data as holotype; ANC (dimensions: 9.9 × 3 mm) • **paratype IV**; 1 spm.; same data as holotype; ANC (dimensions; 9 × 3.1 mm) • **paratype V**; 1 spm.; DPC (dimensions: 13.2 × 4.5 mm) • **paratype VI**; 1 spm.; DPC (dimensions: 12.7 × 4.5 mm) • **paratype VII**; same data as holotype; IMMC (dimensions: 22 × 6.5 mm).

Type locality: Italy, Sardinia, Bosa Marina; 120 m depth.

Etymology: The new species takes its name from the *Aether* mod, a videogame set in a world of islands suspended in the sky. This videogame, along with the individuals within its development team, hold significant sentimental value for the author.

Distribution: Distributed in the whole Mediterranean and Atlantic (FEHSE et al., 2010 as *Simnia nicaeensis*) in depths from 30 m (FEHSE et al., 2010) to 220 m (present paper), feeding on *Callogorgia* spp., *Eunicella verrucosa* (Pallas, 1766) and *Paramuricea* spp. (LORENZ & FEHSE, 2009).

Description: (Data of the holotype (**Pl. 7 Figs. E–G**) in brackets.) Shell fragile, semitransparent, cylindrical, slightly variable in shape, medium-sized for the genus, of a height of ~9–22 mm (10.2 mm) and a width of ~1.9–6.5 mm (2.9 mm). Glossy and rounded whorls, smooth, with faint spiral lirae near the siphonal canals; aperture elongate, anteriorly widened; siphonal canals short and wide. Colour white. Columella straight. Aperture is smooth in the interior. Animal whitish; white mantle with orange dots, with many, fairly large, wart-like papillae. Tentacles white with orange tip.

Remarks: Formely known as *Simnia nicaeensis* Risso, 1826 (see above), this species was undescribed until now.

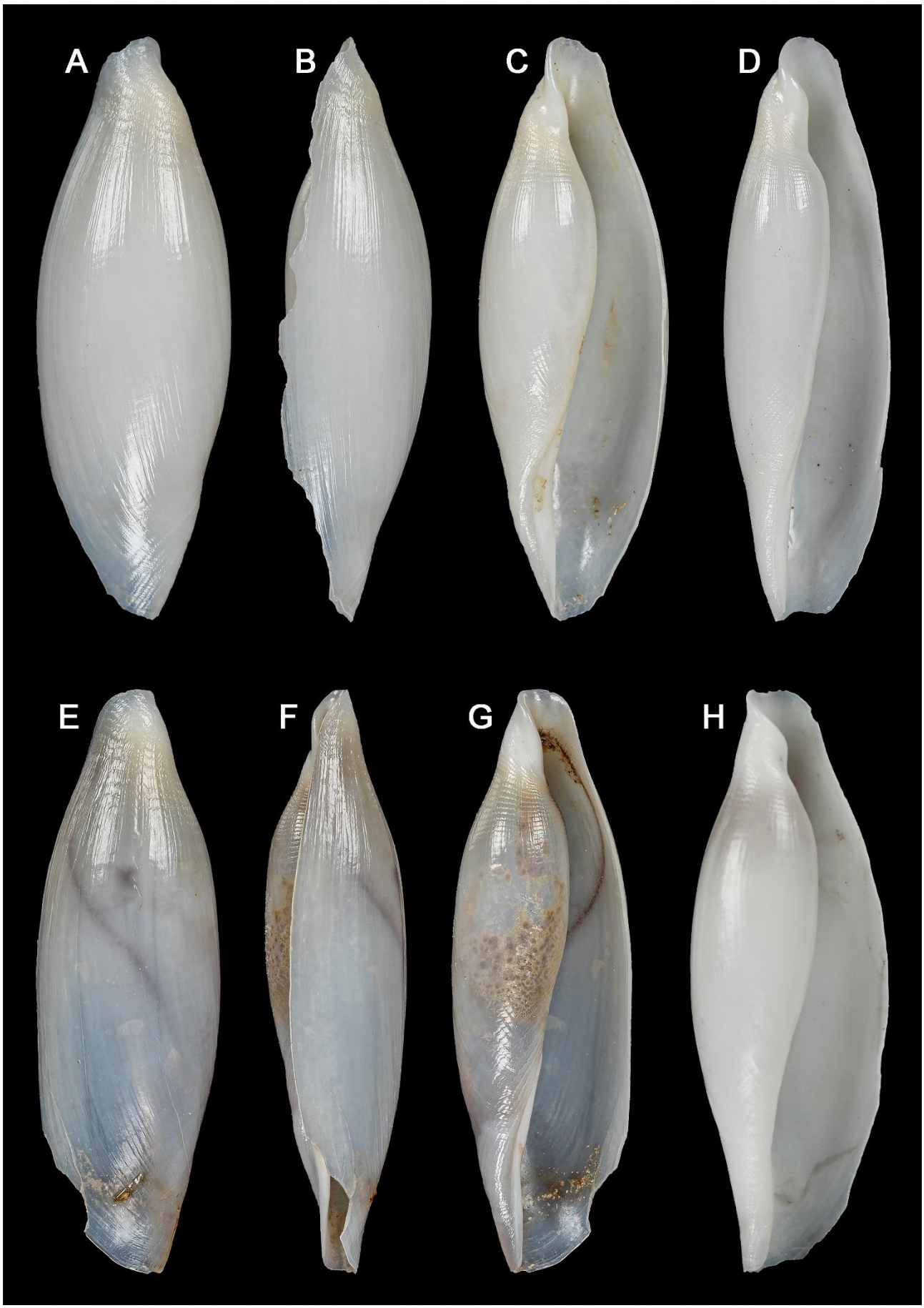
Xandarovula sp. 1 (**Pl. 10 Figs. A–G**)

Material studied:
CROATIA • 2 spms.; Pag Island; 50 m on *Eunicella verrucosa* (Pallas, 1766); 2014; A. PETANI & Đ. IGLIĆ leg.; ALPC.

Remarks: This peculiar new species is known from only two specimens. The shell is elongate, with a developed shoulder and with long siphonal canal that widens at the extremities. The shell lengths of the two specimens are 13.6 and 16.4 mm. The shell colour is orange when fresh, becoming yellowish after some time. The animal is bright orange, with the mantle covered by branched papillae.

Xandarovula sp. 2 (**Pl. 9 Figs. D–F**)

Material studied:
ITALY • 1 spm.; Sardinia, Asinara Island, Pedra Bianca; 15 m depth on *Eunicella singularis* (Esper, 1791); 2015.
FRANCE • 1 spm.; Marseille, Sausset-Les-Pins; 8 m depth on *Eunicella singularis* (Esper, 1791); 2012.



Pl. 8 Figs. A–H: *Xandarovula aetheria* n. sp., specimens from Italy, Sardinia, Bosa Marina, 120 m depth on *Callogorgia verticillata* (Pallas, 1766). **A–C**: paratype 2 of *X. aetheria*, 13.6 × 4.4 mm (MSF). **D**: paratype 3 of of *X.*

aetheria, 12.1 × 3.5 mm (MSF). **E–G**: paratype 4 of *X. aetheria*, 10.8 × 3.4 mm (MSF). **H**: paratype 4 of *X. aetheria*, 13.2 × 4.5 mm (DPC).

Remarks: This new species was recently reported from northern Sardinia under the name of *X. patula* (PIREDDA et al., 2016) (**Pl. 9 Fig. D** in this paper). Another similar specimen was photographed in the south of France and misidentified as *X. aperta* (Sabine BOULAD, **Pl. 9 Figs. E, F**). Both the specimens were left alive in the wild. They were observed in relative shallow water (8–15 m), a very unusual depth for *Xandarovula*. Even if similar to *X. patula* (**Pl. 9 Figs. A–C**), both the visible shell and the mantle differ considerably. The general shape of the shell appears elongate, in contrast to the globose shell of *X. patula*; the siphonal canals are short and wide, in contrast to the very rostrate siphonal canals of *X. patula*, and the patterns of the mantle, with the relative papillae, are quite different, with the new species displaying large, branched papillae, in a higher number than the ones of *X. patula*.
It is very unlikely that a typical eastern Atlantic species is found in a single location in northern Sardinia and southern France, but it is reasonable to assume that this is an undescribed species, endemic to the northern Mediterranean.

Subfamily Prionovolvinae Fehse, 2007
Genus *Pseudosimnia* F. A. Schilder, 1927
(type species by original designation: *Bulla carnea* Poiret, 1789)

Pseudosimnia adriatica (Sowerby I, 1828) (**Pl. 11 Figs. A–K**)

> *Ovula haliotidea* BLAINVILLE *in* DEFRANCE, 1825: 131.
> * *Ovulum adriaticum* SOWERBY I, 1828: 150.
> *Ovula virginea* CANTRAINE, 1835: 391.
> *Aperiovula adriatica iberia* CATE, 1973: 37, fig. 72.
> *Aperiovula emersoni* CATE, 1973: 39, fig. 79.

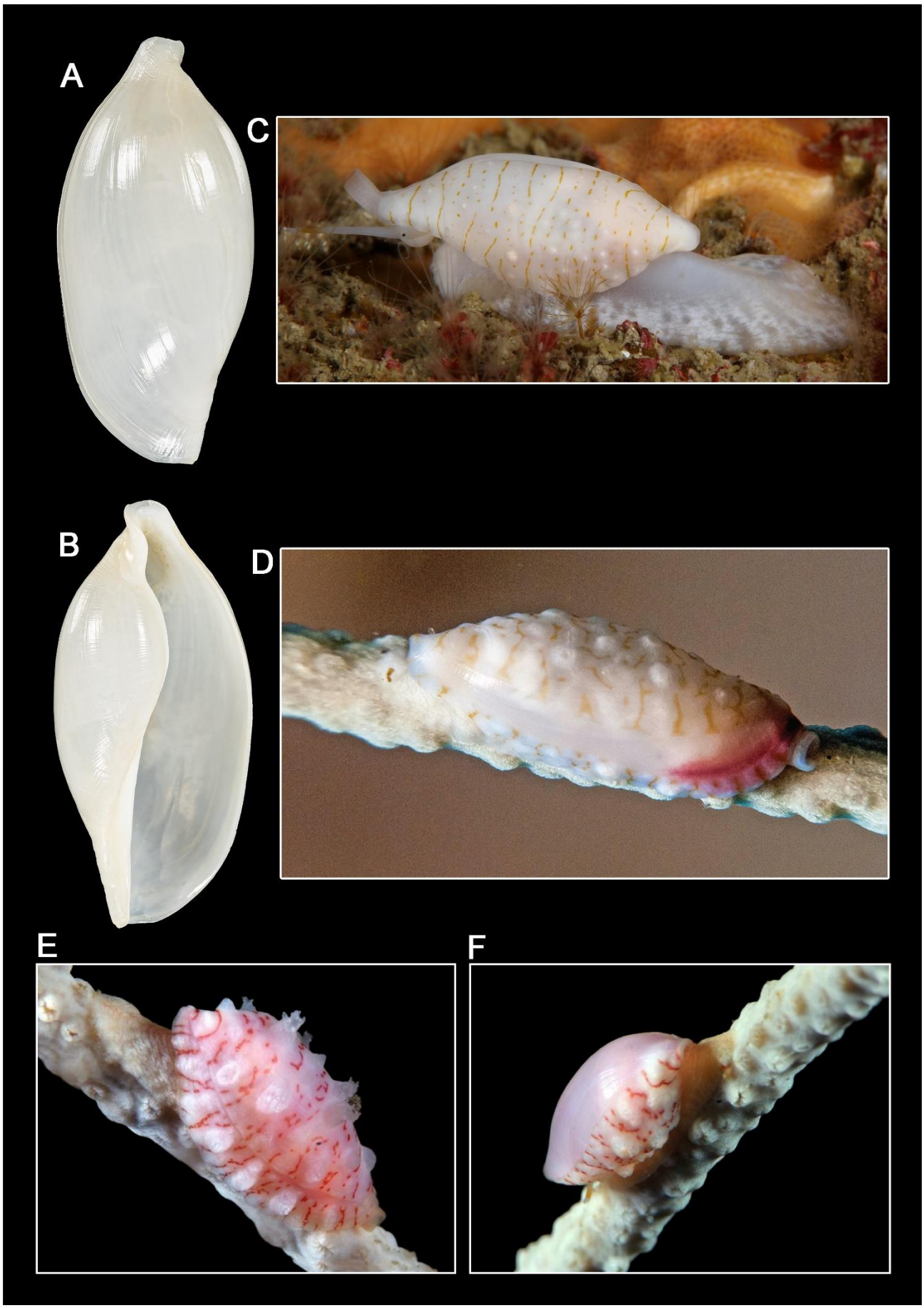
Type locality: Adriatic Sea.

Type material: Not located.

Original description: 'Testá oblongo-ovali, subventricosd, utrinque subacuminata, pallidè carned, hyalind; labii externi margine angusto, intùs denticulato; columella supernè uniplicatâ, infrà subdepressa, intùs marginata' [Shell oblong-oval, sub-ventricose; somewhat acuminated at both extremities, pale flesh colour, hyaline; margin of the outer lip narrow, denticulated on the inside: upper end of the columella with one oblique small swelling; lower end somewhat flattened, with a thickened internal margin] (SOWERBY I, 1828: 150).

Material studied:
CROATIA • 2 spms.; Jabuka Island; 160 m on *Funiculina quadrangularis* (Pallas, 1766); R. STANIĆ leg.; ANC • 2 spms.; Jabuka Island; 180–220 m on *Funiculina quadrangularis* (Pallas, 1766); P. UGARKOVIĆ leg.; PUC.
ITALY • 2 spms.; Capraia, Tuscan Archipelago; 180 m depth; A. GAGLINI leg.; ANC.
MALTA • 2 spms.; off N. Għawdex [Gozo]; 400 m; Jun. 2006; R. STANIĆ leg.; ANC.

Remarks: Very similar to *Pseudosimnia carnea* (Poiret, 1789), but it differs from it by a larger size (~28 mm vs ~19 mm maximum length), a more elongate form, a thin and light shell, and by having a less developed labrum with less pronounced teeth. The animal is white-bluish with black dots around the feet, with a mantle with black fine dots with very short white papillae.
It is a rather uncommon species, which lives in depths that range from 80 m (LORENZ & FEHSE, 2009) to 400 m (present paper), feeding on *Funiculina quadrangularis* (Pallas, 1766).
NOCELLA et al. (2024) recently highlighted that *P. adriatica* and *P. carnea* represent a single lineage based on molecular data. This suggests that a more integrative approach combining habitat preference, host, shell morphology, and anatomy is needed to better understand this very complex family.



Pl. 9 Figs. A–F: *Xandarovula patula* (Pennant, 1777) and *Xandarovula* sp. 2. **A–B**: Specimen of *X. patula* from West England, Bristol Channel, depth of 70 m on *Nemertesia* spp.; 21.6 mm (CAN). **C**: Specimen of *X. patula* from the United Kingdom, Falmouth area, 20–25 m depth on *Alcyonium digitatum* Linnaeus, 1758 (photo credit: D. KIPLING).

D: Specimen of *Xandarovula* sp. 2 from Italy, Sardinia, Asinara Island, Pedra Bianca, 15 m on *Eunicella singularis* (Esper, 1791), 2015 (photo credit: R. PIREDDA). **E–F**: Specimen of *Xandarovula* sp. 2 from France, Marseille, Sausset-Les-Pins, 8 m depth on *Eunicella singularis* (Esper, 1791), 2012 (photo credit: S. BOULAD). **Pl. 10 Figs. A–G**:

Xandarovula sp. 1. Specimens from Croatia, Pag Island, 50 m depth on *Eunicella verrucosa* (Pallas, 1766), 2014, A. PETANI A. & Đ. IGLIĆ leg. (ALPC). **A–B, E**: 16.4 mm. **C–D, F–G**: 13.6 mm.

Pseudosimnia carnea (Poiret, 1789) (**Pl. 12 Figs. A–M**, **Pl. 13 Figs. A–L**)

* *Bulla carnea* POIRET, 1789: 21–22.
Ovula dentata FISCHER VON WALDHEIM, 1807: 157–158.
Bulla lepida DILLWYN, 1817: 474.
Bulla nucleus DILLWYN, 1817: 474.
Ovula cepula SCHUMACHER, 1817: 259.
Bulla nucleus MAWE, 1823: 100.
Bulla triticea (Lamarck, 1810) sensu COSTA, 1830: LXXV, LXXVII.
Ovula adriatica var. elongata REQUIEN, 1848: 84.
Ovula adriatica var. oblonga REQUIEN, 1848: 84.
Ovula carnea var. rosea REQUIEN, 1848: 85.
Ovula carnea var. albida MONTEROSATO, 1875: 45.
Ovula carnea var. alba BUCQUOY, DAUTZENBERG & DOLLFUS, 1883: 134.
Ovula carnea var. pallida BUCQUOY, DAUTZENBERG & DOLLFUS, 1883: 134.
Ovula carnea var. rubra BUCQUOY, DAUTZENBERG & DOLLFUS, 1883: 134.
Ovula carnea var. rufula MOLLERAT, 1890: 105.
Ovula rufula MOLLERAT, 1890: 105.
Ovula carnea var. elongata PALLARY, 1900: 300, pl. 8 fig. 17.
Ovula carnea var. globosa PALLARY, 1900: 300, pl. 8 fig. 15.
Ovula carnea var. major PALLARY, 1900: 300, pl. 8 fig. 18.
Ovula carnea var. minor PALLARY, 1900: 300, pl. 8 fig. 13.
Ovula carnea var. obtusula PALLARY, 1900: 300, pl. 8 fig. 16.
Ovula carnea var. violacea PALLARY, 1900: 300.
Ovula carnea var. gibbosa COEN, 1933: 46.
Primovula carnea var. dorsolirata COEN, 1949: 18.
Primovula carnea var. major COEN, 1949: 18.
Pseudosimnia carnea expallescens SCHILDER, 1967: 197–198, fig. 2.
Pseudosimnia angusta CELZARD, 2017: 29–33.

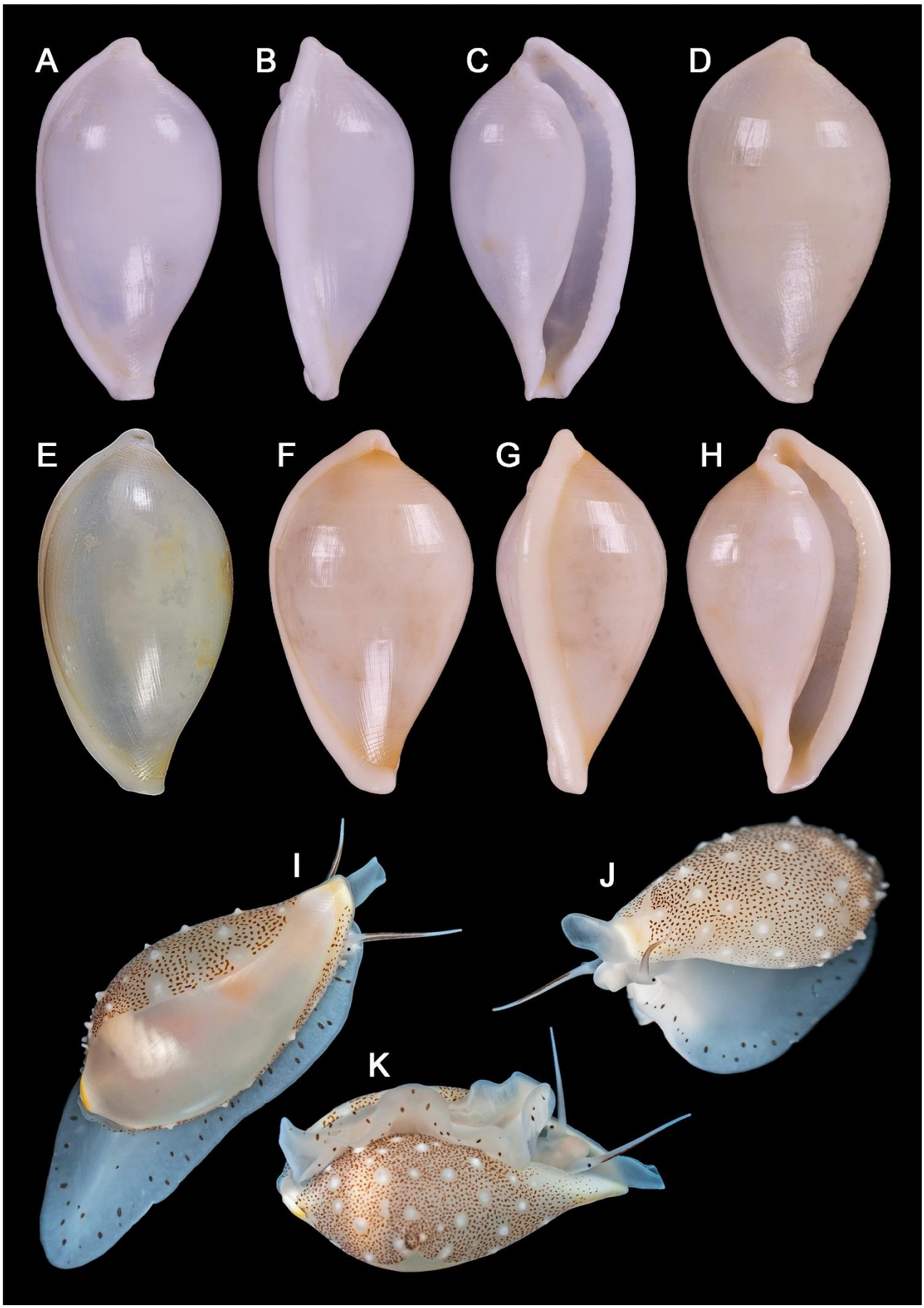
Type locality: Algeria (Numidia).

Type material: Probably lost.

Original description: 'Testa ovata incarnata gibba, labro arcuato incrassato, intus dentato' [Shell ovate, flesh-colored, gibbous, with a thickened, arched lip, internally toothed] (POIRET, 1789: 21–22).

Material studied:
CROATIA • 8 spms.; Lastovo Island; 80 m depth on *Corallium rubrum* (Linnaeus, 1758); 2014; R. STANIĆ leg.; ANC.
MOROCCO • 45 spms.; between Cap Malabata and Targa; 80 m depth on *Corallium rubrum* (Linnaeus, 1758); ANC.
ITALY • ~400 spms.; Sardinia, Alghero; 90–100 m depth on *Corallium rubrum* (Linnaeus, 1758); ANC • 2 spms.; Sardinia, Cagliari Gulf, Capo Teulada; 140 m; ANC.
SPAIN • 2 spms.; Malaga; 80 m depth.

Remarks: The most common Mediterranean species, found by the thousands by coral fishermen in North Sardinia (pers. obs.). It is distributed throughout the whole of the Mediterranean and lives on *Corallium rubrum* (Linnaeus, 1758) and *Lophogorgia* spp. (LORENZ & FEHSE, 2009). It is an extremely variable species as regards size, sculpture, shape, and colour. Its size can range from 8 to



Pl. 11 Figs. A–K: *Pseudosimnia adriatica* (G. B. Sowerby I, 1828). **A–D, I–K**: Specimens of *P. adriatica* from Croatia, Jabuka Island, on *Funiculina quadrangularis* (Pallas, 1766), R. Stanić leg. (ANC). **A–C**: 160 m depth, 18.7 mm. **D**: 160 m depth, 21.5 mm. **I–K**: 180–220 m depth, 21 mm (photo credit: P. Ugarković). **E**: Specimen of *P.*

adriatica from Tuscan Archipelago, Capraia, 180 m depth, A. GAGLINI leg., 19.2 mm (ANC). **F–H**: Specimen of *P. adriatica* from Malta, off northern Għawdex [Gozo], 400 m depth, Jun. 2003, 20 mm (ANC).

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19 mm, and the shape can vary from bulbous to very elongate with rostrate terminals (corresponding to *Pseudosimnia angusta* Celzard, 2017). The surface can be fully (or almost fully) smooth, or fully sculpted by thin spiral cords. The colour ranges from the classic red, to purple, orange, yellow, and pure white. The animal is whitish in color, with black dots on the foot. The mantle is transparent and finely dotted with whitish irregular short papillae.
Throughout the centuries, this extreme variability led to the creation of many specific and varietal names, nowadays all synonyms of the species. The most recent is *P. angusta* (**Pl. 13 Figs. I–K**) from Atlantic and Mediterranean Morocco. It lives on *C. rubrum* together with typical specimens of *P. carnea* and it is characterized by its slender, rostrate, less bulbous and lighter shell, all features that can be found in other Mediterranean populations of *P. carnea* (**Pl. 13 Figs. A, D, E, F–H, L**).
Among the synonyms of *P. carnea*, the original drawing of *Ovula carnea var. elongata* Pallary, 1900 (PALLARY, 1900: pl. 8 fig. 17) shows a specimen possessing all the features of *P. angusta*, suggesting that this particularly elongate form was already described by previous authors.

Pseudosimnia juanjosensii (Pérez & Gómez, 1987) (**Pl. 14 Figs. A–L**)

> **Aperiovula juanjosensii* PÉREZ & GÓMEZ, 1987: 1–2.
> *Primovula (Adamantia) bellocqae* CARDIN, 1997: 24–25.

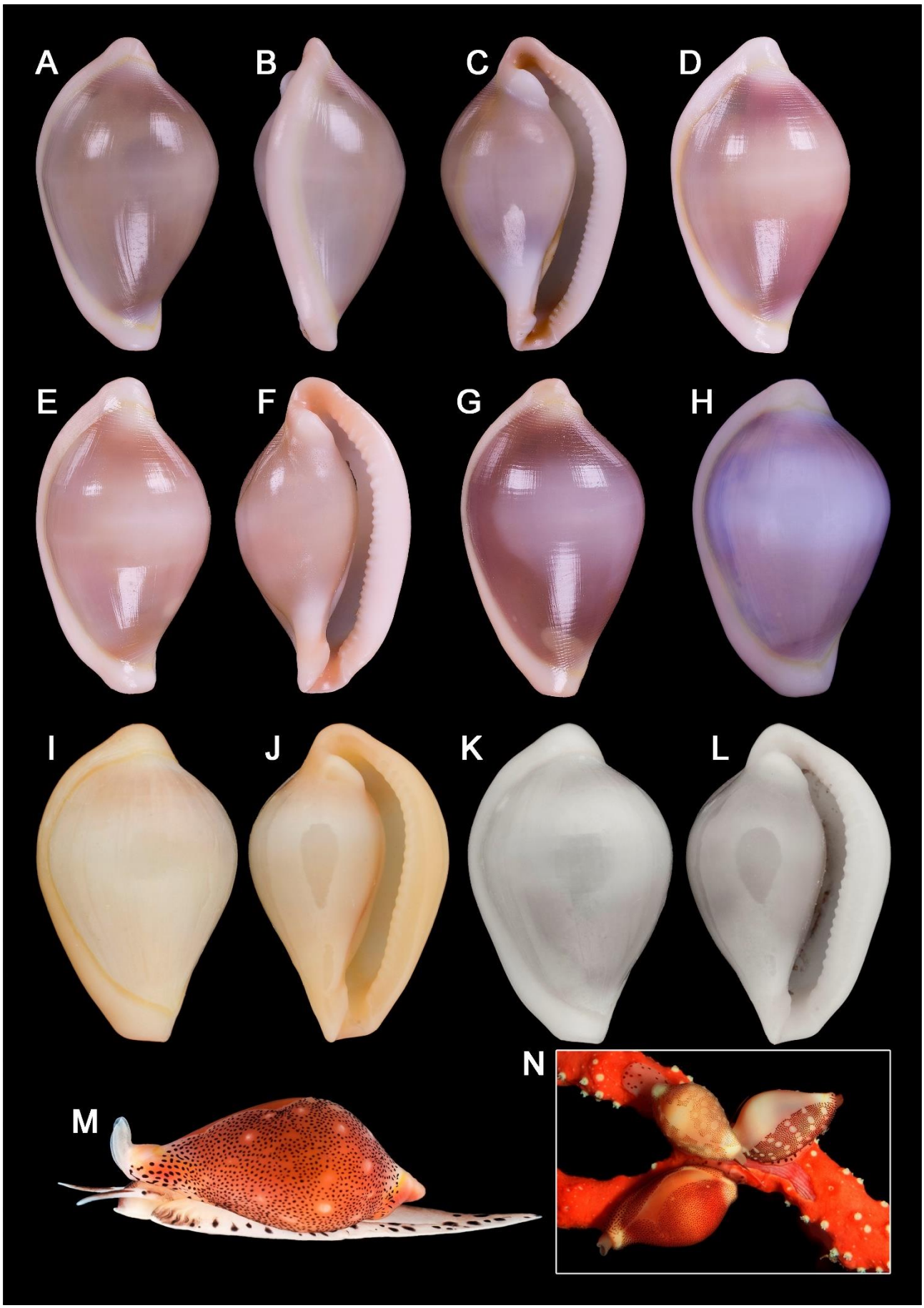
Type locality: Spain, Canary Island, Tenerife and La Palma Islands, at a depth ranging from 100 to 250 m.

Type material: Holotype deposited in AMI (International Malacological Society).

Original description: '*The shell is pyriform in shape, not very solid, with extremely small apertures, slightly translucent, and small in size. The base is convex. The aperture is rather narrow with the columella and the lip being practically parallel. The latter has hardly accentuated denticles in the internal border, which terminate toward the anterior extremity. The funiculus is well marked. The posterior extremity is enlarged and pointed, with the sinus open and slightly curved toward the dorsal part. The lip border is clearly marked. The columella is curved with an evident small depression and dimple. The syphon canal terminates obliquely (the external lip is shorter than the internal one).The external surface - it is sculptured by transversal striae localized at both extremities, particularly on the posterior where they are more numerous and dense. The globular area of the final whorl has no spiral sculpture, except for some so fine that they are visible only upon microscopic examination. Colouring - the colouring is bright white, almost translucent. On the lip borders and the extremities it takes on an opaque ivory shade. An exact description of the mollusc itself is not yet possible, but local fishermen have referred that it has a reddish tint*' (PÉREZ & GÓMEZ, 1987: 1–2).

Material studied:
ITALY • 2 spms.; Sicily, Messina, Punta Faro; 90 m; ATPC • 7 spms.; Sicily, Egadi Islands; 90–120 m depth; Aug. 2022; ANC.
MALTA • 1 spm.; Marsaxlokk Bay; 80 m; CCC.

Remarks: Very peculiar species, characterized by its small size (7–9 mm), the very rostrate extremities, and the very weak, almost absent, teeth in the labrum. Distributed in the central-western Mediterranean Sea and Atlantic Ocean, from 50 m (CARDIN, 1997) to 300 m (BOUCHET & WARÉN, 1993) feeding on *Villogorgia bebrycoides* (von Koch, 1887) and most probably also on *Eunicella* spp. and *Paramuricea* spp.
This species was recently reported from Malta (CACHIA, 2023) misidentified as *Pseudosimnia angusta* Celzard, 2017.



Pl. 12 Figs. A–N: *Pseudosimnia carnea* (Poiret, 1789). **A–G, M**: Specimens of *P. carnea* from Croatia. **A–G**: Lastovo Island, 80 m depth on *Corallium rubrum* (Linnaeus, 1758). **A–C**: 17.8 mm (ANC). **D**: 14.5 mm (ANC). **E–F**: 13.8 mm (ANC). **G**: 13.5 mm (ANC). **M**: Svetac Island, 80 m depth on *Corallium rubrum* (Linnaeus, 1758) (photo

credit: P. UGARKOVIĆ). **H**: Specimen of *P. carnea* from Spain, Malaga, 80 m depth, 12.6 mm (ANC). **I–L**: Specimens of *P. carnea* from Italy, Sardinia, Alghero, 90–100 m depth on *Corallium rubrum* (Linnaeus, 1758) (ANC). **I–J**: 10.7 mm. **K–L**: 10.1 mm (ANC). **N:** Italy, Sardinia, Alghero, 120 m depth on *Corallium rubrum* (Linnaeus, 1758) (photo credit: B. MANUNZA).

Spiculata bijuri Cate, 1976 (now *Simnia bijuri* (Cate, 1976)) from the Western Atlantic was considered a senior synonym of *Primovula (Adamantia) bellocqae* Cardin, 1997 (now synonym of *Pseudosimnia juanjosensii* (Pérez & Gómez, 1987)) by SIMONE (2007), but the holotype differs considerably from the typical *P. juanjosensii* by its bigger size (14.5 mm), a very elongate profile, and a lack of labral teeth. SIMONE (2007) shows other specimens under this name, but they differ considerably from the holotype of *S. bijuri*, being more similar to the typical *P. juanjosensii*. These specimens from Westen Atlantic probably belong to a similar, as yet undescribed, species.

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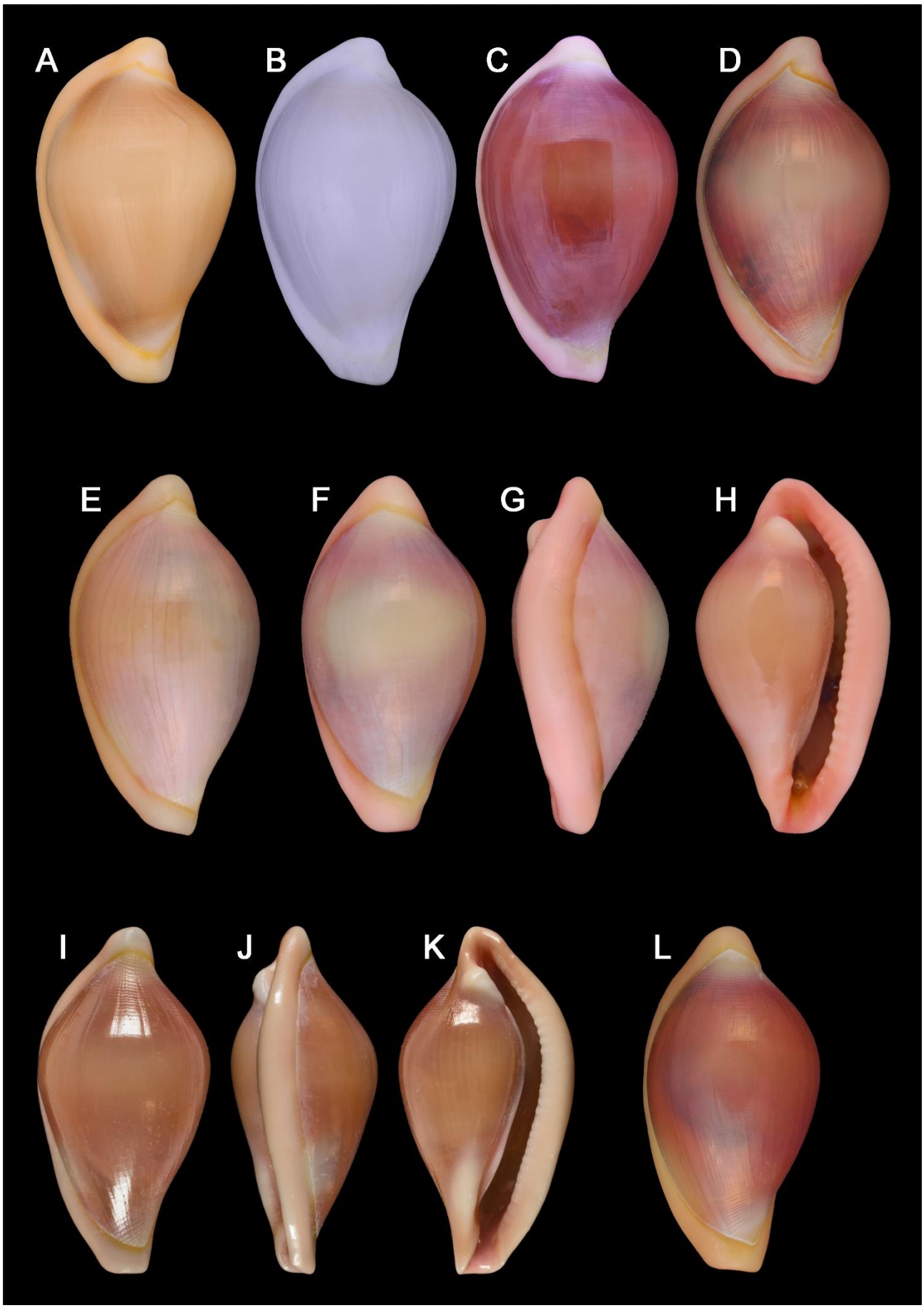

Pl. 13 Figs. A–L: *Pseudosimnia carnea* (Poiret, 1789). **A, C**: Specimens of *P. carnea* from Spain, Malaga, 80 m depth (ANC). **A**: 12.5 mm. **C**: 13.1 mm. **B, D–H, L**: Specimens of *P. carnea* from Italy, Sardinia. **B**: Cagliari Gulf, Capo Teulada, 140 m depth, 11.3 mm (ANC). **D–L**: Sardinia, Alghero, 90–100 m depth on *Corallium rubrum*

(Linnaeus, 1758) (ANC). **D**: 11.4 mm. **E**: 12.2 mm. **F–H**: 14.7 mm. **L**: 13.4 mm. **I–K**: Holotype of *Pseudosimnia angusta* Celzard, 2017 (MNHN-IM-2000-33175), Morocco, waters close to the Gibraltar Strait, 80 m depth, 13.5 mm.

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Pl. 14 Figs. A–L: *Pseudosimnia juanjosensii* (Pérez & Gómez, 1987). Specimens from Italy, Sicily. **A–C**: Egadi Islands, 90–120 m depth, Aug. 2022, 7.5 mm (ANC). **D**: Messina, Punta Faro, 90 m depth, 8.3 mm (ATPC). **E**: Egadi Islands, 90–120 m depth, Aug. 2022, 9 mm (SBC). **F–H**: Egadi Islands, 90–120 m depth, Aug. 2022, 7.6 mm (ANC).

I–K: Egadi Islands, 90–120 m depth, Aug. 2022, 8.3 mm (ANC). **L**: Egadi Islands, 90–120 m depth, Aug. 2022, 8.7 mm (ANC).

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