https://www.biodiversityjournal.com - Edizioni Danaus
Biodiversity Journal, 2024, 15 (4): 917–921 **Article**
https://doi.org/10.31396/Biodiv.Jour.2024.15.4.917.921
https://www.zoobank.org/0DD75D78-B2E7-47BA-AD5A-C1F02A6A8205

Biodiversity Journal
ISSN 2039-0394 (Print Edition)
ISSN 2039-0408 (Online Edition)

Cima verae n. sp. from the Mediterranean Sea (Gastropoda Cimidae)

Francesco Giusti[1] & Pasquale Micali[2,*]

[1]via XXV Aprile 19/E, 57017 Collesalvetti, Italy; e-mail: francescoluigi1949@libero.it
[2]via Papiria 17, 61032 Fano (PU), Italy; e-mail: lino.micali@virgilio.it
*Corresponding author

ABSTRACT A new Mediterranean species of the genus *Cima* Chaster, 1896 (Gastropoda Cimidae) is described: *Cima verae* n. sp. The new species has been collected in the deep waters of Tuscan Archipelago and littoral waters at Scilla (Strait of Messina) in Italy. The new species is characterised by the apex with only weak growth lines and of ogival outline. The general shell outline is similar to *C. minima* (Jeffreys, 1858), a species not rare in the same shell grit, that may be easily separated for the globose apex and more convex initial whorls. The new species is also similar to *Cima mingoranceae* Rolán et Swinnen, 2014, described from Senegal and Mauritania, from which it mainly differs in that it lacks the particular sculpture on the apex, consisting of spiral cords that curve and become axial.

KEY WORDS *Cima*; *Cima verae*; new species; taxonomy; Mediterranean Sea.

Received 14.11.2024; accepted 06.12.2024; published online 30.12.2024

INTRODUCTION

According to WoRMS (2024), eight recent species are actually placed in the genus *Cima* Chaster, 1896. Seven are distributed in the Northeastern Atlantic Ocean and four also in the Mediterranean Sea. Only one species *C. urdunensis* Bandel, 2005 is reported for the Red Sea. The Miocene species *C. neglecta* (Janssen, 1969) is known from Netherlands.

In the Mediterranean Sea, according to Sistematica Mediterranea (accessed 04/11/2024), four species are present: *C. apicisbelli* Rolan, 2003, *C. cuticulata* Warén, 1993, *C. cylindrica* (Jeffreys, 1856) and *C. minima* (Jeffreys, 1858). Presence of *Cima cuticulata* in the Mediterranean is based on the finding of two living specimens and two shells off Acitrezza (Eastern Sicily) at a depth of 140 m, preserved at the MNHN (fide Warén, 1993). The Mediterranean species live mainly in superficial waters (infralittoral) (Warén, 1993), even if *C. minima* is also frequent in the muddy bottom of the Tuscan Archipelago, at a depth of about 500 m.

MATERIAL AND METHODS

The material from Tuscan Archipelago (Italy) was found in shell grit obtained by fisherman operating with trawling net. The material from Scilla (Reggio Calabria, Italy) was manually collected during SCUBA diving at 45 m depth, at the base of the "Dente di Skylla 1 [Skylla's Tooth 1]" (Vazzana, 2010). This very spectacular rock, having the form of tooth and a height of about 20 m, is also known by divers as "La Montagna". The specimens are all fresh, but no one has traces of soft parts. The World Register of Marine Species (WoRMS, 2024) and the systematic list of the SIM (2024 - Italian Society of Malacology) are used for nomenclatural updates.

ABBREVIATIONS AND ACRONYMS. DSC: Danilo Scuderi collection, Catania, Italy; FAC: Franco Agamennone collection, Pescara, Italy; FGC: Francesco Giusti collection, Livorno, Italy; h: height of last whorl; H: maximum height (in mm); MNHN: Muséum National d'Histoire Naturelle, Paris; MTC: Morena Tisselli collection, San Zaccaria, Italy; PMC: Pasquale Micali collection, Fano, Italy; SEM: scanning electron microscope; sh/shs: empty shell/s.

RESULTS

Systematics

Classis GASTROPODA Cuvier, 1795
Superfamilia CIMOIDEA Warén, 1993
Familia CIMIDAE Warén, 1993
Genus *Cima* Chaster, 1896
TYPE SPECIES. *Jeffreysia cylindrica* Jeffreys, 1856

Cima verae n. sp. Figs. 1–4, 7, 8
https://www.zoobank.org/5D2AF809-337D-41E4-8AE4-40A0A6E14515

TYPE LOCALITY. Italy, South Ligurian Sea, between Capraia Island and Capo Corso, 500-600 m depth.

TYPE MATERIAL. Holotype. ITALY • 1 sh; South Ligurian Sea, between Capraia Island and Capo Corso; 500–600 m depth; shell grit from fishermen, muddy bottom, H = 1.5 mm, Figs. 1–4; Holotype, MNHNIM-2000-29195. Paratypes. ITALY • 1 sh; same data as holotype; H = 1.5 mm, Fig. 5; paratype 1, FGC • 1 sh; same data as holotype; H = 1.5 mm; paratype 2, PMC • 1 sh; same data as holotype; H = 1.0 mm; paratype 3, DSC • 1 sh; same data as holotype; H = 1.2 mm, Fig. 6; paratype 4, FAC.

OTHER MATERIAL EXAMINED. *Cima verae* n. sp. ITALY • 10 shs; same data as holotype; FGC • 6 shs; same data as holotype; PMC • 2 shs; Reggio Calabria, Scilla, "Dente di Skylla 1"; 45 m depth; FAC.

Cima minima (Jeffreys, 1858). ITALY • 2 shs; Tyrrhenian Sea, Tuscan Archipelago; 300-350 m depth; PM collection • 110 shs; South Ligurian Sea, between Capraia Island and Capo Corso; 500–600 m depth; shell grit from fishermen, muddy bottom; FGC • 30 shs; same data as previous; PMC • 1 sh; Sicily, Messina, harbour; 30 m depth; PMC • 1 sh; Reggio Calabria, Scilla, "Dente di Skylla 1"; 45 m depth; FAC • 3 shs; Sicily, Ustica Island; 30 m depth; PMC • 3 shs; Palermo, Terrasini; 65 m depth; PMC. SPAIN • 1 sh; Algeciras, Getares; beached; PMC. MOROCCO • 2 shs; Al Hoceima; 2–10 m depth; MTC.

Cima cylindrica (Jeffreys, 1856). ITALY • 1 sh; Trapani, San Giuliano beach; beached; PMC • 1 sh; Salerno, Marina di Camerota, Porto Infreschi; 25 m depth; PMC. CROATIA • 1 sh; Umag; 6 m depth; PMC. GREECE • 2 shs; Karpathos Island, Amoopi bay; 25 m depth; FAC • 1 sh; Rodi Island, Koskinou; 3–8 m depth; PMC.

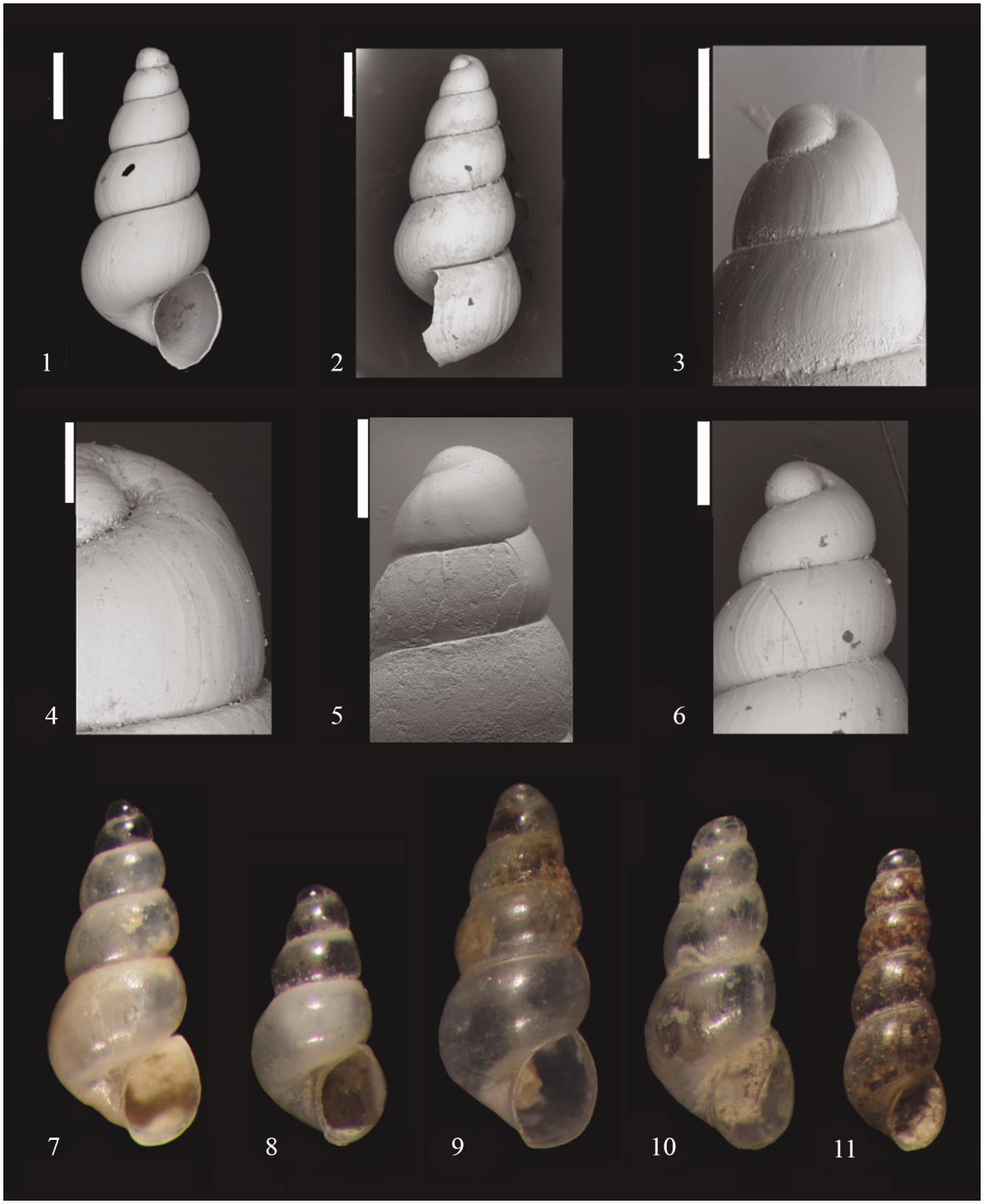
Cima cuticulata Warén, 1993. NORWAY • 1 sh; Trondheimfjord; unrecorded depth; specimen illustrated in Giannuzzi-Savelli et al. (2014, Fig. 340); PMC.

DESCRIPTION. Shell small, thin, transparent, glossy. Spire regularly conical, with an acute apex. Protoconch heterostrophic, ogival in outline, the transition with teleoconch is not clearly marked. Protoconch seems to be composed of about 0.7 whorls, height about 150 µm, with opistocyrt growth lines. Teleoconch consists of about 4.1 whorls, slightly convex, separate by a slightly canaliculate suture, inclined of about 10°. The surface is covered by growth lines that are opistocyrt near adapical suture, but quickly turn to prosocyrt, with a well-developed curvature. The aperture is oval-elongate, adapically acute, occupying about 33% of total shell height. Umbilicus wide and deep. Internal lip not expanded over the umbilicus. The outer lip observed laterally is sigmoid, with a subsutural sinus. Operculum unknown.

DISTRIBUTION. At present, the new species seems to be distributed in the South Ligurian Sea (Italy) at depths of 500–600 m and at Scilla (Reggio Calabria, Italy), depth 45 m.

ETYMOLOGY. The new species is dedicated to Vera Cirinà (Prague, Czech Republic), recently graduated in U.K. in Environmental Science with focus on marine ambient.

REMARKS. The new species is very similar to *Cima mingoranceae* Rolán et Swinnen, 2014, a species described on material from Senegal and Mauritania at depth of 80–120 m. The original de-



Figures 1–4. *Cima verae* n. sp., between Capraia and Capo Corso, 500-600 m depth, Holotype. MNHN-IM-2000-29195. Fig. 1: front view. Fig. 2: lateral view. Fig. 3: apex. Fig. 4: protoconch. Figure 5. *Aclis gulsonae* (W. Clark, 1850), between Capraia and Capo Corso, 500–600 m depth, apex. Figure 6. *Cima minima* (Jeffreys, 1858), between Capraia and Capo Corso, 500–600 m depth, apex. Figures 7–9. *Cima verae* n. sp. Fig. 7: between Capraia and Capo Corso, 500–600 m depth, Paratype 1, H = 1.5 mm, FGC. Fig. 8: between Capraia and Capo Corso, 500–600 m depth, Paratype 4, H=1.2 mm, FAC. Fig. 9: Scilla (Reggio Calabria), "Dente di Skylla 1", 45 m, H = 1.72 mm, FAC. Figure 10. *Cima minima* (Jeffreys, 1858), Scilla (Reggio Calabria), "Dente di Skylla 1", 45 m depth, H = 1.3 mm. Figure 11. *Cima cylindrica* (Jeffreys, 1856), Amoopi bay (Karpathos island), 25 m depth, H = 1.1 mm. Scale bar: Figs. 1, 2 = 300 µm, Fig. 5 = 200 µm, Figs. 3, 6= 150 µm, Fig. 4 = 50 µm.

scription reads "*Shell very small, conical, fragile, with a smooth surface, suture distinct, consisting of about 4 convex whorls. Protoconch probably with one whorl, but there is not any difference in the transition with the teleoconch; diameter of the nucleus of the protoconch about 100 µm. The beginning of the protoconch is heterostrophic, the nucleus is in a lower level of the apex. The whorls are convex, and the sculpture only consists of the growth lines which are opistocyrt in the subsutural area, but change to prosocyrt below this area. No other sculpture. The last whorl is almost 60% of the shell height. The deep umbilicus is a little reduced because of a recurvation of the internal lip. The aperture is ovoid, peristome narrow, only in contact with the previous whorl for a short distance*". The holotype measures 1.41 mm x 0.61 mm.

Based on the original SEM photo of *Cima mingoranceae* apex (Rolán & Swinnen, 2014: fig. 4, 5) this has a sculpture of blurry cordlets, possibly in number of 7–9, that start nearly spiral and then with a large curve became roughly axial and meet the adapical suture. This character, not indicated in the original description, is very unusual and is present on both SEM photos of paratypes, therefore shall be considered a constant specific character. As no one specimen of *C. verae* n. sp. shows sign of spiral sculpture on the protoconch, we consider this character valid for specific separation. In addition, *C. mingoranceae* has more convex whorls, with maximum width closer to the abapical suture.

Before comparing the new species with *C. minima*, is necessary to investigate the various opinions on this species that was described by Jeffreys on material from Lerwick (Shetland, UK). Marshall (1917) mentioned both *C. minima* and *C. cylindrica* from Mediterranean. Aartsen (1981) illustrated one specimen from Hendaye (north France). The only doubts on this species were raised by Oliver et al. (2012) because they found at Columbretes Islands (Alboran Sea), depth of 16–55 m, a form having a protoconch not so globular as the specimens illustrated by Aartsen (1981), Fretter & Graham (1982) and Warén (1993), all of Atlantic origin, and having the protoconch sculptured with weak axial ribs. Rolan & Swinnen (2014) also indicated that *C. minima* "*frequently has some axial sculpture on the first whorl*". The presence of axial ribs was observed by the second author (P. M. unpublished data) in specimens from Ustica Island (NW Sicily) at depth of 30 m, and seems to be present only in specimens living in littoral waters, while all the specimens of *C. minima* found in the same shell grit with *C. verae* n. sp. show smooth protoconch (Fig. 6). Maximum height of *C. minima* was indicated by the Authors (Aartsen, 1981; Fretter & Graham, 1982; Scaperrotta et al., 2012; Gofas, 2011) as around 1.5 mm, while the specimens found in the same shell grit with *C. verae n. sp.* reach about 2.5 mm, with a single specimen of 3 mm. The largest specimen of *C. verae* measures H = 1.65 mm. The main discriminating character is the shape of the apex, more elevated and pointed in *C. verae* n. sp. (compare Figs. 2, 3 against Fig. 6). Concerning the general outline, *C. verae* n. sp. mainly differs for the less convex initial two whorls (compare Figs, 2, 3 to Fig. 6) and less deep suture between the two initial whorls. The suture then becomes slightly canaliculate, while in *C. minima* this does not happen.

Another species showing an outline similar to *C. verae* n. sp. is *C. cuticulata* Warén, 1993, for which the author indicated a bipolar geographical distribution: a northern one from Norway to Island, and a single Mediterranean record at Acitrezza (Sicily). The holotype of *C. cuticulata* was not illustrated, while Warén (1993) illustrated at fig. 31A a specimen from Bay of Biscay, mentioned in the "Material examined", and at fig. 31B one specimen from Andfjorden (northern Norway) not cited in the text. In addition, both figures do not properly show the shape of the apex, because the scope of the photo was only the front and side view. The request to have more info on holotype (PM by mail) had no reply from the Stockholm Museum of Natural History. The main difference is in the flexuous incremental lines of the new species, opposed to the straight and orthocline incremental lines of *C. cuticulata*. The aperture of the new species is more expanded and squared, there is an umbilicus and the external lip, when seen in side-view is flexuous instead of straight. In addition, *C. cuticulata* has a stockier outline, flatter whorls and a more globular apex.

Other *Cima* species reported for Mediterranean Sea, as *Cima apicisbelli* Rolán, 2003 and *C. cylindrica* (Jeffreys, 1856) (Fig. 11), are much more different.

The protoconch of *Aclis gulsonae* (W. Clark, 1850) is quite similar in the outline (Fig. 5), differ-

ing for being larger, more rounded and not heterostrophic.

ACKNOWLEDGEMENTS

We thank Danilo Scuderi (Catania, Italy) for the SEM photos, and Franco Agamennone (Pescara, Italy) for optical photos and table preparation. Thanks to Franco Agamennone and Morena Tisselli (San Zaccaria, Italy) for sharing specimens and reports of finding. Thanks to Priscilla Gaël Bourguignon (MNHN) for assignment of holotype catalogue number, and to MNHN staff for the support.

REFERENCES

Aartsen J.J. van, 1981. European marine Mollusca: notes on less well-known species II. The genus *Cima* Chaster, 1896. Basteria, 45: 117–119.

Fretter V., Graham A. & Andrews E.B., 1982. The Prosobranch Molluscs of Britain and Denmark. Part 7. Journal of Molluscan Studies, Supplement 11: 363–434.

Giannuzzi-Savelli R., Pusateri F., Micali P., Nofroni I. & Bartolini S., 2014. Atlante delle conchiglie marine del Mediterraneo, vol. 5 (Heterobranchia). Edizioni Danaus, Palermo. 111 pp with 41 unnumbered pls. (figs. 1–363), appendix pp. 1–91.

Gofas S., 2011. Familia Cimidae. In: Gofas S., Moreno D. & Salas C. (coords), Moluscos marinos de Andalucía. Malága. Servicio de Publicaciones e Intercambio Científico. Universidad de Málaga, pp. 359–361.

Marshall J.T., 1917. Additions to "British conchology" 7. Journal of Conchology, 15: 168–174.

MolluscaBase eds., 2023. MolluscaBase. Accessed at: https://molluscabase.org on 04 Nov. 2024. https://doi.org/10.14284/448

Oliver J. D., Templado J. & Kersting D., 2012. Gasterópodos marinos de la islas Columbretes (Mediterráneo occidental). Iberus, 30: 49–87.

Rolán E. & Swinnen F., 2014. A new species in the genus *Cima* (Prosobranchia: Cimidae) from Senegal. Gloria Maris, 53: 6–9.

Scaperrotta M., Bartolini S. & Bogi C., 2012. Accrescimenti: stadi di accrescimento dei molluschi marini del Mediterraneo. Vol. IV. L'Informatore Piceno, Ancona, 184 pp.

Società Italiana di Malacologia, 2024. Sistematica Mediterranea. Accessed through: https://www.societaitalianadimalacologia.it/sistematica-2/mediterranea/819-cimidae.html, on 04 Nov. 2024.

Vazzana A., 2010. La malacofauna del Circalitorale di Scilla (Stretto di Messina). Bollettino Malacologico, 46: 65–74.

Warén A., 1993. New and little known mollusca from Iceland and Scandinavia. Part 2. Sarsia, 78: 159–201.