

A new and striking *Fusinus* (Gastropoda: Fascioliidae) from Chile

K. FRAUSSEN

Leuvensestraat 25, B-3200 Aarschot, Belgium
e-mail: luc.fraussen@ping.be

R. HADORN

Schuetzenweg 1, CH-3373 Roethenbach, Switzerland
e-mail: Roland.Hadorn@ezv.admin.ch

KEYWORDS. Gastropoda, Fascioliidae, Buccinidae, *Fusinus*, *Aeneator*, *Bayerius*, new taxon, Chile.

ABSTRACT. A new species of Fascioliidae is described from deep water off the Chilean coast. The shell and the radula of the new species are compared with *Fusinus valdiviae* Hadorn & Fraussen, 1999 and with some species of the buccinid genera *Aeneator* Finlay, 1927 and *Bayerius* Olsson, 1971.

RESUME. Une nouvelle espèce de Fascioliidae est décrite d'eau profonde, au large du Chili. Le coquillage et la radula de la nouvelle espèce sont comparés avec *Fusinus valdiviae* Hadorn & Fraussen, 1999 et avec des espèces des genres *Aeneator* Finlay, 1927 et *Bayerius* Olsson, 1971.

INTRODUCTION

Among the many shells trawled by fisherman from the former Soviet Union along the Chilean coast, a species, strongly resembling the buccinid genus *Aeneator*, has turned up several years ago. Hendrikas Danila (Lithuania) was the first to bring this shell to our attention. Research in the literature revealed that this could be, if belonging to the family Buccinidae, an undescribed species, most probably belonging to the genus *Aeneator*. A specimen was also sent to Martin Avery Snyder (U.S.A.) to compare with members of the Fascioliidae. No similar species were detected and no genus was found to accommodate this species.

It seemed us not advisable to describe this species based on empty shells only, without the radula or operculum to ascertain the generic placement. Recently Igor Bondarev (Ukraine, Crimea) procured additional material from Nazca Ridge (off Chile), including some shells with dried animal inside. The radular studies finally proved that this species belongs to the genus *Fusinus* (Fascioliidae).

Abbreviations.

lv: live collected.

dd: empty shell most probably dead collected.

KMMA: Klaipeda Maritime Museum and Aquarium, Klaipeda (Lithuania).

MNHN: Muséum national d'Histoire naturelle, Paris (France).

SYSTEMATICS

Family FASCIOLIIDAE Gray, 1853
Genus *Fusinus* Rafinesque, 1815

Fusinus kazdailisi sp. nov.
Figs 1-5

Type material.

Holotype - 40 x 17 mm - off Chile, Ecliptic Bank, Nazca Ridge, in deep water - with prepared radula, operculum (9 x 5 mm) and animal preserved in alcohol - KMMA coll. nr. LJM925.

Paratype 1 - 56 x 23 mm, dd - Ecliptic Bank, Nazca Ridge, 110-150 m - coll. H. Danila, Lithuania.

Paratype 2 - 57 x 23 mm, dd - same data - coll. K. Fraussen nr. 1480.

Paratype 3 - 48 x 20 mm, dd - same data - coll. R. Hadorn.

Paratype 4 - 43 x 18 mm, lv - same data - MNHN, Paris.

Paratype 5 - 45 x 19 mm, lv - Mesyatsev Bank, Nazca Ridge, 260-280 m - coll. K. Fraussen nr. 2934.

Paratype 6 - 52 x 22 mm, lv - off Valparaiso, Chile, 1200 m. - coll. A. Nora, Portugal, nr. 23889.

Paratype 7 - 51 x 20 mm, lv - same data - coll. K. Fraussen nr. 2736

Paratype 8 - 47 x 19 mm, lv - "Ross Sea" (?), 700 m - coll. C. & J. Hemmen, Germany.

Paratype 9 - 57 x 22 mm, lv - same data - coll. Haus der Natur, Cismar, Germany.

Paratype 10 - 48 x 20 mm, lv - same data - coll. Haus der Natur, Cismar, Germany.

Type locality.

Ecliptic Bank, Nazca Ridge, off Chile, living at 110-1200 m.

Range and habitat.

The new species is known from the type locality and from off Valparaiso (Chile), living at 110 - 1200 m, and is most probably restricted to the Chilean coast. The new species lives on mud and muddy sand.

Paratypes 8 - 10 are labeled "Ross Sea, 700 m". After careful study we consider this locality as most probably incorrect. Until the occurrence of this new species in the Ross Sea can be confirmed, we consider these three specimens to come from off the Chilean coast.

Description.

Shell medium in size (40-57 mm), solid, shape fusiform, semi-slender. Whorls about 6 in number, showing a weak subsutural concavity. Suture adpressed to preceding whorl.

Shell dirty greyish to brown or pale reddish-brown. Darker specimens occasionally with cream coloured narrow axial bands which follow growth lines.

Protoconch decollate, closed by a septum. Protoconch and about 1 teleoconch whorl missing in all known specimens. Surface eroded on 2 or 3 remaining uppermost teleoconch whorls, but sculpture still visible on some remaining parts.

8-14 rather strong and narrow axial ribs, traversing from suture to suture, on upper whorls. Interspaces rather narrow. Axial ribs become weaker on following whorls and finally disappear. All whorls densely covered with fine, sometimes slightly curved, growth lines, often not visible on their own but recognizable by low papillae formed on spiral cords, giving the surface of latter whorls a pearly appearance.

7-9 strong and rounded primary spiral cords on first remaining teleoconch whorl, separated by deep and narrow interspaces. On second whorl, interspaces becoming broader, tending to be similar in size as

spiral cords. In specimens with a low number of primary spiral cords, this number usually increases up to 9 on third whorl, and up to 10 in other specimens. Primary spiral cords increases to 12-14 on penultimate whorl.

On third or fourth whorl 1 fine intercalated secondary spiral thread appears between each pair of primary cords. Furthermore, 1-2 additional intercalated spiral threads appears between secondary and primary cords, on lower part of penultimate whorl. A total number of 64-79 spirals (primary, secondary and tertiary together) of different strength, visible on body whorl and siphonal canal. Some secondary spiral cords as strong and rounded as primary ones.

Aperture narrowly ovate to lens-shaped. Parietal callus thin, smooth and glossy, adpressed to body whorl. No columellar folds. Outer lip thin. Siphonal canal broad, shorter than aperture, oblique to left side and straight.

Operculum corneus, thin and pale reddish-brown, shape typically fusinid with terminal nucleus.

Periostracum thin, olive-green in colour.

Radula fusinid. Central tooth tricuspid, median cusp strongest, occasionally with 1-2 small additional denticles situated near middle of cusp. Lateral teeth strongly curved, with 6-7 long and pointed cusps mostly of equal size. A small denticle occasionally appears at both ends of lateral tooth.

Comparison.

Fusinus valdiviae Hadorn & Fraussen, 1999 is similar to *F. kazdailisi* sp.nov. in sculpture, but can be easily separated by the slender shape, the broader aperture and longer siphonal canal.

The buccinid species *Aeneator castillai* McLean & Andrade, 1982 is similar in sculpture and colour. The appearance of the spiral sculpture on the body whorl is nearly identical in both species, but the surface of *Aeneator* has no pearly appearance. *A. castillai* can be distinguished by the larger size, the broader shape and the more rounded (ventricose) body whorl resulting in a large and more ovate aperture, by the much more curved outer lip (especially on the upper part), the broader interspaces between the axial ribs on the first whorls, and by the presence of axial ribs down to (at least) the penultimate whorl. The radula of the three known Chilean *Aeneator* species are figured by McLean & Andrade (1982: 13, fig. 36; 15, fig. 44 and 17, fig. 50). All of them are typically buccinid: the central tooth tricuspid, the lateral teeth with 3 or 4 pointed cusps of which the outer one is the largest.

Fusinus fragilissimus Dall, 1908, now type species of the buccinid genus *Bayerius* Olsson, 1971 is known from deep water off Ecuador and the Gulf of Panama. This shell is much smaller and the whorls are more convex as in *F. kazdailisi*. The protoconch of this species is unknown. Olsson (1971: 86, fig.101)

figured the radula which is typically buccinid. The teeth has 3 pointed cusps of which the outer one is slightly larger.

Remarks.

At present we place this new species in the genus *Fusinus*, considering it belongs to the same group as *F. valdiviae* Hadorn & Fraussen, 1999. Further study is needed and may involve a revision of these species.

Etymology.

This species is dedicated to Mr. Aloyzas Kazdailis. He founded in 1979 the Klaipeda Maritime Museum and Aquarium (Klaipeda, Lithuania) and is until now the first director. By naming this taxon after him we will honour his contributions to marine science.

ACKNOWLEDGMENTS.

We thank Hendrikas Danila (Lithuania) and Igor Bondarev (Ukraine, Crimea) for procuring specimens and indispensable information, Martin Avery Snyder (USA) for his knowledge of Fascioliidae and for comparing the new species with fascioliid species, Jens & Christa Hemmen (Germany), Vollrath Wiese (Haus der Natur, Germany) and Antonio Nora (Portugal) for the loan of specimens, Guido T. Poppe (Belgium) for undiminished support and photography, David Monsecour (Belgium) for correcting the English text, and Roland Houart (Belgium) for correcting the French text.

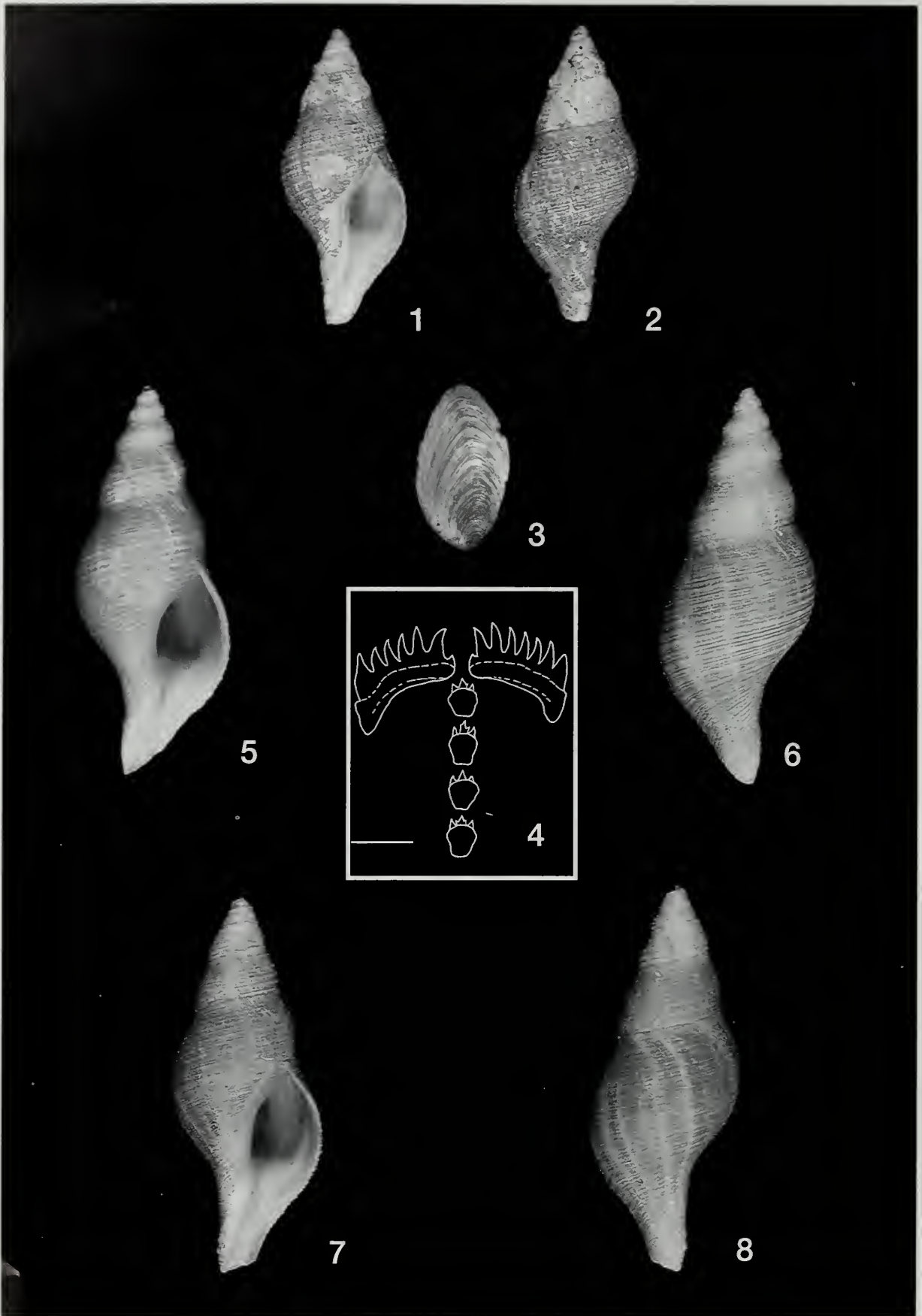
central tooth is rectangular and tricuspid. The lateral

Photography.

Digital images by Guido T. Poppe (Belgium).

REFERENCES

- Dall, W. H., 1908. Reports on the dredging operations off the west coast of Central America to the Galapagos, to the west coast of Mexico, and in the Gulf of California, 14. The Mollusca and Brachiopoda. *Bull. Mus. Comp. Zool.*, 43 (6) : 205-487.
- Hadorn, R. & Fraussen, K., 1999. Rediscovery of *Fusinus subangulatus* (von Martens, 1903) and description of a new Somalian *Fusinus* (Gastropoda: Fascioliidae), including some notes on the taxonomical position of the genus *Siphonofusus* Kuroda & Habe, 1952. *Vita Marina* 46 (3-4) : 111-122.
- McLean, J. H. & Andrade, H. V., 1982. Large archibenthal gastropods of central Chile: collections from an expedition of the R/V Anton Bruun and the Chilean shrimp fishery. *Contr. Sci. Nat. Hist. Mus. Los Angeles Co.* 342 : 1-20.
- Olsson, A. A., 1971. Mollusks from the Gulf of Panama collected by R/V John Elliott Pillsbury, 1967. Biological Results of the University of Miami Deep-Sea Expeditions. 77. In: *Bayer, F. M. & Voss, G. L. Studies in Tropical American Mollusks. Bull. Mar. Sci.* 21: 35-92.



1-8. *Fusinus kazdailisi* sp. nov. Nazca Ridge, Ecliptic Bank, Chile. 1-2. Holotype MNHN, 40 mm.
 3. Operculum. 4. Radula (scale bar : 100 µm). 5-6. Paratype 1, coll. H. Danila, 56 mm. 7-8. Paratype 2, coll. K. Fraussen, 57 mm.