

***Ferussacia antonini* n. sp. (Gastropoda Stylommatophora Ferussaciidae), another new species enriching Sicilian biodiversity**

Roberto Viviano¹, Arturo Viviano¹, Willy De Mattia², Agatino Reitano^{3,4} & Ignazio Sparacio⁵

¹Via Michele Cipolla 106, 90123 Palermo, Italy; e-mail: roberto.viviano3@outlook.com, vivix945@gmail.com

²Contrada Sbriliulia snc, 96017 Noto, Siracusa, Italy; e-mail: wdemattia@gmail.com

³Museo Civico di Storia Naturale, via degli Studi 9, 97013 Comiso (Ragusa), Italy

⁴External collaborator of Museo della Fauna del Dipartimento di Scienze Veterinarie dell'Università di Messina, Italy; e-mail: tinohawk@yahoo.it

⁵Via Principe di Paternò 3, 90144 Palermo, Italy; e-mail: edizionidanaus@gmail.com

*Corresponding author

ABSTRACT

In the present paper, the authors describe a new species of the genus *Ferussacia* Risso, 1826 (Gastropoda Stylommatophora Ferussaciidae) from western Sicily (Italy): *F. antonini* n. sp. It is very different, at first sight, from *F. folliculum* (Schröter, 1784), the only other species very widespread in Sicily, mainly due to the shape of the shell formed by 5 whorls with the last whorl comprising 2/3 of the entire shell height. Further information on the biology of this new species and the taxonomy and anatomy of *Ferussacia* species living in Sicily are provided.

KEY WORDS

New species; taxonomy; biology; biodiversity; Mount Pecoraro; surroundings of Palermo.

Received 19.01.2025; accepted 18.03.2025; published online 30.03.2025

INTRODUCTION

Two species of the genus *Ferussacia* Risso, 1826, are currently recognized in Sicily: *F. folliculum* (Schröter, 1784) and *F. carnea* (Risso, 1826) (Bodon et al., 2021). *Ferussacia folliculum* is widespread in Central Mediterranean, including Malta, Italy, and Greece (Alzona, 1971; Holyoak, 1983; Giusti et al., 1995; Manganelli et al., 1995; Kerney & Cameron, 1999; Falkner et al., 2002; Beckmann, 2007; Welter-Schultes, 2012, 2013; Cilia et al., 2012). In Italy, it has been reported from Liguria, Peninsular regions, Sardinia, Sicily, and probably introduced in Emilia Romagna and Canton Ticino in Switzerland, likely due to human introduction (Bodon et al., 2021). In Sicily, *F. folliculum* is widespread throughout the island,

including many adjacent islands, and is commonly found at low and medium altitudes (Benoit, 1857–1862; 1875; 1882; Giusti, 1973; Cianfanelli et al., 2002; Fiorentino et al., 2004; Sparacio et al., 2021).

Ferussacia carnea occurs in North Africa and Italy, where it is considered an introduced species. It has been reported from Pianosa Island (Pollonera, 1905: as *Ferussacia paulucciana*; Manganelli et al., 2014), Scoglio della Scola in the Tuscan Archipelago (Giusti, 1970), and several Aeolian Islands (Alicudi, Salina, Filicudi) (Giusti, 1973) as well as Pantelleria (Sparacio, 1997). Additionally, it is reported for the first time from the Pelagic Islands, specifically on the island of Lampione.

The two species are distinguishable by the presence of a parietal lamella in *F. carnea*, which is absent in *F. folliculum*. This morphological

characteristic was once used as a distinguishing feature at the subgeneric level, separating *Ferussacia* from *Pegea*, but this distinction is not widely accepted today (Molluscabase, 2024). Both species are thermophilic and sublapidicolous, commonly found in open, sunny environments at low and medium altitudes, including meadows with calcareous outcrops, garrigues, Mediterranean scrub, volcanic environments and on the metamorphic substrates. They also inhabit ruderal areas, urban gardens and reforested zones.

Recent malacological surveys in western Sicily have led to the discovery of a new species of *Ferussacia*, which is described below.

MATERIAL AND METHODS

Study area

Monte Pecoraro, located near Palermo (Sicily, Italy), is a massif composed of Meso-Cenozoic limestone rocks from the Panormide Unit, a carbonate platform that forms the northernmost part of the Palermo Mountains. This area is part of the Sicilian “Fold and Thrust Belt” marking the boundary between the African and European plates, and connects the African Maghrebids to the subduction complex of the Calabrian Arc and southern Apennines (Catalano et al., 2013).

The climate of Monte Pecoraro is classified as multi-seasonal Mediterranean oceanic (Rivas-Martínez et al., 2008), with a lower meso-mediterranean thermotype (Bazan et al., 2015). The climate is moderated by frequent condensation of moisture from the humid sea breeze of the Tyrrhenian Sea, often forming dense fog (Cusimano et al., 2017).

The northern slopes extend 1.4 km, featuring two vertical limestone cliffs 700 m high and a steep detritus slope descending from 400 m to 100 m (Fig. 1). The vegetation along the slopes is dominated by *Quercus ilex* L., particularly in the submontane belt with scree slopes and meadows (Maurici & Manfrè Scuderi, 2001; Gianguzzi & Papini, 2015). The study area is characterized by sparse Mediterranean scrub, with species such as *Euphorbia dendroides* L., *Rhus coriaria* L., *Fraxinus ornus* L., *Phyllirea latifolia* L., *Rhamnus alaternus* L., *Crataegus* sp., and *Smilax aspera* L.

The malacological interest of the area is further emphasized by the presence of other endemic species (Beckmann, 2004; Viviano et al., 2019).

Samples

Empty shells and live specimens were collected under stones and debris. Nine live specimens were kept for biological and ecological observations. A small terrarium (15 cm x 9 cm x 5 cm) with a 5 mm thick soil layer, small limestone fragments, and organic debris was used for keeping the specimens. Measurements were made using a digital caliper and a millimeter ruler, while photographs were taken with a Nikon D3100 camera. Specimens for genitalia examination were preserved in 80% ethanol, and the reproductive apparatus was extracted using fine-tipped tweezers. Other tools included a scalpel and entomological pins. Collection details include site toponyms, altitudes, municipalities, GPS coordinates, collectors, dates, number of shells examined, and the housing institutions.

Specimens are housed in several collections, including: Natural History Museum, University of Florence, Zoological Section “La Specola,” Florence, Italy (MZUF); Museo Regionale di Storia Naturale di Terrasini, Palermo, Italy (MRSNT); Museum of Zoology “Pietro Doderlein,” University of Palermo, Italy (MZDP); Private collections: A. Reitano (ARC, Tremestieri Etneo, Italy), I. Sparacio (ISC, Palermo, Italy), R. Viviano (RVC, Palermo, Italy), W. De Mattia (WDC, Noto, Italy).

ABBREVIATIONS AND ACRONYMS. A: atrium; AH: aperture height; AW: aperture width; BC: bursa copulatrix; DBC: duct of bursa copulatrix; DP: distal penis; F: flagellum; FO: free oviduct; fungiform papilla: FP; H: height; LPL: left pallial lobe; PA: penial appendix; PBC: pleats bursa copulatrix; PDBC: pleats duct of bursa copulatrix; PP: proximal penis; PR: penial retractor; RM: retractor muscles; RPL: right pallial lobe; PnL: pneumostomal lobe; OS: ovispermiduct; V: vagina; VD: vas deferens; ex/x: dry shell; T: Temperature; W: width.

RESULTS

Systematics

Subordo ACHATININA Schileyko, 1979



Figure 1. Type locality of *Ferussacia antonini* n. sp.: Cinisi (Palermo), NNO slopes of Mount Pecoraro (Sicily, Italy).

Superfamily ACHATINOIDEA Swinson, 1840

Family FERUSSACIIDAE Bourguignat, 1883

Genus *Ferussacia* Risso, 1826

TYPE SPECIES. *Ferussacia gronoviana* Risso, 1826

***Ferussacia antonini* n. sp.**

<https://www.zoobank.org/E7DB5ADD-C290-49BE-ABCF-A54C56F9B022>

TYPE MATERIAL. Holotype. ITALY • 1 ex; Cinisi (Palermo), NNO slopes of Mount Pecoraro; 275–300 m; 38°10'14"N-13°07'19"E; 10 Feb. 2019; legit R. and A. Viviano (MZUF).

Paratypes. ITALY • 1 ex; same data as holotype; RVC-1311). • 4 exx, 3 specimens; same data as holotype; 10 Feb. 2019-3 Nov.2020; RVC-4340. • 21 exx, 2 specimens; same data as holotype; 260-305 m; 38°10'16'5"N-13°07'24"E; 24 Oct. 2020; scree with *R. alaternus*; RVC-3910. • 1 ex; same data as holotype; 24 Oct. 2020; legit R. Viviano (MZDP). • 4 exx, 1 specimen; same data as holotype; 38°10'13.45"N-13°07'24"E; 350 m; 18 Mar. 2024, RVC-4355. • 1 ex; same data as holotype; legit R. Viviano; MRSNT. • 1 ex; same data as holo-

type; legit R. Viviano; MZDP. • 5 exx; same data as holotype; 18 March 2024, legit A. Reitano; ARC. • 2 specimens; same data as holotype; 18 March 2024, legit A. Reitano; WDC. • 6 exx; same data as holotype; legit I. Sparacio; 22 Sept. 2024; ISC. • 1 ex; NNE slopes of Mount Pecoraro; 38°10'20.5"N-13°07'34.7"E; 227 m; 24 Oct. 2020; RVC-4162.

DESCRIPTION OF THE HOLOTYPE. Shell dextral (Figs. 2–4), 10.1 mm in height, maximum diameter 4.6 mm, diaphanous, fusiform, with 5 whorls slightly rounded in width, with height of last whorl 2/3 of the shell. Protoconch smooth, with a furrow separating it from the teleoconch. Teleoconch with simple, smooth suture, marked by a whitish sutural band, not depressed. Smooth whorls with very fine sub-vertical growth lines. Aperture large, 1/2 of the total height of the shell, AH = 6.1 mm, AW = 3.6 mm, drop-shaped, acute palatal angle and obtuse columellar angle. Peristome simple, blunt, where the central margin tends to protrude forward forming a large “c”, while the palatal and columellar portions are more internal with respect to it. Truncated columellar callus, with rounded inner portion,

proceeds inward with rapid twisting, white. Internal columella without callosity. Umbilicus absent. Parietal wall not callused. Light yellow colour, faded, the apex is whitish, including the first whorl, where it tends to fade into yellow as it grows.

Body. The animal is pale yellow, slender, elongated max 15 mm, with a whitish-yellow foot with random white punctuation; distal foot 2/3 of the entire length, and proximal foot 1/3 long excluding cephalic tentacles, flanks with light oblique furrows; yellowish sole separated from the side by a well-marked basal longitudinal furrow; caudal horn 1 mm in height, thickened at the base. Slender ocular tentacles, up to 5 mm long, optic nerve well visible, round apex, very short tactile tentacles, more or less 1 mm, slightly rounded at the apex. Outer mantle whitish; protrudes from the peristome by about 0.5–0.7 mm, where the maximum extension is reached on the frontal margin. On the right side of the stoma protrude two sub-rounded lobes: a pallial one (RPL), which protrudes from the mantle for about 1.5–1.7 mm and adheres to the dorsal wall of the shell, and a pneumostomal one (RBL) which extends for about 2–2.5 mm along the side of the shell between the end of the penultimate and the beginning of the last whorl. On the left side of the stoma, a short lobe (LPL) extends 1–1.2 mm; they too are pigmented with small white dots.

Genitalia (Fig. 3, 4). A large OS leads to a moderately long FO. The duct of the bursa is shorter than the bursa itself. The internal walls of the duct of the bursa show up to 10 fringed axial pleats. The bursa is thick, muscular with up to 4 big smooth plates. The tip of the bursa presents a tuft of retractor muscles. The V is as long as the FO with slightly fringed to smooth inner pleats running as far as the A. Proximal penis is wide, somehow irregularly swollen with a retractor muscle that finds its origin along a proximal pedunculus. Distal penis is cylindrical, much smaller than the proximal penis in diameter. Inner proximal penis comprises four main structures (Fig. 4) for muscular and glandular purposes. Inner distal penis presents up to four smooth pleats, fading out toward the A. See also for comparison *F. folliculum* (Figs. 5–7) and *F. carnea* (Figs. 8–10).

VARIABILITY. The paratypes have no substantial morphological differences with the holotype. Measurements (15 exx): H = 9–11 (arithmetic mean = 10.4, standard deviation = 0.5) mm, W = 3.3–4.7

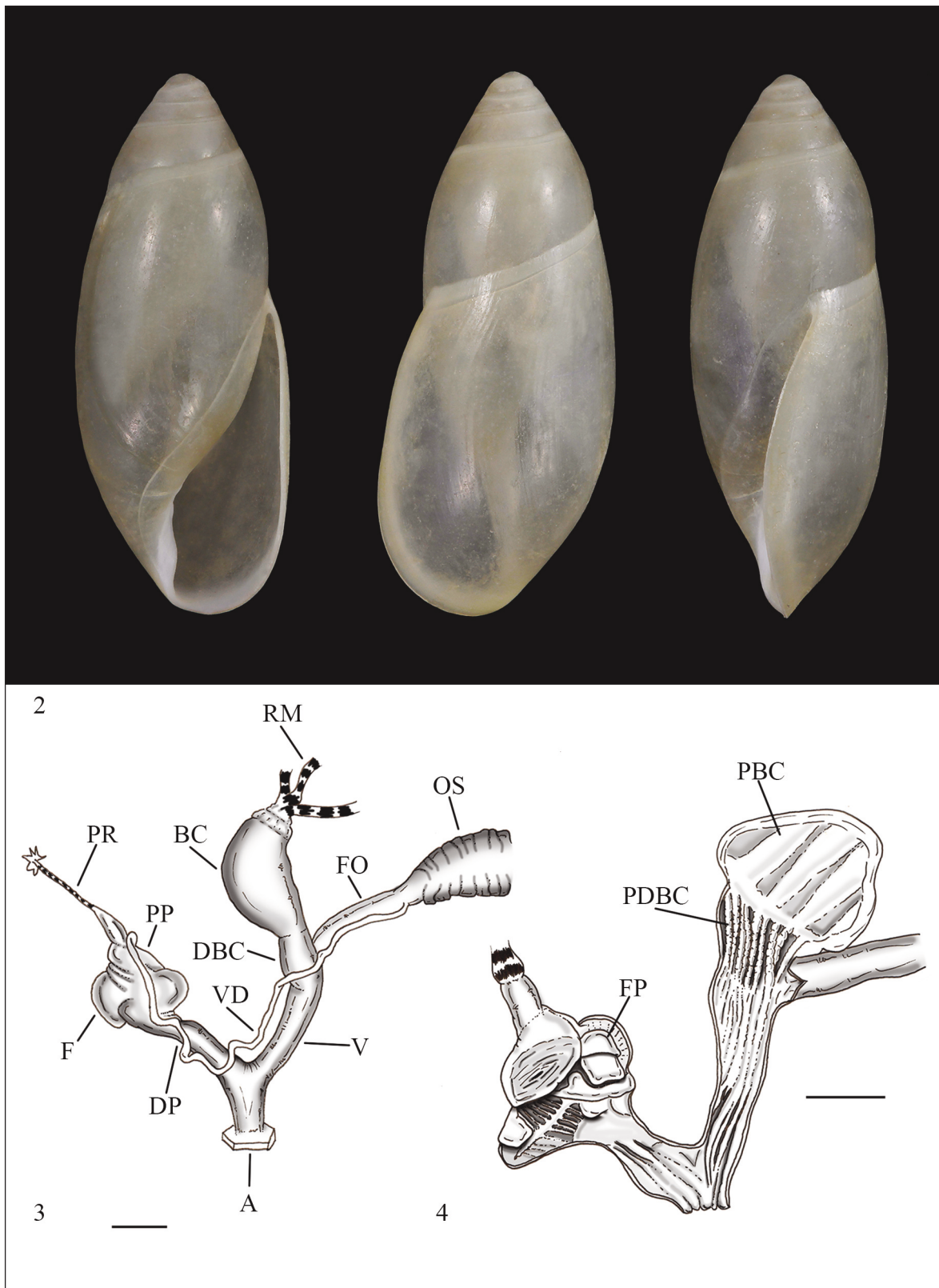
(arithmetic mean = 4.1, standard deviation = 0.34) mm, AH = 5.9–6.8 (arithmetic mean = 6.4, standard deviation = 0.26) mm, AW = 2.5–3.6 (arithmetic mean = 2.9, standard deviation = 0.16) mm, whitish sutural band up to 0.6–0.8 mm wide, peristome with cleared margin. Some paratypes are partly damaged, apical fragments or juvenile specimens. In live condition, some specimens with a lighter body colour and a less intense yellow shell. H: 10.47 mm; W: 4.17 mm; AH: 6.53; AW: 3.00

ETYMOLOGY. The new species is dedicated to Viviano's father Antonino (*Antoninus-i*, used as a noun in apposition) for his constant support during the research carried out in the Sicilian territory.

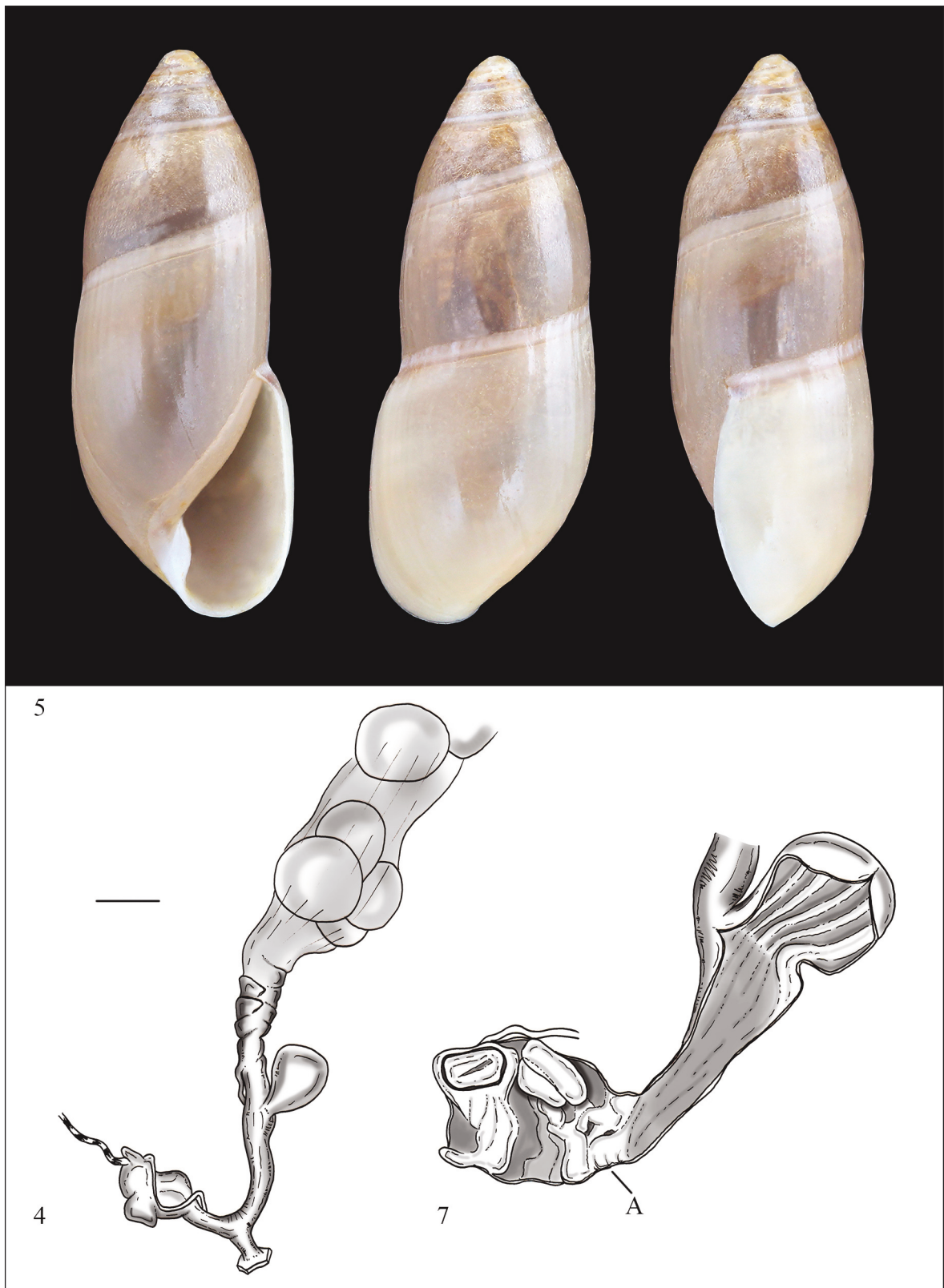
DISTRIBUTION AND BIOLOGY. *Ferussacia antonini* n. sp. seem to be restricted to the scree of the northern slope of Mount Pecoraro (Cinisi, Palermo, Italy). It is a sciaphilous-epigeous species, strictly sublapidicolous and detriticolous; occasionally observed at the edge of scree slopes in the shade of *Quercus ilex*. Living specimens of *F. antonini* n. sp. were observed alone or in aggregation.

In its habitat, a specimen of *F. antonini* n. sp. with a single egg inside its own columellar corner of the last whorl of the shell was found (October 2020). Similar cases have been observed in other oviparous Ferussaciidae, such as *Cecilioides* Férussac, 1814 and *Hohenwartiana* Bourguignat, 1864 (*pers. obs.*).

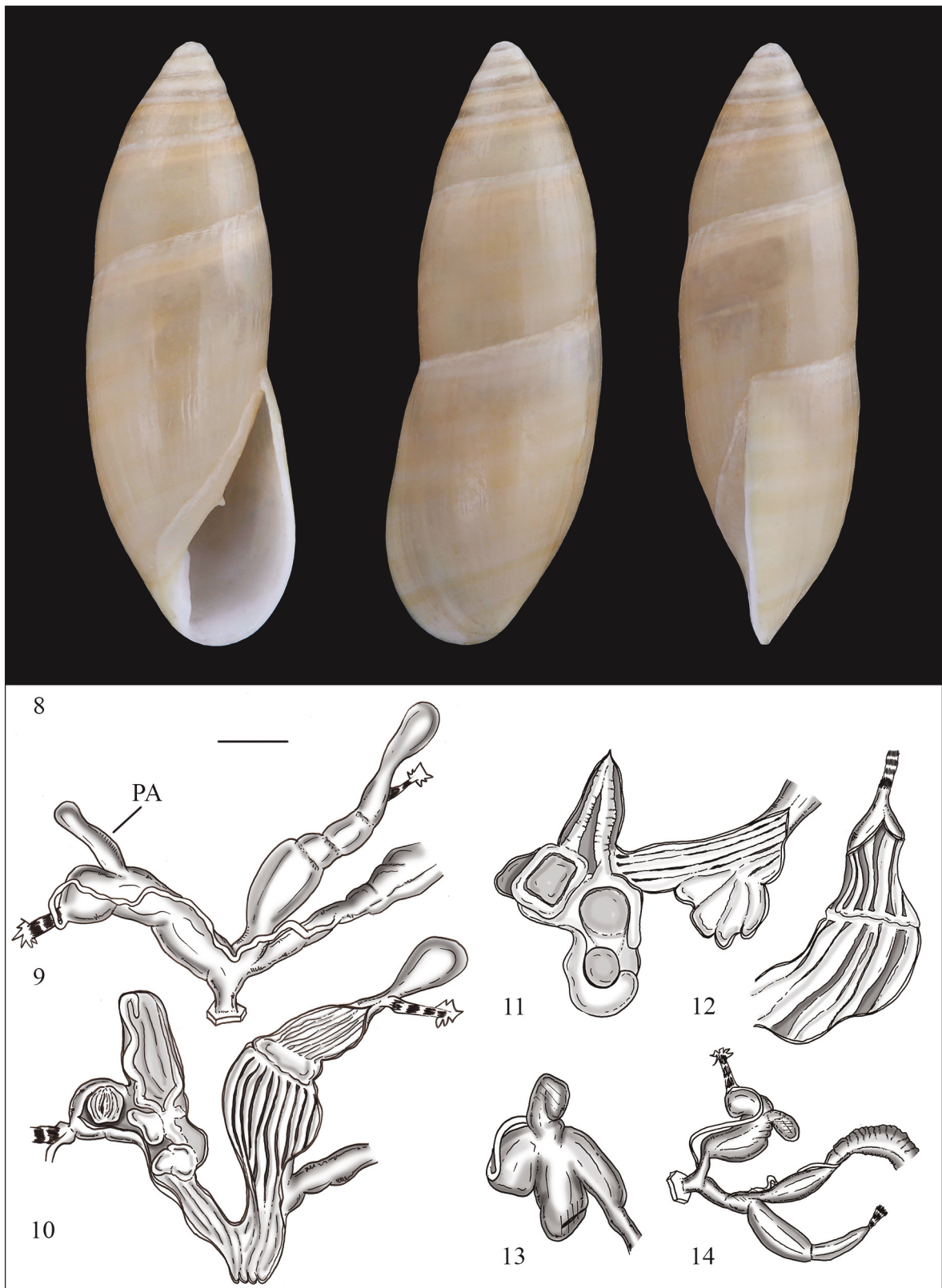
The biological cycle was observed in the laboratory from February 2019 to May 2021 (Figs. 15–22, 27). *Ferussacia antonini* n. sp., is an insufficient hermaphroditic species: one adult specimen alone did not reproduce. Three copulations were observed: May 2020, late October 2020 and early November 2020. The first copulation was observed in the morning with a temperature of 23 °C after an overnight rain. The position was of the simultaneous reciprocal 'face-to-face' type, considered in this case erroneous because partner 1 held the sole upside down with respect to partner 2; in fact, one of the two specimens had found adherence on the side of the stone that usually touches the ground, and the second adhered to the ground. This type of adhesion may not be conducive to the passage of spermatozoa. The genital atrium opens on the right side of the proximal part of the foot below the stoma.



Figures 2–4. *Ferussacia antonini* n. sp., holotype from Cinisi (Palermo), NNO slopes of Mount Pecoraro (Sicily, Italy).
Fig. 2: shell. Fig. 3: genital organs (scale bar 1 mm). Fig. 4: internal distal part of genital organs (scale bar 1 mm).



Figures 5–7. *Ferussacia folliculum* from Trapani, Macari (Sicily, Italy). Fig. 5: shell. Fig. 6: genital organs (scale bar 1 mm). Fig. 7: internal distal part of genital organs.



Figures 8–10. *Ferussacia carnea* from Zaghouan (Tunisia). Fig. 8: shell. Fig. 9: genital organs (scale bar 1 mm). Fig. 10: internal distal part of genital organs. Figures 11–14. *F. carnea* from Salina island (Sicily, Italy), genital organs.

The second and third mating occurred in the evening hours with a T of 17–19 °C. The position of the two partners was again ‘face-to-face’ but this time suitable, as both specimens rested their soles on the same surface, with axially opposite shell apices and the toe of the foot straight or curved towards the head of the partner. Before finishing mating, the two specimens of *F. antoninii* n. sp. moved around each others (as in *F. folliculum*).

The biological rest period runs from the end of May until September, conditioned by the absence of rainfall and rising temperatures. During this period, specimens of *F. antoninii* n. sp. closed the aperture with one or more translucent whitish epiphragmae made of mucous-calcareous composition, usually covered or including small soil granules. In the laboratory, in July at T 24–27 °C, a specimen closed its aperture with 21 layers of epiphragma, formed as the mantle receded.

Following the first late summer-autumn rains, *F. antonini* n. sp. restarted biological activity.

In the laboratory (October 2020), the first 4 eggs laid down in different locations were observed; the adult releases a single egg at a time. They are oval or subrounded in shape with a calcified shell, white, 1.4 mm high and 1 mm wide maximum, covered with a hydrophilic mucous matrix with the trend to become dirty and impregnated with clay particles as the days go by. Subsequently, from early to mid-November a total of 33 eggs were laid down in the substrate. Towards the end of November, the first hatching occurred after 13–15 days of incubation. The shell at birth measured 1.6 mm in length, suboval in shape, pale yellow in colour. The heart is located close to the stoma; body translucent, pale whitish, 3 mm long including tentacles, distal foot with acute appendage at the tip, tactile tentacles very short, about 1/5 of those ocular (= 0.4–0.5 mm). In the first offspring, a malformation was observed in the presence of an ocular tentacle with two eyes at the apex. Within 10 days, a specimen born at the end of November grew approximately twice as large, reaching 2.7 mm in length. In juvenile specimens the length of the stoma is equal to 4/5 of the total length (shell length 5 mm, aperture length 4 mm).

Ferussacia folliculum is a mesophilous and sublittoral species, detritivorous, typical of open, sunny environments with rocky substrate and low Mediterranean scrub or garrigue vegetation; also in rural and urban locations.

It is active from autumn to spring. In late spring it begins its aestivation period by closing its stoma with one or more epiphragma. In the laboratory (Figs. 23–26, 28), its fossorial activity was also observed where a few dozen specimens formed small sub-horizontal tunnels modelled from time to time due to their continuous passage, up to 4 cm deep (max. h of the terrarium), used during the day as a refuge and in slightly drier periods.

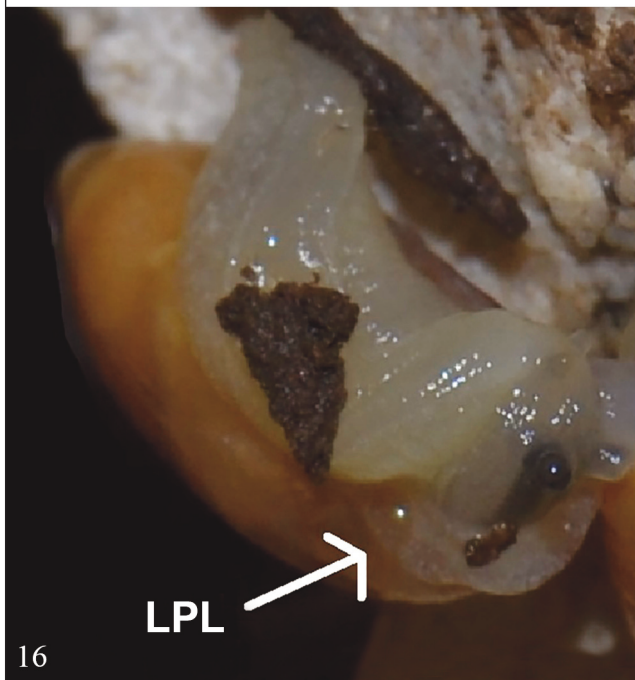
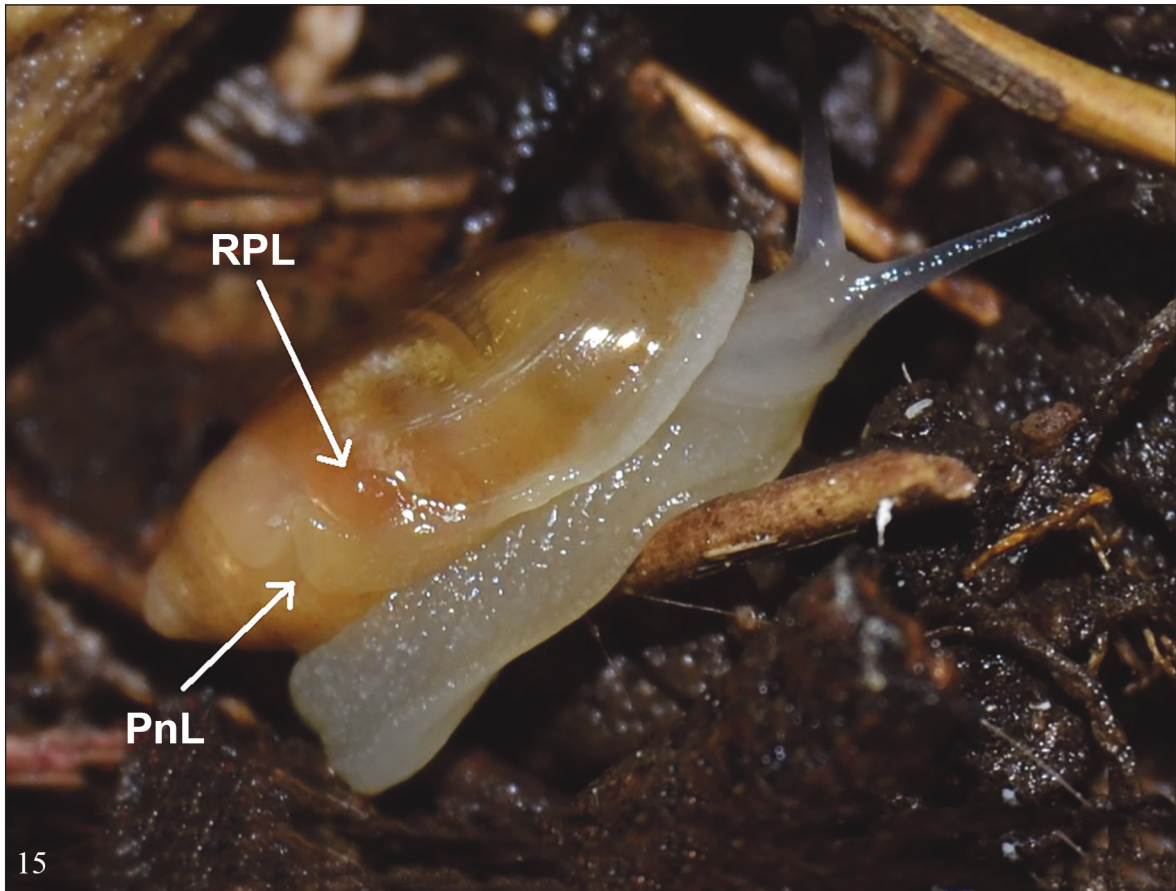
The reproduction and ovoviviparity of *F. folliculum* have been studied by several authors (Moquin-Tandon, 1855; Benoit, 1875; Schileyko, 1999; Zając & Kramarz, 2017).

Some mating has been observed at night or during daylight hours on rainy days. Courtship involves clockwise or anticlockwise rotations with fast cephalic contacts. At the moment of copulation the two partners remain stationary with the toe of partner 1 curving towards the head of partner 2, and vice versa partner 2 towards partner 1. After copulation they remain still in this position for about an hour, and before finishing, they again perform a slow rotation or withdraw the organ.

In the absence of a partner, a single specimen is capable of self-fertilisation and can release more than 8 youngsters, one at a time over the course of a week. If cross-fertilisation occurs, the offspring will be released through the genital atrium a few days later: usually 4–5 juveniles over the course of an hour, one after the other. The juveniles measure 0.9–1 mm, with a hyaline shell, colourless, tending to pale yellow; the body and internal organs are whitish-yellow, becoming slightly more intensely pigmented in a few days.

Also in the laboratory, in association with other molluscs, the predation of a juvenile *Rumina decollata* on a resting *F. folliculum* was observed. The first species slowly scraped the penultimate whorl of the prey, thus piercing the periostracum and ostracum, from which it began to eat it from the outside and then from the inside, introducing the head a little at a time.

STATUS AND CONSERVATION. *Ferussacia antonini* n. sp. lives in a rather small geographical area. The well naturally preserved environment with no imminent threat from humans (apart from fires) and the lack of further data on the actual distribution allow us to consider it as NT (Near Threatened) category (see Neubert et al., 2019).



Figures 15–17. *Ferussacia antonini* n. sp. from Cinisi (Palermo), NNO slopes of Mount Pecoraro (Sicily, Italy). Figs. 15, 16: evidence of the lobes protruding outside the peristome of the shell; Fig. 17: caudal horn of the distal foot.



Figures 18–22. Biology and life-cycle of *Ferussacia antonini* n. sp. observed in laboratory. Fig. 18: face-to-face mating. Fig. 19: side-by-side mating. Fig. 20: egg. Figs. 21, 22: youngsters specimens recently born; normal body (21) and teratological body with a single eye tentacle (22).



Figures 23–26. Biology and life-cycle of *Ferussacia folliculum* n. sp. observed in laboratory. Figs. 23, 24: face-to-face mating. Fig. 25: youngsters recently born. Fig. 26: colony inside nests dug into the ground. Figure 27. *Ferussacia antonini* n. sp. Figure 28. *Ferussacia folliculum*.

TAXON	COUNTRY	DIAGNOSIS
<i>Ferussacia gronoviana</i> Risso, 1826	FRANCIA: “environs de Nice et des Alpes Maritimes”.	“...à sept tours de spire”
<i>Ferussacia regularis</i> Bourguignat, 1860: 20–21, figs. 7–9	MALTA, ITALY: “...semble spéciale à l’île de Malte, où elle se rencontre dans les environs de la Vallette. Habite également aus environs de Portici, près de Naples”.	“Sept tours un peu convexes... le dernier tour n’atteignat jamais la moitié de la longueur totale... Hauteur 10 mill.”
<i>Ferussacia abromia</i> Bourguignat, 1864: 45–46, pl. 3, figg. 29–31	ALGERIA: “Dans les alluvions de l’Harrach près d’Alger (Letourneux). Elle habite également en Sicile”.	“Sept tours faiblement convexes... Hauter 11 millimètres...”.
<i>Ferussacia Vescoi</i> Bourguignat, 1856: 67	MALTA: “Cette espèce habite l’île de Malte”.	“Six tours de spire peu convexes... H. 9 millim.”
<i>Ferussacia Vescoi</i> var. <i>lanceolata</i> Bourguignat, 1864: 43, tav. 3, fig. 25:	ALGERIA: “...alentours d’Alger... contrées occidentales du bassin méditerranéen”.	“...semblable au type, mais moins venture, plus lancéolée, plus allongée... Haut. 10 millim.”
<i>Ferussacia folliculus</i> Gron. Var. <i>elongata</i> Monterosato, 1892: 27	ITALY, SICILY: “Favignana - Comune”.	“...di un bel biondo ardente e a forma allungata”.
<i>Ferussacia folliculus</i> Gmelin Var. <i>Denarensis</i> De Gregorio, 1896: 25	ITALY, SICILY: “Loc. Scordia Denaro presso Palermo al piccolo ponte dei Pagliarelli”.	“...dimensione un po’ maggiore, apertura meno prolungata in avanti... labbro columellare incassato”.

Table 1. Taxa referred to *Ferussacia folliculum* as synonyms.

REMARKS. *Ferussacia antonini* n. sp. differs from *F. folliculum* (Fig. 5) mainly due to the shape of the shell formed by 5 whorls with the last whorl comprising 2/3 of the entire shell height (*F. folliculum* shows 4.3/4.6 whorls with the last whorl 1/3 of the total shell length); large aperture, 1/2 of the total shell length (1/3 in *F. folliculum*); the whorls are smooth with very thin sub-vertical growth lines. The distal genitalia of *F. folliculum* are clearly distinguishable from *Ferussacia antonini* n. sp. mainly by the absence of the retractor muscles tuft from the apex of the bursa copulatrix, the much shorter FO and the absence of the retractor muscle’s pedunculus at the proximal end of the penis (Figs. 6, 7) (see also Giusti, 1973; Schileyko, 1999).

Several other taxa are related to *F. folliculum*, described and illustrated by Schröter (1784), as synonyms, and are summarised in Table 1 description details and the main morphological features.

Finally, *F. carnea* differs from *F. antonini* n. sp. from the overall morphology of the shell, including the presence of the characteristic parietal lamellae

(Fig. 8); the distal genitalia of *F. carnea* are clearly distinguishable from *Ferussacia antonini* n. sp. mainly by the presence of a penial appendix and the much longer complex of the bursa copulatrix (Figs. 9, 10) (Schileyko, 1999).

REFERENCES

- Alzona C., 1971. Malacofauna Italica. Catalogo e bibliografia dei molluschi viventi, terrestri e d’acqua dolce. Atti della Società Italiana di Scienze naturali e del Museo Civico di Storia Naturale di Milano, 111: 1–433.
- Bazan G., Marino P., Guarino R., Domina G. & Schicchi R., 2015. Bioclimatologia e serie di vegetazione in Sicilia: un approccio geostatistico. *Annales Botanici Fennici*, 52: 1–18.
<https://doi.org/10.5735/085.052.0202>
- Beckmann K.H., 2004. Zur Verbreitung der endemischen nordwestsizilianischen Clausiliidae der Untergattung *Charpenteria* (*Siciliaria*) mit Beschreibung von zwei neuen Unterarten (Gastropoda: Stylommatophora: Clausiliidae). *Archiv für Molluskenkunde* 133: 185–191.

- Beckmann K.H., 2007. Die Land- und Süßwassermollusken der Balearischen Inseln. Conchbooks, Hackenheim, 255 pp.
- Benoit L., 1857–1862. Illustrazione sistematica critica iconografica de' testacei estramarini della Sicilia Ulteriore e delle isole circostanti. Gaetano Nobile, Napoli, 248 pp., 8 pls. [Quaderno 1.o: pp. i–xvi, 1 52, pls. 1–2 (1857); Quaderno 2.o: pp. 53–116, pls. 3–4 (1857); Quaderno 3.o: pp. 117–180, pls. 5–6 (1859); Quaderno 4.o: pp. 181–248, pls. 7–8 (1862). The publication date of three additional plates, 9, 11 and 12, is unknown.].
- Benoit L., 1875. Catalogo delle conchiglie terrestri e fluviatili della Sicilia e delle Isole circostanti. Bullettino della Società Malacologica Italiana, 1: 129–163.
- Benoit L., 1882. Nuovo catalogo delle conchiglie terrestri e fluviatili della Sicilia o continuazione alla illustrazione sistematica critica iconografica de' testacei estramarini della Sicilia Ulteriore e delle isole circostanti. Tipografia D'Amico, Messina, 176 pp.
- Bodon M., Cianfanelli S., Nardi G., 2021. Mollusca (terrestrial and inland water species). In: Bologna M.A., Zapparoli M., Oliverio M., Minelli A., Bonato L., Cianferoni F., Stoch F. (eds.), Checklist of the Italian Fauna. Version 1.0. Last update: 2021-05-31.
- Bourguignat J.R., 1856. Aménités malacologiques. XL. Revue et Magasin de Zoologie pure et appliquée (2) 8: 66–80.
- Bourguignat J.R., 1860. Malacologie terrestre de l'île du Château d'If près de Marseille. J.B. Baillièrre, Paris. 36 pp., 2 pl.
- Bourguignat, J.-R., 1863-1865. Malacologie de l'Algérie ou histoire naturelle des animaux mollusques terrestres et fluviatiles recueillis jusqu'à ce jour dans nos possessions du nord de l'Afrique. Tome 1, fascicule 1: 1–80, pls 1–8 [wrapper dated May 1863]; fasc. 2: 81–192, pls 9–10, 13–18 [wrapper dated June 1863]; fasc. 3: 193–294, pls 11–12, 19–32 [wrapper dated November 1863]. Tome 2, fasc. 4: 1–144, pl. 1–5, 7 [wrapper dated January 1864]; fasc. 5: 145–232, pls 6, 8–11, 15–16, 18–26 [wrapper dated April 1864]; fasc. 6: I–XII [to be bound prior to fasc. 1], 9–32 [replacement pages for fasc. 1], 233–380, pls 12–14, 17, map 1–5 [page XI dated December 1864, but published late in 1865]. Paris (Challamel aîné).
- Catalano R., Valenti V., Accaino F., Sulli A., Tinivella U., Gasparo Morticelli M., Zanolla C. & Giustiniani M., 2013b. Sicily's fold/thrust belt and slab roll back: The SI.RI.PRO seismic crustal transect. Journal of Geological Society London, 170: 451–464.
- Chester C., Agosti D., Sautter G., Catapano T., Martens K., Gérard I. & Bénichou L., 2019. EJT editorial standard for the semantic enhancement of specimen data in taxonomy literature. European Journal of Taxonomy 586: 1–22. <https://doi.org/10.5852/ejt.2019.586>
- Cianfanelli S., 2002. Molluschi non marini, pp. 59-67. In: Corti C., Lo Cascio P. Masseti M. & Pasta S. (Eds.), Storia Naturale delle Isole Pelagie. L'Epos, Palermo, 189 pp.
- Cilia D.P., Sciberras A., Sciberras J. & Pisani L., 2012. Terrestrial gastropods of the minor islets of the Maltese Archipelago (Mollusca Gastropoda). Biodiversity Journal, 3: 543–554.
- Cusimano D., Guarino R. & Ilardi V., 2017. Scoperta di una seconda località per la stretta endemica *Anthemis ismelia* (Asteraceae) nella Sicilia nordoccidentale. Flora Mediterranea, 27: 151–158. <https://doi.org/10.7320/FIMedit27.151>
- De Gregorio A., 1896. Appunti su talune conchiglie estramarine di Sicilia viventi e fossili con la spiegazione delle tavole dell'opera di Benoit. Il Naturalista Siciliano, 14: 183-212.
- Falkner G., Ripken Th. EJ & Falkner M., 2002. Molluschi continentaux de France. Liste de Référence annotée et Bibliographie. Collezione Patrimoine Naturels, 52: 1–350.
- Fiorentino V., Cianfanelli S., Manganelli G. & Giusti F., 2004. I molluschi non marini delle isole Egadi (Canale di Sicilia): biodiversità e conservazione. Poster XIV congresso nazionale Società Italiana di Ecologia, Siena.
- Gianguzzi L.A. & Papini F., 2015. Carta della vegetazione della Sicilia (scala 1:250.000). In: Gianguzzi L.A. & Papini F. & Cusimano D., 2015, Carta della vegetazione del rilevamento fitosociologico della Sicilia (regione mediterranea). Journal of Maps: 1–7. <http://dx.doi.org/10.1080/17445647.2015.1094969>
- Giusti F., 1970. Notulae Malacologicae XII. L'isola di Pianosa e lo scoglio La Scola (Arcipelago. Toscano). Annali del Museo Civico di Storia Naturale di Genova, 78: 59–148
- Giusti F., 1973. Notulae malacologicae XVIII. I molluschi terrestri e salmastri delle Isole Eolie. Lavori della Società Italiana di Biogeografia, 3: 113–306.
- Giusti F., Manganelli G. & Schembri P.J., 1995. The non marine molluscs of the Maltese Islands. Museo Regionale di Scienze Naturali, Torino, Monografie, 15: 1–607.
- Holyoak D.T., 1983. Distribuzione dei molluschi di terra e d'acqua dolce in Corsica. Journal of Conchology, 31: 235–251.
- Kerney M.P. & Cameron R.A.D., 1999. Escargots et limaces d'Europe du Nord-Ouest. [Bertrand A. trad. adattato.] Delachaux et Niestlé, Paris et Neuchâtel, 370 pp.
- Manganelli G., Bodon M., Favilli L. & Giusti F., 1995.

- Gastropoda Pulmonata. In: Minelli A., Ruffo S. & La Posta S. (Eds.), Checklist delle specie della fauna italiana, 16. Calderini, Bologna, 60 pp.
- Manganelli G., Benocci A. & Giusti F., 2014. Chioccioline e lumache dell'Arcipelago Toscano. I Quaderni del Parco, 4: 1–160.
- Maurici G. & Manfrè Scuderi R., 2001. Guida dei Monti d'Italia: Sicilia. Collana Touring Club, Milano, 367 pp.
- MolluscaBase eds., 2021. MolluscaBase. *Ferussacia abromia* Bourguignat, 1863. Accessed at: <https://molluscabase.org/aphia.php?p=taxdetails&id=1539786> on 2025-03-20
- Moquin-Tandon A., 1855. Histoire naturelle des mollusques terrestres et fluviatiles de la France contenant des études générales sur leur anatomie et leur physiologie et la description particulière des genres, des espèces et des variétés. Tome second, 646 pp., atlas 1–92, Pl. I–LIV [= 1–54]. Paris (Baillière).
- Monterosato T. Di Maria, 1892. Molluschi terrestri delle isole adiacenti alla Sicilia. Atti della Reale Accademia di Scienze, Lettere ed Arti, 3° serie, 34 pp.
- Neubert E., Seddon M.B., Allen D.J., Arrébola J., Backeljau T., Balashov I., Bank R., Cameron R., de Frias Martins A.M., De Mattia W., Dedov I., Duda M., Falkner G., Falkner M., Fehér Z., Gargominy O., Georgiev D., Giusti F., Gómez Moliner B.J., Groh K., Ibáñez M., Kappes H., Manganelli G., Martínez-Ortí A., Nardi G., Neiber M.T., Páll-Gergely B., Parmakelis A., Prié V., Reischütz A., Reischütz P.L., Rowson B., Rüetschi J., Slapnik R., Son M., Štamol V., Teixeira D., Triantis K., Vardinoyannis K., von Proschwitz T. & Walther F., 2019. European Red List of Terrestrial Molluscs. IUCN: Cambridge, UK and Brussels, Belgium. <https://portals.iucn.org/library/node/48439>
- Pollonera C., 1905. Molluschi terrestri e fluviatili dell'Isola d'Elba e Pianosa. Bollettino Museo Zoologico e di Anatomia Comparata R. Università di Torino, 20: 3–9.
- Risso A., 1826. Histoire naturelle des principales productions de l'Europe méridionale et particulièrement de celles des environs de Nice et des Alpes Maritimes. Tome quatrième. F.-G. Levrault, Paris, viii + 439 pp. + pls 1–12.
- Rivas-Martínez, 2008. Global bioclimatics (Clasificación bioclimática de la Tierra) (versión 01–12–2008). www.globalbioclimatics.org (ultimo accesso 17–02 2021).
- Schileyko A.A., 1999. Treatise on Recent terrestrial pulmonate mollusks. Part 4. Draparnaudiidae, Caryodidae, Macrocyclidae, Acavidae, Clavatoridae, Dorcasiidae, Sculptariidae, Corillidae, Plectopylidae, Megalobulimidae, Strophocheilidae, Cerionidae, Achatinidae, Subulinidae, Glessulidae, Micracteonidae, Ferrussaciidae. Ruthenica, Suppl. 2, pp. 437–564.
- Schröter J.S., 1784. Einleitung in die Conchylienkenntniß nach Linné. Zweyter Band. Nebst vier Kupfertafeln. Halle. (Gebauer). VIII + 726 pp., Tab. IV–VII.
- Sparacio I., 1997. La *Ferussacia (Pegea) carnea* (Risso, 1826) dell'Isola di Pantelleria. Il Naturalista siciliano, 21: 237–241.
- Sparacio I., Surdo S., Viviano R., Liberto F. & Reitano A., 2021. Land molluscs from the Isola delle Femmine Nature Reserve (north-western Sicily, Italy) (Gastropoda Architaenioglossa Pulmonata). Biodiversity Journal, 12: 589–624. <https://doi.org/10.31396/Biodiv.Jour.2021.12.3.589.624>
- Viviano R., Viviano A., Liberto F., Reitano A. & Sparacio I., 2019. A new species of the genus *Schileykiella* Manganelli, Sparacio et Giusti, 1989 from Sicily (Italy)(Gastropoda Pulmonata Canariellidae). Biodiversity Journal, 10: 71–80.
- Welter-Schultes F.W., 2012. European non-marine molluscs, a guide for species identification: A1-A3, 1 679, Q1-Q78. Planet Poster Editions, Göttingen.
- Zajac K.S. & Kramarz P.E., 2017. Terrestrial gastropods-how do they reproduce? Invertebrate Survival Journal, 14: 199–209.