Revision of the systematic position of *Lindbergia garganoensis* Gittenberger & Eikenboom, 2006, with reassignment to *Vitrea* Fitzinger, 1833 (Gastropoda, Eupulmonata, Pristilomatidae)

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Lindbergia garganoensis Gittenberger & Eikenboom, 2006, a taxon with mainly a south-Balkan distribution, is the only Italian species assigned to the genus *Lindbergia* Riedel, 1959. The assignment to this genus, as documented by the peculiar spiral microsculpture of the teleoconch, has never been confirmed by anatomical data. Because this species was only known conchologically, a correct, anatomically-based generic classification within the Pristilomatidae was not possible. Due to the availability of some living specimens, the genitalia could be studied and *Lindbergia garganoensis* assigned its correct placement within the Pristilomatidae. The species is now classified into the genus *Vitrea* Fitzinger, 1833 because of the following diagnostic characters: absence of an epiphallus, presence of a sarcobelum inside the penis, presence of a vaginal gland and a very small bursa copulatrix.

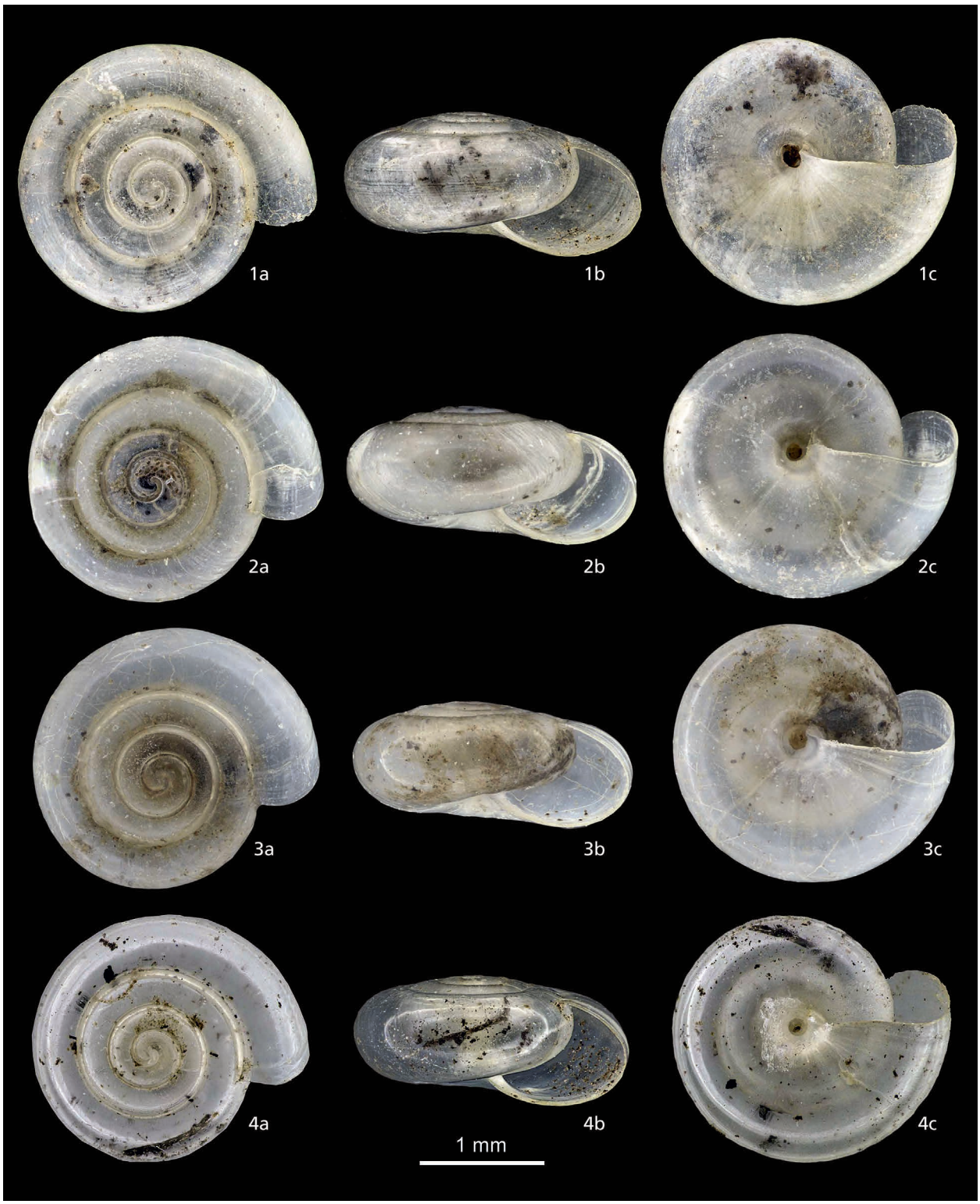
Key words: *Vitrea garganoensis*, Pristilomatidae, taxonomy, Apulia, Italy.

INTRODUCTION

Lindbergia garganoensis Gittenberger & Eikenboom, 2006 is the first species of the genus, *Lindbergia* Riedel, 1959 to be discovered in Italy. The genus *Lindbergia* encompasses about ten different species, endemic to the Greek mainland, Crete, the Cycladic islands, Dodecanese islands, northern Aegean islands, and southern Turkey (Riedel, 1992, 1995, 2000; Welter-Schultes, 2012; Bank & Neubert, 2017). Due to lack of anatomical data, some of these species remain generically questionable. Up to now, *L. garganoensis* was only known by the presence of very fine spiral striae on the teleoconch and by the general shape of its shell. Though assigned to the genus *Lindbergia*, it differs from its congeners by its very narrow umbilicus and small size (Gittenberger & Eikenboom, 2006). Described from the Promontorio del Gargano (Apulia, Italy), a geographical area sharing affinity with fauna of the southern Balkans, the assignment to *Lindbergia* is not unlikely. Recent collecting of live material at the type locality enabled study of the genital tract and the radula and a correct generic assignment based on this new data.

MATERIALS AND METHODS

Living specimens and empty shells were collected at or near the type locality in soil at a depth of 10-50 cm. They were found underneath large stones or at the base of limestone



Figs 1-4. Shells of *Vitrea garganoensis* (Gittenberger & Eikenboom, 2006) from the northern exit of the tunnel along the SP 57 road between Manfredonia and San Salvatore (Manfredonia, Foggia, Apulia). **1, 4,** G. Nardi & A. Braccia leg., 23.iv.2017; **2-3,** M. Bodon & E. Bodon leg. 31.vii.2010. Specimens in collection of Museum System of University of Florence, Zoological Section "La Specola" (MZUF GC/54580 and MZUF GC/54799).

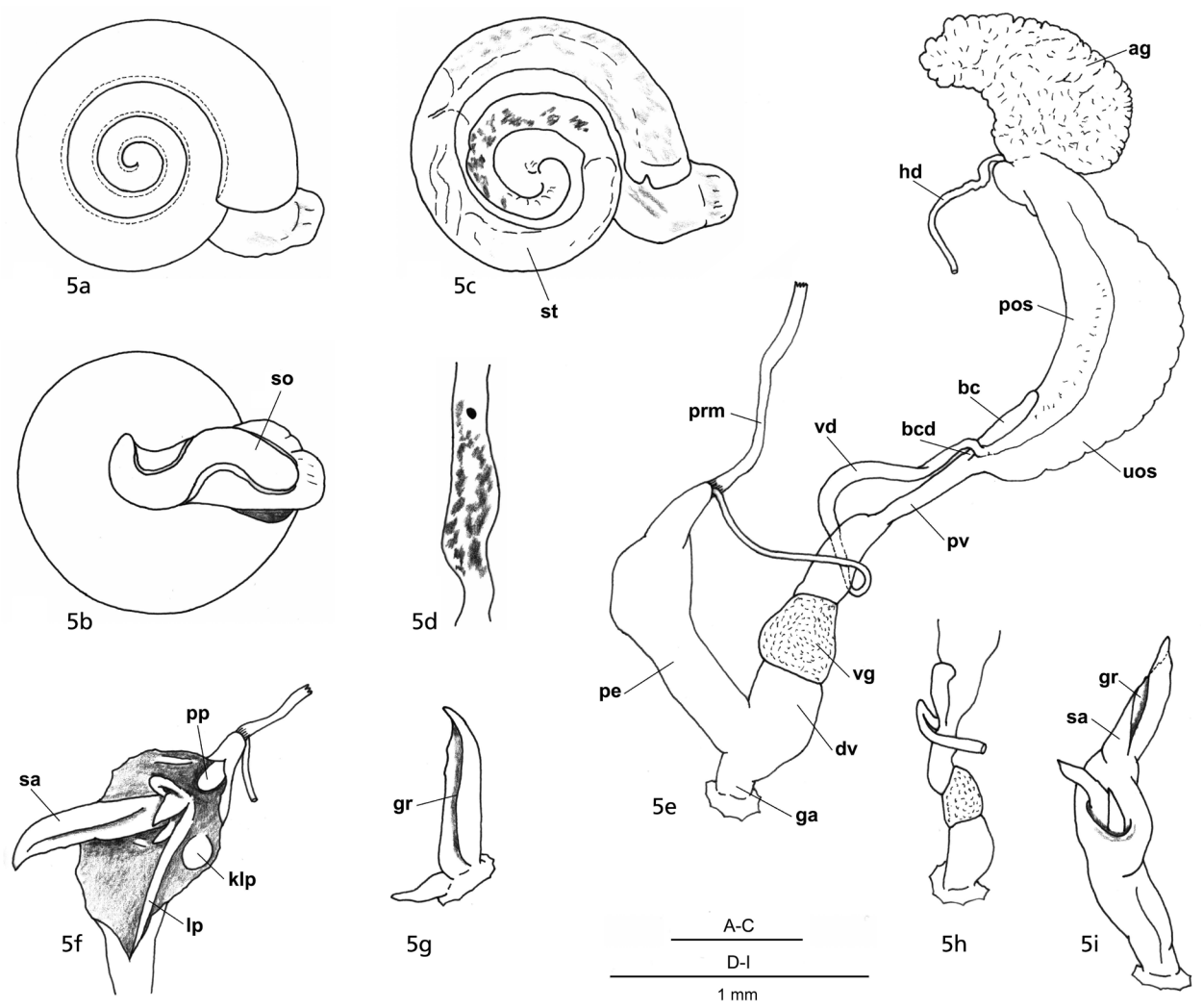


Fig. 5. Body, retractor muscle of optic tentacle and genitalia of *Vitrea garganoensis* (Gittenberger & Eikenboom, 2006). **5a-b,** body inside the shell; **5c,** body without shell; **5d,** retractor muscle of optic tentacle; **5e,** genitalia (without testis); **5f,** Internal structure of proximal penis; **5g,** sarcobelum; **5h,** last female genital tract of another specimen; **5i,** everted penis of another specimen. Specimens from the northern exit of the tunnel along the SP 57 road between Manfredonia and San Salvatore (Manfredonia, Foggia, Apulia), G. Nardi & A. Braccia leg., 23.iv.2017, in collection of Museum System of University of Florence, Zoological Section "La Specola" (MZUF GC/54580).

cliffs by using hand-held garden tools. Leaf litter, soil and debris were additionally collected at other sites in Apulia. To access the living specimens, sample material was placed in containers and saturated with water. Gastropods were culled from sieved dry debris. Specimens for genital study were preserved in 80% ethanol. After the shell was crushed, the body was extracted and dissected using finely-pointed watchmaker's forceps. The body and genitalia were drawn using a camera lucida. The radula was dissected out of the buccal bulb and washed in distilled water, mounted on copper blocks, sputter-coated with gold, and photographed using a scanning electron microscope.

Data are listed as follows: locality and collecting site, altitude, municipality and province in parenthesis, UTM coordinates (ED50), collectors and dates, numbers of specimens in parenthesis (shells, if stored as dry; specimens, if stored in alcohol). Geographic names of the localities were taken from the official Italian maps of the Italian Military Geographic Institute, 1:25,000; UTM coordinates were taken from these maps or recorded using a GPS receiver.

The examined material is preserved in the following collections: Museum System of University of Florence, Zoological Section "La Specola" (Via Romana 17, Florence, Italy; MZUF); M. Bodon (Via delle Eriche 100/8, Genoa, Italy; MBC); A. Braccia (Via Ischia 19, Brescia, Italy; ABC); S. Cianfanelli (Via Monferrato 3, Florence, Italy; SCC); G. Nardi (Via Boschette 8A, Gussago, Brescia, Italy; GNC); E. Talenti (Piazza Parri 4, Incisa, Florence, Italy; ETC).

The following abbreviations are used for anatomical features: ag = albumen gland; bc = bursa copulatrix; bcd = bursa copulatrix duct; dv = distal vagina; ga = genital atrium; gr = groove; hd = hermaphrodite duct; klp = knob-like papilla; lp = longitudinal pleat; pos = prostatic portion of ovispermiduct; pe = penis; pp = proximal papilla; prm = penial retractor muscle; pv = proximal vagina; sa = sarcobelum; so = sole; st = stomach; uos = uterine portion of ovispermiduct; vd = vas deferens; vg = vaginal gland.

SYSTEMATIC PART

Vitrea garganoensis (E. Gittenberger & Eikenboom, 2006)

Lindbergia garganoensis E. Gittenberger & Eikenboom, 2006.
Lindbergia garganoensis — Welter-Schultes, 2012.
Lindbergia garganoensis — Bank, 2013.
Lindbergia garganoensis — Bank & Neubert, 2017.
Lindbergia garganoensis — De Mattia, 2017.

Description of the shell (Figs 1-4). — Very small (height 1.0-1.4 mm, width 2.0-3.0 mm), strongly depressed, vitreous and transparent when fresh, composed by 3.5-4.0 whorls slowly and regularly increasing, slightly convex, separated by a shallow suture. Surface of teleoconch covered by very thin and regular growth lines, less visible near the last whorl. Last whorl about 1.8 times wider than the penultimate whorl. Narrow aperture, lunate, with a simple peristome edge, slightly thickened only at the columella; lower edge of peristome straight in umbilical view. Umbilicus present but very narrow, about 1/17-1/19 smaller than the shell diameter.

Description of the animal (Figs 5a-d). — Animal whitish, greyish on the head and covered by blackish spots on the mantle and on the visceral sac. Pigmented eyes; ocular tentacles extensively pigmented behind the eye. Sole undivided, having a uniform whitish colour.

Description of the genital tract (Figs 5e-i). — Gonad placed in the first part of the visceral sac, from which a thin hermaphrodite duct departs, ending with the insertion between the albumen gland and the proximal part of the ovispermiduct. Ovispermiduct separated into a well-developed uterine portion, which is followed in its distal part by a very short free oviduct, and a lesser-developed prostatic portion, followed by the vas deferens. The latter, relatively large in its first section and subsequently thinned, ends at the apex of the penis, near the long, thin penial retractor muscle. The sub-cylindrical penis is rather long, without a flagellum and not wrapped in a penial sheath; it is tapered and enlarged in its proximal part. Inside, a proximal papilla is located near the apex and a large, pointed sarcobelum is present. The sarcobelum bears two small teeth beneath the apex and a longitudinal groove extending its entire length on one side; two short, pointed protuberances are present at its base. From the base, the inner surface of the penis bears a knob-like papilla and the beginning of a longitudinal pleat extending in the direction of the atrium. The distal female part comprises an elongated, small, oval bursa copulatrix, supported by a short duct. A long proximal vagina, a well-developed vaginal gland and a short distal vagina are present. The genital atrium is short.

Radula (Fig. 6). — Teeth in many rows (± 55), each formed by a central tooth, three lateral teeth and 10 marginal teeth. Central tooth rather large, barely smaller than the lateral teeth, tricuspid, with a very long mesocone flanked by two shorter ectocones. Lateral teeth tricuspid, with a long mesocone and shorter ectocones, the external tooth of the third row is recessed and small. Marginal teeth unicuspid, decreasing in length near the edge of the radula.

Collecting sites. — **(1)** Promontorio del Gargano, small valley upstream from the bridge of the SP 57 road, between Manfredonia and San Salvatore, north of Masseria San Michele, 250 m a.s.l. (Manfredonia, Foggia), 33T WG7313, M. Bodon & E. Bodon leg. 31.vii.2010 (1 shell, MBC) + A. Braccia & G. Martucci leg. 04.xi.2015 (2 shells, 10 juvenile shells, GNC) + A. Braccia & G. Martucci leg. 04.vi.2016 (1 juvenile shell, GNC) + G. Nardi & A. Braccia leg. 23.iv.2017 (10 shells, 3 juvenile shells, MBC). **(2)** Promontorio del Gargano, at 4° bend along the SP 57 road, between Manfredonia and San Salvatore, 340 m a.s.l. (Manfredonia, Foggia), 33T WG7212, M. Bodon & E. Bodon leg. 31.vii.2010 (1 shell, MBC) + A. Braccia & G. Martucci leg. 04.xi.2015 (3 shells, 8 juvenile shells, ABC) + G. Nardi & A. Braccia leg. 23.iv.2017 (2 shells, 3 juvenile shells, GNC). **(3)** Promontorio del Gargano, southern exit of the tunnel along the SP 57 road, between Manfredonia and San Salvatore, 5 km NW Manfredonia, 380 m a.s.l. (Manfredonia, Foggia), 33T WG7313, M. Bodon & E. Bodon leg. 31.vii.2010 (1 shell, MBC) + A. Braccia & G. Martucci leg. 04.xi.2014 (1 shell, 3 juvenile shells, GNC). **(4)** Promontorio del Gargano, northern mouth of the tunnel along the SP 57 road, from Manfredonia to San Salvatore, 5 km NW Manfredonia, 380 m a.s.l. (Manfredonia, Foggia), 33T WG7313, M. Bodon & E. Bodon leg. 31.vii.2010 (10 shells, 3 juvenile shells, MBC; 2 shells, MZUF GC/54799, Figs 2-3) + A. Braccia & G. Martucci leg. 04.xi.2014 (3 juvenile specimens, GNC; 6 shells, 18 juvenile shells, GNC) + S. Cianfanelli & E. Talenti leg. 08.v.2015 (3 shells, 2 juvenile shells, MZUF GC/54542; 1 juvenile shell, MZUF GC/54577) + A. Braccia & G. Martucci leg. 04.xi.2015 (1 juvenile specimen, GNC; 8 shells, 15 juvenile shells, GNC) + A. Braccia & G. Martucci leg. 04.vi.2016 (2 juvenile specimens, 4 shells, 4 juvenile shells, GNC) + G. Nardi & A. Braccia leg. 23.iv.2017 (2 specimens, MZUF GC/54580, radula stub SEM MB/104; 5 shells, MZUF GC/54580, Figs 1, 4; 17 shells, 28 juvenile shells, SCC; 3 shells, 8 juvenile shells, ETC). **(5)** Promontorio del Gargano, above

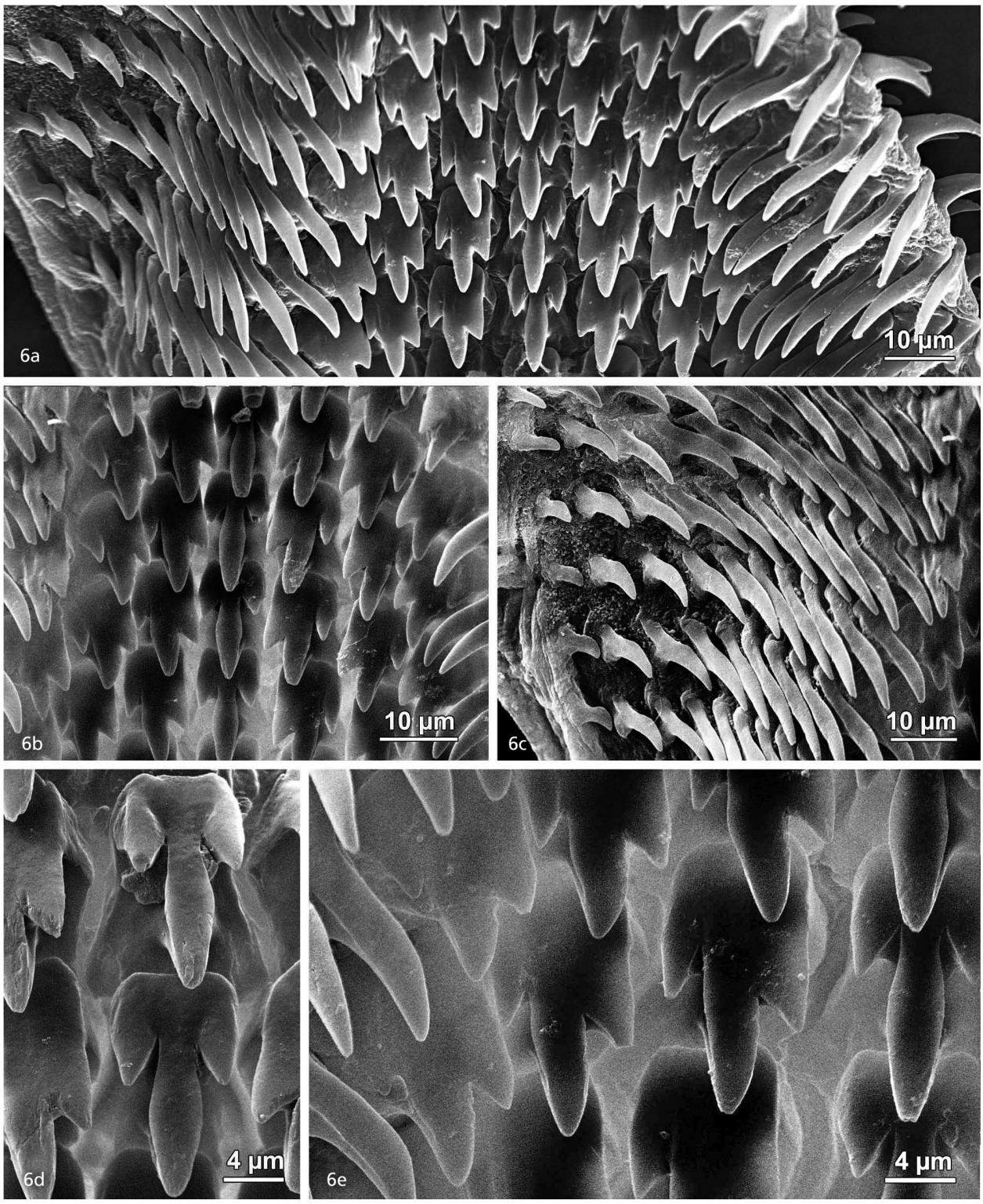


Fig. 6. Radula of *Vitrea garganoensis* (Gittenberger & Eikenboom, 2006). **6a,** complete view of central portion of radula; **6b,** detail of central tooth and lateral teeth in some rows; **6c,** detail of marginal teeth in some rows; **6d,** magnification of central tooth; **6e,** magnification of lateral teeth. Specimens from the northern exit of the tunnel along the SP 57 road between Manfredonia and San Salvatore (Manfredonia, Foggia, Apulia), G. Nardi & A. Braccia leg., 23.iv.2017, in collection of Museum System of University of Florence, Zoological Section "La Specola" (MZUF GC/54580 stub SEM MB/104).

Fig. 7. Distribution of *Vitrea garganoensis* (Gittenberger & Eikenboom, 2006) in Apulia (southern Italy).

the SP 57 road, between Manfredonia and San Salvatore, 400 m after the tunnel, 420 m a.s.l. (Manfredonia, Foggia), 33T WG7313, S. Cianfanelli & E. Talenti leg. 08.v.2015 (4 shells, 3 juvenile shells, MZUF GC/54584, stub 264/1-2). **(6)** Altopiano delle Murge, Gravina di Castellaneta, northern tract, 175 m a.s.l. (Mottola, Taranto), 33T XF6302, S. Cianfanelli & E. Talenti leg. 14.v.2018 (12 shells, 15 juvenile shells, MZUF GC/56580; 1 juvenile shell, MZUF GC/56623; 1 shell, 1 juvenile shells, MZUF GC/57058). **(7)** Altopiano delle Murge, mouth of Fosso Cervaro, Convento Vecchio, Mar Piccolo, 0 m a.s.l. (Taranto, Taranto), 33T XE9785, S. Cianfanelli & E. Talenti leg. 15.v.2018 (1 juvenile shell, MZUF GC/ 54716).

Habitat. — The specimens were found in sediment ca. 0.1-0.5 m depth (edaphic habitat) in scarcely vegetated, exposed scrubland, consisting of very rocky limestone areas, cliffs and boulders.

Distribution. — Based on the current data, *V. garganoensis* is known only from a few closely-clustered sites from the southern slope of the Promontorio del Gargano north of Manfredonia (Foggia), and in two sites from the Altopiano delle Murge near Taranto (Apulia, Italy) (Fig. 7).

Associated malacological fauna. — Other gastropod species were culled from sediment samples from the type locality and four stations in the vicinity (Table 1). *Cecilioides acicula* (O.F. Müller, 1774) and *Cecilioides petitiana* (Benoit, 1862) were especially frequent in the edaphic habitat.

DISCUSSION

Although the genus *Lindbergia* is characterized by very fine spiral striae on the teleoconch, members can only be unequivocally identified via anatomical characters (Riedel, 1980, 1992, 1998; Welter-Schultes, 2012). For this reason, doubts were raised upon the assignment of the Gargano species to this genus based on shell characters alone (Gittenberger & Eikenboom, 2006). Moreover, from a biogeographical point of view, no other species of *Lindbergia* are known from the central Mediterranean region. So far, all taxa assigned with certainty to *Lindbergia* are known from the Aegean area (Riedel, 1992). Shell characters (diameter, number of whorls, umbilicus dimensions and external sculpture) are insufficient for distinguishing between species belonging to *Lindbergia* and those belonging to other genera of the families Pristilomatidae and Oxychilidae and especially, those of the genus *Vitrea* Fitzinger, 1833. So far, the radula does not present diagnostic characters (Riedel, 1980).

Lindbergia is anatomically characterized by: a penis without internal structures and without flagellum; presence of a well-developed epiphallus in combination with the penis; penial sheath usually entirely wraps epiphallus and penis; very short vagina; absence of a vaginal gland (Riedel, 1984 for *L. beroni* Riedel, 1984; Riedel, 1977 for *L. orbicularis* (Riedel, 1962); Riedel, 1981a for *L. pinteri* Riedel, 1981; Riedel, 1960, 1968, 1977, 1980, for *L. pseudoillyrica* Riedel, 1960; Riedel, 1959 for *L. spiliaenymphus* Riedel, 1959; Riedel, 1981b for *L. stylokamarae* Riedel, 1981; Riedel, 1990, for *Lindbergia* sp.).

The verification of the genital tract from topotypical Gargano specimens confirmed that they belong to the family Pristilomatidae (sole undivided, not tripartite). However, the Gargano specimens show very different anatomical characters compared to the taxa hitherto included in the genus *Lindbergia*, such as the presence of a well-developed vaginal gland, a very small bursa copulatrix (with a very short duct), the absence of an epiphallus and the presence of a sarcobelum inside the penis. In the family Pristilomatidae, several other genera are included, encompassing many small-sized species living in hypogeal environments (Welter-Schultes, 2012; Bank, 2017). The family, Pristilomatidae, was once included in the Zonitidae (Riedel, 1980; Riedel, 1998) and later, separated to the subfamily level (Schileyko, 2003) and to its current position at the family level (Bank et al., 2001; Falkner et al., 2001, 2002; Bouchet et al., 2005).

The following genera of Pristilomatidae present on the European continent (except *Gollumia* Riedel, 1988, anatomy unknown) differ anatomically from the Gargano species as follows:

Hawaiia Gude, 1911 (alien species in Europe, recently reported also in Italy; Bodon et al., 2004), for the presence of a short penial flagellum, an evident epiphallus and a bursa copulatrix with a long duct (Baker, 1928; Riedel, 1980);

Family	Species	Site 1	Site 2	Site 3	Site 4	Site 5
Pomatiidae	*Pomatias* (*Pomatias*) *elegans* (O.F. Müller, 1774)	×	×	×	×	
Carychiidae	*Carychium tridentatum* (Risso, 1826)			×		
Achatinidae	*Rumina decollata* (Linnaeus, 1758)	×	×			×
Ferussaciidae	*Cecilioides* (*Cecilioides*) *acicula* (O.F. Müller, 1774)	×	×	×	×	×
Ferussaciidae	*Cecilioides* (*Cecilioides*) *petitiana* (Benoit, 1862)	×	×	×	×	
Ferussaciidae	*Ferussacia* (*Ferussacia*) *folliculum* (Schröter, 1784)	×		×		
Lauriidae	*Lauria* (*Lauria*) *cylindracea* (da Costa, 1778)	×			×	
Pyramidulidae	*Pyramidula jaenensis* (Clessin, 1882)	×	×	×	×	
Chondrinidae	*Granopupa granum* (Draparnaud, 1801)	×	×	×	×	×
Chondrinidae	*Granaria frumentum illyrica* (Rossmässler, 1835)		×		×	
Chondrinidae	*Chondrina avenacea avenacea* (Bruguière, 1792)	×			×	
Chondrinidae	*Rupestrella philippii* (Cantraine, 1840)	×	×	×	×	×
Truncatellinidae	*Truncatellina callicratis* (Scacchi, 1833)	×	×	×	×	
Enidae	*Jaminia quadridens* (O.F. Müller, 1774)	×	×	×	×	×
Clausiliidae	*Medora garganensis* (A.J. Wagner, 1918)	×		×	×	×
Clausiliidae	*Siciliaria* (*Gibbularia*) *gibbula gibbula* (Rossmässler, 1836)	×	×	×	×	×
Spiraxidae	*Poiretia cornea* (Brumati, 1838)	×	×		×	
Punctidae	*Punctum* (*Punctum*) *pygmaeum* (Draparnaud, 1801)				×	
Discidae	*Discus* (*Gonyodiscus*) *rotundatus rotundatus* (Müller, 1774)				×	
Pristilomatidae	*Vitrea* spec. nov.	×				
Gastrodontidae	*Aegopinella pura* (Alder, 1830)		×		×	
Oxychilidae	*Daudebardia* (*Daudebardia*) *brevipes* (Draparnaud, 1805)				×	
Oxychilidae	*Oxychilus* (*Oxychilus*) *draparnaudi* (Beck, 1837)	×	×		×	
Oxychilidae	*Mediterranea hydatina hydatina* (Rossmässler, 1838)	×			×	
Hygromiidae	*Monacha* (*Monacha*) *parumcincta* (Menke, 1828)	×	×		×	×
Geomitridae	*Xerotricha conspurcata* (Draparnaud, 1801)	×		×	×	
Geomitridae	*Cernuella* (*Cernuella*) *cisalpina* (Rossmässler, 1837)	×	×	×	×	×
Geomitridae	*Cernuella* (*Cernuella*) *virgata* (da Costa, 1778)					×
Geomitridae	*Trochoidea* (*Trochoidea*) *pyramidata* (Draparnaud, 1805)	×	×	×	×	×
Helicidae	*Massylaea vermiculata* (O.F. Müller, 1774)	×	×	×	×	
Helicidae	*Cornu aspersum* (O.F. Müller, 1774)				×	

Table 1. Other species of molluscs collected with *Vitrea garganoensis* (Gittenberger & Eikenboom, 2006), in the five sites near Manfredonia, Promontorio del Gargano (Foggia, Apulia, Italy).

Spinophallus Riedel, 1962, for the enlarged duct of the bursa copulatrix, a gland placed on the free oviduct and several spines inside the penis (Riedel, 1960);

Gyralina Andreae, 1902, for a penis without internal structures (or provided with small spines) and for the well-developed bursa copulatrix (Gittenberger, 1977; Riedel, 1980, 1990; Riedel & Subai, 1993);

Troglovitrea Negrea & Riedel, 1968, for the short and robust penial flagellum and the short, enlarged epiphallus (Negrea & Riedel, 1968);

Taurinellushka Balashov, 2014, for the short and conical penial flagellum and the short, enlarged epiphallus (Balashov, 2014).

Interestingly, the European pristilomatid genus *Vitrea* Fitzinger, 1833, a genus including ± 70 species, characterized by the presence of a well-developed vaginal gland, a very small bursa copulatrix with very a short duct, the absence of an epiphallus and, frequently, for the presence of a variably shaped sarcobelum inside the penis (Riedel, 1980; Giusti et al., 1995; Schileyko, 2003), fits perfectly with the species from Promontorio del Gargano. Therefore, we reassign *Lindbergia garganoensis* to the genus, *Vitrea,* and herewith propose the new classification, *Vitrea garganoensis* (E. Gittenberger & Eikenboom, 2006).

Based on the morphology of the inner structure of the penis, in particular the shape of the sarcobelum, the genus *Vitrea* was subdivided into some subgenera (Riedel, 1980; Schileyko, 2003). As the inner structure of the penis is known in only a few species, and because new data suggest the presence of other diagnostic characters (personal unpublished data), the current subgeneric classification, in accordance with Riedel (1990), appears unsatisfactory. However, the inner structure of the penis appears significant for species discrimination.

The sarcobelum in *Vitrea garganoensis* resembles those encountered in members of many populations of conchologically-identified, *Vitrea subrimata* (Reinhardt, 1871) from the province of Lecce (Apulia). However, *V. subrimata* probably includes a complex of species that needs to be taxonomically revised (Ferreri et al., 2005). Luckily, the shells of *V. garganoensis* are well-characterized by the peculiar regular spiral striae covering the teleoconch (Gittenberger & Eikenboom, 2006, fig. 8), allowing easy distinction from other species of *Vitrea* presently known from Apulia and southern Italy. These include *Vitrea cavannae* (Paulucci, 1881) (taxon confused with *V. botterii* (L. Pfeiffer, 1853), but having very different anatomy, personal unpublished data), *V. contracta* (Westerlund, 1871), *V. etrusca* (Paulucci, 1878), *V. subrimata* (Reinhardt, 1871), *Vitrea* sp. (sensu Giusti, 1973, sensu Giusti et al., 1995 and sensu Ferreri et al., 2005) and another species new to science, *Vitrea* spec. nov., similar to *Vitrea trolli* (A.J. Wagner, 1922) (Giusti et al., 1985; Manganelli et al., 1995; Ferreri et al., 2005; Gittenberger & Eikenboom, 2006).

The distribution of *V. garganoensis* seems to be limited to rather small areas of the Promontorio del Gargano (northern Apulia) and the Altopiano delle Murge near Taranto (central Apulia) (Fig. 7). As is the case with other endemic gastropods known in Promontorio del Gargano and Apulia, including *Platyla polita regina* (Subai, 1977), *Medora garganensis* (A.J. Wagner, 1918), *Siciliaria gibbula niethammeri* (B. Rensch, 1934) and *Siciliaria gibbula sanctangeli* (A.J. Wagner, 1925) (Holdhaus, 1912, Girod & Sacchi, 1967; Subai, 1977; Boeters et al., 1989; Bodon et al., 1995; Manganelli et al., 1995; Eikenboom, 1996; Colomba et al., 2012; Nordsieck, 2012, 2013), *V. garganoensis* contributes to the natural heritage and biodiversity of this south-eastern Italian region.

Due to lack of data regarding its distribution and population status, *Vitrea garganoensis* has been listed as a Data Deficient (DD) species (De Mattia, 2017) in the IUCN Red List Categories and Criteria system (IUCN, 2014). By virtue of our new data, confirming that this species inhabits rather restricted areas of the Promontorio del Gargano (Municipality of Manfredonia) and the province of Taranto, but not other neighbouring assessed areas (such as the Foresta Umbra or Salento), the assignment to the category Near Threatened (NT), is proposed. The few populations surveyed to date can easily be compromised by the summer fires that are not rare in the Gargano area of northern Apulia (some probably triggered by local shepherds to renew the pastures). Because the known stations in the Promontorio del Gargano are entirely included within the Gargano National Park, the SIC "Valloni and Steppe Pedegarganiche" (IT9110008) and the ZPS "Promontorio del Gargano" (IT9110039), while those in the province of Taranto are included in the SIC Area delle Gravine (IT9130007) and Mar Piccolo (IT9130004), conservation and education will hopefully remain a priority.

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