

The genus *Lindbergia* (Gastropoda, Pulmonata, Zonitidae)  
in Greece and the Promontorio del Gargano in Italy

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Three species with small, narrowly perforate, zonitid shells, are reported from the Promontorio del Gargano, Italy. Two of these are problematic *Vitrea* species. Here, the third one is provisionally described as a *Lindbergia* species, *L. garganoensis* spec. nov., because of the general shape of the shell and the microsculpture of the teleoconch whorls. That genus is hitherto known from Greece only.

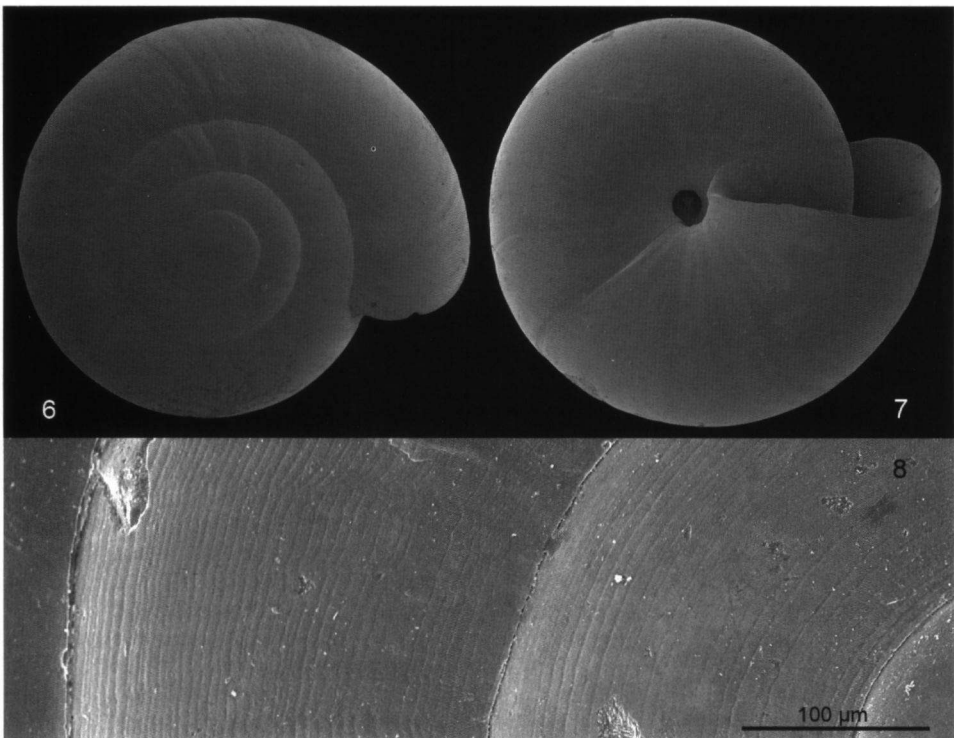
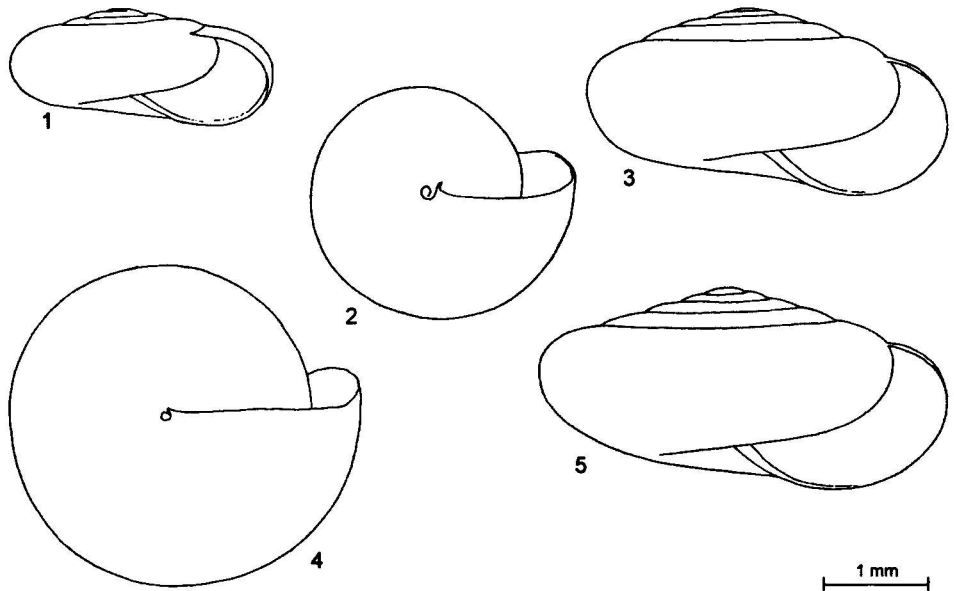
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INTRODUCTION

While studying bottom samples, collected independently by both authors of this paper in the region of the Promontorio del Gargano, Puglia, Italy, many small zonitid shells were sorted out. These shells could easily be classified into two categories on the basis of the relative width of their umbilicus. Next to specimens with an umbilicus measuring c. 1/7 of the shell width, shells with a much narrower umbilicus were present. The former category is rather homogeneous in size and shape and reminds of species like *Vitrea botterii* (L. Pfeiffer, 1853) and *V. contracta* (Westerlund, 1871). Without anatomical data and in the absence of a general revision of the Italian *Vitrea* Fitzinger, 1833, species, the identity of this species has to remain uncertain.

The shells belonging to the second category are equally problematical. They can be subdivided into three species, i.e. two common ones and a rare one. Initially, the shells of the common species were classified provisionally, on the basis of a comparison with samples in the collections of the authors, as *Vitrea trolli* (A.J. Wagner, 1922) (fig. 5) and *V. subrimata* (Reinhardt, 1871) (figs 3, 4). The shells of the rare species, known from only a single locality, cannot be classified with certainty in *Vitrea*. They also remind of species of the genera *Lindbergia* Riedel, 1959, or *Mediterranea* Clessin, 1880.

Meanwhile Dr. M. Bodon (in litt.) kindly informed us that upon dissection, the true *V. trolli* from near the type locality and its conchological double from the Promontorio del Gargano turned out to be specifically distinct and not even closely related. Both species will be dealt with by that author. The wide-spread *V. subrimata* sensu auct. should be revised in its entire range, which is also beyond the scope of this paper. Pending these revisions, we here describe only the rarest of the four small zonitids. Surprisingly, some



Figs 1-8. *Lindbergia* and *Vitrea* spec. 1, 2, *L. garganoensis* spec. nov., paratype, type locality; 3, 4, *V. cf. subrimata*, Italy, Foggia, Promontorio del Gargano, 2 km W. of Pugnochiuso; 5, *V. cf. trolli*, do., Foresta Umbra. J.C.A. E. del. & colln.; 6, 7, *Lindbergia garganoensis* spec. nov., type locality; 6, holotype (National Museum of Natural History/106683), actual width 2.4 mm; 7, paratype (J.C.A. Eikenboom colln/01314), actual width 2.5 mm; 8, detail of the holotype. Photographs by J. Goud (Leiden)

shells of this species were collected by the present authors independently at exactly the same locality. In contrast to the vegetated or even densely forested places where the three more common species were found, these shells were found in a scarcely vegetated, exposed, very rocky limestone area with rock faces and boulders. In crevices in a similar habitat in Greece, *Mediterranea ionicus* (Riedel & Subai, 1978) or, particularly in Crete, species of the genus *Lindbergia* can be found.

## TAXONOMY

### *Lindbergia garganoensis* spec. nov. (figs 1, 2, 6-8)

Material. — Italy, Foggia, Promontorio del Gargano, 5 km NW. of Manfredonia, 300-350 m alt. (National Museum of Natural History 106683/holotype, 106678/1 paratype; colln J.C.A. Eikenboom, Hellevoetsluis 01314/7 paratypes).

Description. — Shells strongly depressed, colourless and glossy (fresh specimens), with irregular growth lines; with  $3\frac{3}{4}$ -4 slightly convex whorls, separated by a shallow suture, which is somewhat leveled along the last whorl, while approaching the aperture. The initial teleoconch whorls with numerous, very fine, spiral striae, which become less clearly visible towards the last whorl. Shell not very fragile; near the aperture the last whorl is slightly thickened inside. Seen from above, the last whorl is 2.3 times broader than the adjoining, visible part of the penultimate one. The umbilicus is open but very narrow, measuring clearly less than 0.1 of the shell width. The very short columellar apertural border is thickened and conspicuously angled in such a way that its insertion on the penultimate whorl is shifted away from the shell axis.

Shell height 1.0-1.3 mm, width 2.0-2.6 mm.

Differentiation. — On the weak basis of the general shape of the shell and especially the microsculpture of the teleoconch whorls, this species is classified with *Lindbergia*. It differs from the species that are known in that genus by its very narrow umbilicus and the small size. In the hitherto known *Lindbergia* species, the shells are larger, measuring 3.3-5.5 mm in width (Riedel, 1980: 40). In the *Mediterranea* species the columellar apertural border is gradually curved and not conspicuously thickened; with 3.5-8.5 mm in width, the *Mediterranea* shells are also larger. In *Vitrea* the columellar region may be similar, but here the last whorl is usually relatively narrower and there is no prominent microsculpture of spiral striae on the initial teleoconch whorls. Data on the anatomy are indispensable for a more satisfying generic assignment.

Distribution. — *Lindbergia garganoensis* is only known from the type locality. If its doubtful classification is correct, it is the first species of *Lindbergia* to be reported from Italy. Its occurrence in both the Promontorio del Gargano and the western Balkans reminds of a few molluscan species that have a similar distributional pattern, like *Acicula disjuncta* Boeters, Gittenberger & Subai, 1989, and especially *A. szigethyannae* Subai, 1977 (see Boeters et al., 1989).

## REFERENCE

- BOETERS, H.D., E. GITTENBERGER & P. SUBAI, 1989. Die Aciculidae (Mollusca: Gastropoda Prosobranchia). — Zoologische Verhandlungen 252: 1-234.