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Dissona inusitata, a new fossil species of allied cowry (Gastropoda: Ovulidae) from the middle Miocene of West Java, Indonesia

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ABSTRACT A new species of *Ovulidae* J. Fleming, 1822 from the Nyalindung Formation, late Middle Miocene of West Java, Indonesia, is reported. The species is provisionally placed in the genus *Dissona* Cate, 1973, which, if confirmed, will be the first occurrence of this genus in the fossil record.

KEY WORDS First record, Gastropoda, Ovulidae, *Dissona*, *Dissona inusitata*, Miocene, Tasikmalaya, Java, Indonesia

INTRODUCTION

Ovulidae J. Fleming, 1822, often called "allied cowries" because of their resemblance to the family *Cypraeidae* Rafinesque, 1815, are testaceous gastropods that feed on corals, hard or soft depending on the species. They are generally found in tropical waters, although there are a few exceptions, notably European species, which live in cold or temperate waters. This family contains about 40 genera, and if we do not give a more precise figure, this is because some of these genera are still the subject of debate. As the species are usually small and quite similar, assigning them a definitive genus is indeed not always easy, and recent years have seen some species move from one genus to another. Numerous examples are given in Lorenz and Fehse (2009), and we cannot rule out further moves once DNA analyses, which are still sorely lacking, become available.

These uncertainties as to genus, which are true of living species whose specimens are by nature available in sufficient quantity and whose identification is facilitated by the different colorations that the shells can take on, apply to fossil species even more. Indeed, in the case of fossil shells, the colors have mostly disappeared, the surface is sometimes worn, and the shells are often crushed and deformed by the weight of the sediment, or even broken and incomplete. This is particularly true of the *Ovulidae* family, whose shells are generally much more fragile than those of the *Cypraeidae*, for which many extinct species are known thanks to shells found in a generally very good state of preservation. Under these conditions, it is all the more difficult to assign a precise genus to hitherto unknown species of *Ovulidae*, and all the more so as all the classic characteristics that enable fine identification have sometimes disappeared (shells with missing parts), are invisible (hidden under very hard sediments that cannot be removed without the risk of breaking the shell), or are absent. In the latter case, this is what has happened, for example, with an indistinct or non-existent funiculum in species that have been attributed without any doubt to a genus in which funiculum is precisely an important feature, *Pseudosminia* (Celzard & Dovesi, 2023).

In this paper, we report a new species of *Ovulidae* which, for lack of a more suitable genus, we assign to *Dissona* Cate, 1973. If confirmed, this would be the first fossil species

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ever reported for this genus, which so far has only three living species: *D. tosaensis* Azuma & Cate, 1971, *D. reflexa* Cate, 1973, and *D. tarasconii* Bozzetti, 2007. Although there is no doubt that the species described here is new to science, we did not feel it necessary to create a new genus. *Dissona* is therefore provisionally attributed to this species, until further discoveries, either of other specimens of the same species, or of other related species, enable us to clarify and definitively settle this matter.

MATERIAL EXAMINED

Two complete fossil shells, one in perfect condition and the other slightly deformed, and one incomplete were examined, all from the same area, southeast of the town of Tasikmalaya, West Java, Indonesia. All were discovered between 2 and 4 meters deep in the subsoil of Miocene sediments. The holotype is preserved in the Museo di Scienze Naturali dell'Università di Firenze (Firenze, Italia), whereas the paratypes are preserved in the Alain Celzard collection (Epinal, France).

TYPE LOCALITY AND TYPE STRATUM

A thorough discussion of the geology of the Tasikmalaya fossiliferous zone, West Java, has recently been presented by Celzard & Dovesi (2024), and we refer the reader to the latter article on the subject. In brief, we can state that the three specimens presented here were collected west of Citalahab, towards Cibalong, southeast of Tasikmalaya, in the Southern Mountains Zone, and date from the late Middle Miocene. In this respect, they are contemporary with other *Ovulidae* species recently described by the present authors (Celzard & Dovesi 2023 and 2024). More details on the Nyalindung Formation, which dates from the Serravallian (13.8 - 11.6 Ma) and from which the specimens discussed here were obtained, can be found in Celzard & Dovesi (2024), with references to earlier work on the geology of the site. Other mollusk and coral species found in the same sediments indicate that the new *Ovulidae* species presented lived in a tropical lower intertidal to upper subtidal environment.

SYSTEMATICS

Class	Gastropoda Cuvier, 1795
Subclass	Caenogastropoda Cox, 1960
Order	Littorinimorpha Golikov & Starobogatov, 1975
Superfamily	Cypraeoidea Rafinesque, 1815
Family	Ovulidae Fleming, 1822
Subfamily	Simniinae F.A. Schilder, 1927
Genus	*Dissona* Cate, 1973

Dissona inusitata Celzard & Dovesi, new species †
(Plate 1)

Description. Shell rather small, narrow, spindle-shaped, broader centrally, slightly calloused; aperture long and narrow, widening posteriorly but even more anteriorly; funiculum spiral, oblique, poorly produced, extending into the anal canal but not itself part of it; dorsum smooth and shiny; labrum calloused, rounded, shouldered, smooth and uneven, significantly thicker in the central part of the shell, causing a central narrowing of the aperture; ventrum smooth and glazed, slightly calloused; anterior terminal blunt; posterior terminal produced; fossula and inner adaxial carinal ridge not clearly visible in the material available, but probably poorly developed or indistinct; lip, tips and ventrum consistently paler than the rest of the shell.

Type Material. Holotype IGF 105238, length 17.06 mm, width 6.34 mm (Plate 1, A). *Dissona inusitata* paratypes (Plate 1): B, length 15.97 mm, width 6.27 mm; C, length 11.85 mm,

width 4.34 mm. Plate 1 shows the holotype and two paratypes.

Etymology. The species presented is called *inusitata*, in reference to the unusual shape and characteristics of this new species, having necessitated the search for a previously unreported genus in the fossil record of the *Ovulidae*. Moreover, we think this species name fits in very well with the genus name *Dissona* as chosen by Cate (1973), "derived from the Latin *dissonus*, meaning different, discordant, inharmonious".

DISCUSSION

The new species presented here is provisionally assigned to the genus *Dissona* Cate, 1973, mainly because of its resemblance to the two current species of the same genus living in the Pacific Ocean, namely *Dissona tosaensis* Azuma & Cate, 1971, from Japan, and *Dissona reflexa* Cate, 1973, with a wider distribution from the Philippines to Japan through the East China Sea. *Dissona tarasconii* Bozzetti, 2007, from Madagascar, has a slightly different morphology, although it is still attached to the genus *Dissona* due to its specific characteristics, namely a spiral and oblique funiculum, and a centrally constricted labrum, giving the shell a highly recognizable curvature. These are indeed the main criteria which, in addition to the spindle-shaped and narrowly rhomboidal shape of the shell, made us decide in favor of the genus *Dissona* when describing this new species.

However, this attribution to the genus *Dissona* Cate, 1973 is not entirely satisfactory either if we look at the three living species, which are all characterized by shells that are relatively thin to the point of being slightly translucent. This is especially true of *D. tosaensis* and *D. reflexa*, *D. tarasconii* having a more solid shell. *Dissona inusitata* n. sp., on the other hand, has a thick shell, even calloused in places, and is therefore totally opaque. *D. tosaensis* and *D. reflexa* also have denticulations on the outer margin, particularly posteriorly in *D. reflexa*, but also anteriorly in *D. tosaensis*. In *D. tarasconii*, the labrum is smooth, with the exception of a sharp denticle on the anterior end. *Dissona inusitata* n. sp., for its part, has a toothless labrum, although a tiny crenulation can be discerned on the anterior lip of the holotype, barely visible on the two paratypes. However, denticulation is more or less pronounced in living *Dissona* specimens, and it is not uncommon to find *D. reflexa* labrae that are virtually toothless. Denticulation or crenulation of the labrum is therefore not necessarily a stable feature of the *Dissona* genus. On the other hand, all living species of this genus have their dorsum (and sometimes also their ventrum) covered with fine striae, whereas *Dissona inusitata* n. sp. is completely smooth. But then again, this criterion was not used by Cate (1973) to define the genus *Dissona*, nor was it retained by Lorenz and Fehse (2009) in their reference book on *Ovulidae*.

It may also be interesting to note that the very particular curvature of the aperture, with a central constriction, is also found in the genus *Pellasimnia* Iredale, 1931. The living species whose general outline most closely resembles that of the present new fossil species is *Pellasimnia maccoyi* Tenison-Woods, 1878, known from South and East Australia to Tasmania. It is worth pointing out that *P. maccoyi* was assigned to the genus *Dissona* by Cate (1973) when he created this genus, therefore confirming a certain similarity. However, the genus *Pellasimnia* is devoid of funiculum, whereas *Dissona* clearly has one. Furthermore, the other *Pellasimnia* species have shells that are more lightweight, much

more pointed at the ends, and the shape of the tips is very different too. So the comparison ends there.

Consequently, the new species of *Ovulidae* from the late Middle Miocene of West Java, Indonesia, has been named *Dissona inusitata* n. sp. Although several uncertainties remain as to the definitive assignment of this new species to *Dissona*, this genus seems by far the most appropriate. Given the limited material available for this description, we do not recommend creating another genus at this time. If *Dissona* is confirmed on the basis of new specimens becoming available, this will be the first mention of this genus in the fossil record, and the number of *Dissona* species will thus rise to 4, with *Dissona inusitata* n. sp. becoming the only extinct species known to date. As far as the authors are aware, this is also the only time that a species of *Dissona*, living or fossil, has been reported from the Eastern Indian Ocean, in Indonesia.

LITERATURE CITED

Cate, C.N. 1973. A systematic revision of the recent cypraeid family Ovulidae. The Veliger. 15 (supplement):1-117.

Celzard, A. & M. Dovesi. 2023. A new species of fossil *Pseudosimnia* (Gastropoda: Ovulidae) from the Miocene of West Java, Indonesia. The Festivus 55(3):154-164.

Celzard, A. & M. Dovesi. 2024. First record of the genus *Neosimnia* (Gastropoda: Ovulidae) in the Eastern Indian Ocean, with the description of five fossil species from the Miocene of West Java, Indonesia. The Festivus 56(2):89-100.

Lorenz, F. & D. Fehse. 2009. The Living Ovulidae, ConchBooks, Hackenheim, Germany. 650 pp, 203 colour plates and 375 illustrations.

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Plate 1. *Dissona inusitata* n. sp. Holotype **A**, length / width: 17.06 / 6.34 mm, incomplete specimen; Paratypes and corresponding lengths / widths: **B**, 15.97 / 6.27 mm; **C**, 11.85 / 4.34 mm, deformed specimen, impossible to clean further.