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*Molluscan Megadiversity:
Sea, Land and Freshwater*

**‘Through the Keyhole’-When symmetrical, does the size of one’s body really matter?
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The fissurellids (Vetigastropoda: Mollusca) are bilaterally symmetrical limpets. They are known as keyhole or slit limpets due to a hole or slit either at the apex or anterior margin. The mantle cavity of fissurellids contains paired ctenidia, osphradia and hypobranchial glands. Interestingly, the fissurellids are the only gastropods in which all mantle organs are paired and a symmetrical arrangement within the mantle cavity is maintained. Like most vetigastropods, fissurellids also have paired auricles, gonads, kidneys and the digestive tract and nervous system are crossed. Paired organs are not found in any of the other groups of uncoiled limpet-shaped gastropods. Even the sister group to other gastropods, the patellogastropods (true limpets) have asymmetrical organs with highly modified mantle cavity arrangements. Not only is the plesiomorphic mantle cavity arrangement in fissurellids unusual for gastropods, there is also a great size variance within the group. My research aims to test hypotheses about the popularly perceived notions regarding the inefficient nature of a symmetrical mantle cavity. Such hypotheses suggest that the paired mantle cavity arrangement is inefficient as the anus lies in between the ctenidia. Many suggest that this is deleterious because fouling of the gills can occur; furthermore the flow through a symmetrical mantle cavity is thought to be less efficient and brings with it the problem of sediments clogging the gills. Such a mantle cavity is restricted in how it can elongate to accommodate larger gills. Casual observation indicates that large fissurellids typically have expanded mantle or foot tissue, suggesting the probability of the development of additional respiratory surfaces to overcome this problem. I aim to determine if the foot or mantle are being utilised as secondary respiratory surfaces and if such modifications are occurring, whether different responses to increasing size are occurring in different lineages within the fissurellids.

**The taxonomical status of the Iberian taxon *Xerocrassa barcinensis* sensu Soós (1926)
(Gastropoda, Hygromiidae)**

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Soós (1926) describes the reproductive system of a species that is conchologically identified as *Helix barcinensis* Bourguignat 1868, from “Guardiola” (Barcelona). The characteristics of the genitalia led Soós to include this species in the genus *Trochoidea*, thus establishing the new combination *Trochoidea barcinensis* (currently *Xerocrassa barcinensis*). Gittenberger (1993) has verified that the anatomy of the typical material of *X. barcinensis* belongs to *Helicella* and not to *Xerocrassa*, thus proving that *Helicella barcinensis* is a junior synonym of *Helicella madritensis*, therefore *X. barcinensis* sensu Soós would need a redetermination. Puente (1994) reassigns *X. barcinensis* sensu Soós to *X. pallaresica*, following Gittenberger (1993).

A syntype of *H. pallaresica* has been studied, proceeding from the Fagot collection, deposited at the Museu de Zoologia of Barcelona, allowing us to include this taxon in the synonymy of *H. madritensis*. This fact implies that the name of the taxon that should be used for *X. barcinensis* sensu Soós is the next one on the list indicated by Gittenberger, therefore *Helix salvanae*. Despite the fact that specimens of the type series of this sample have been found

neither in the Fagot collection nor in the Salvaña collection (MZB), a sample has been found in the Chía collection (MZB) made up of two shells with two labels. It is our opinion that the latter proceeds from the same original sample, belonging to a syntype according to Art. 72.4.1.1 of the ICZN, due to the fact that Salvaña and Chía were contemporaries and exchanged many samples from their respective collections. After studying both syntypes, we conclude that there must also be considered a junior synonym of *Helicella madritensis*. This is why *X. barcinencis* sensu Soós should now be denominated, according to Gittenberger's list, *Helix chiae*. The original material has been found neither in Fagot's, Salvaña's nor in Chia's collections and so it should be provisionally denominated as *Xerocrassa chiae* (Fagot 1886).

The taxonomical identity of three taxa of the genus *Iberus* Montfort 1810: *Helix alcarazana* Rossmässler 1854, *Helix guiraoana* Rossmässler 1854 and *Helix guiraoana* var. *angustata* Rossmässler 1854 (Gastropoda, Helicidae)

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Helix guiraoana was described by Rossmässler from "Castellón". Paratypes deposited in the Senckenberg Museum of Frankfurt have been revised. *Iberus guiraoanus* shows a conchological characteristic not found in the majority of the morphos of *Iberus*, such as a well defined umbilicus. Furthermore, paratypes of *Helix guiraoana* var. *angustata* have been studied from the type locality in Granada, also deposited in the SMF, and it has been proved that its conchological characteristics coincide exactly with *I. guiraoanus*, which is why, in our opinion, *H. guiraoana* var. *angustata* should be considered as a junior synonym of *I. guiraoanus*. Furthermore, these two taxa share the same geographic area around the provinces of Albacete, Jaen and Granada.

In the same manuscript, Rossmässler described *Helix alcarazana* from "Sierra de Segura en Alcaraz". Paratypes deposited in the SMF have been revised too. This species has a subglobose shell without umbilicus, in contrast to *I. guiraoanus*, for which reason the assignment of *Iberus* specimens to one species or another, presents no difficulties. In last years intensive samplings have been carried out in the geographic areas close to the type localities of *I. guiraoanus* and *I. alcarazanus*. These facts allow us to be sure that *I. guiraoanus* doesn't live in "Castellón" and that *I. alcarazanus* doesn't live in "Alcaraz" and that on the contrary *I. guiraoanus* lives in "Alcaraz" and *I. alcarazanus* lives in "Castellón". Therefore, in our opinion, somehow there must have been a mix-up with the labels of the original samples of *I. guiraoanus* and *I. alcarazanus*, both of which were collected by Guirao, previous to the description carried out by Rossmässler, who probably received the samples labelled incorrectly. In accordance with the recommendation 76.A.2 of the ICZN, we have corrected the declaration of the respective type localities: *I. guiraoanus*: "Sierra de Segura en Alcaraz" and *I. alcarazanus*: "Castellón".

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