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Description of two new species of *Prunum* Herrmannsen, 1852 (Gastropoda Marginellidae) from Callao, Peru

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ABSTRACT Two new Marginellidae species are described from Callao, Peru, and placed into the genus *Prunum* Herrmannsen, 1852, as *P. sigmoides* n. sp. and *P. lamellosum* n. sp. The reliability of the locality attributed to these new species is discussed, and the two species are considered to come with high probability from Western South America, due to their original features not matching *Prunum* morphs known from the rest of the Panamic Province, Caribbean or West Africa.

KEY WORDS Marginellidae; *Prunum*; Western South America; Peru; species radiation; endemism.

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INTRODUCTION

The marginelliform fauna from Western South America is commonly accepted as being very poor, about in the same way as documented about the fauna from the polar regions, which is deeply contrasting with the diversified marginelliform fauna known from the same tropical latitudes off Western Africa or off Western Australia, where a quite similar currents regime is prevailing.

The literature about the marginelliforms from Western South America is limited to the revision proposed by Coan & Roth (1966) about the whole West American marginelliforms known at that time, and to the more recent article of Roth (1978), who described two further centimetric species respectively from Western Colombia and from Ecuador. Since this last publication, no further marginelliform species was reported from Western South America, whereas about dozens new marginelliforms were described from Southeast parts of the Atlantic Ocean and of the Indian Ocean in the while.

The few marginelliform species positively known to range off Western South America are *Prunum curtum* (Sowerby, 1832) described from Iquique (Chile) and Païta (Peru); *Persicula imbricata* (Hinds, 1844) and *Gibberula minor* (C.B. Adams, 1852), the last two reported from La Libertad (Ecuador) by Coan & Roth (1966); *Prunum gorgonense* Roth, 1978 described from Isla Gorgona (Colombia); and *Prunum macleani* Roth, 1978 described from Cabo Pasado (Ecuador). The reported specimens of *Persicula imbricata* and of *Gibberula minor* were however not illustrated and they may be confused with allied species. On the other hand, Coan & Roth (1966) were suspecting that *Prunum sapotilla* (Hinds, 1844) and *Persicula phrygia* (Sowerby, 1846) may occur off Ecuador, and they validated the hypothesis that *Gibberula frumentum* (Sowerby, 1832), described from "St Elena and Salago, Ecuador", is in fact inhabiting

only the Southern Caribbean (principal records from St Vincent & Grenadines). This last point was discussed by Boyer (2004), who explained that the hypothesis of a *Gibberula* morph ranging from Ecuador to Lesser Antilles cannot be totally excluded, as such a latitudinal distribution may have persisted over time, especially if the closure of the Central America Seaway did not occur a very long time ago. This last question remains roughly disputed, with recent hypothesis of final closure ranging from 13–15 Ma BP (Montes et al., 2015) to 2.8 Ma BP (O'Dea et al., 2016) or even to 0.65 Ma BP (Brikiatis et al., 2023).

In other words, beyond the point of their specific identification and of their documented confirmation, only seven marginelliform species are tentatively reported for now from the coasts of Western South America, five of them being centimetric species. This situation must be related to the fact that in all marine regions, the semi-intensive samplings are evidencing that the millimetric marginelliform species are numerically dominating. So, the simple imbalance in the length size composition of the documented marginelliform fauna from Western South America suggests that the very limited number of marginelliform species recognized from this area is only the resul of a lack of prospecting (specially affirmed for millimetric species), and not from a real poverty of the fauna diversity. In this field like in other fields, the absence of evidence is not evidence of absence.

In this context of deep underestimation of the specific diversity at work, the discovery of further marginelliform species from Western South America deserves to be reported, even if not based on important material and consistent data. The present article is devoted to the description of two new *Prunum* species found in a lot labelled from "Callao, Peru".

MATERIAL AND METHODS

The material used consists in a lot of few marginelliform shells belonging to the collection of the first author and coming from an old collection, with the locality "Callao, Peru" written by hand with a steel pen on the back of a small cardboard box. Six marginelliform species (two *Prunum* species, three *Volvarina* species and one *Pachybathron* species) are represented in this lot.

The two *Prunum* species associated in this lot present very original shell morphologies, with no evident allied species in the Central Panamic, Caribbean and Northwest Africa areas, where the genus *Prunum* is prevailing. So, these two species are highly probably coming from the "white patch" constituted by Western South America, and the mention of "Callao, Peru" can be considered as plausible locality for them, even if allochthonous species have been added to their original lot in the next.

The two *Prunum* species are described as new taxa, the four last ones being very similar to species documented from other oceanographic Provinces are identified in a separate chapter.

ACRONYMS AND ABBREVIATIONS. MHNG: Muséum d'Histoire naturelle, Geneva, Switzerland. L: shell length.

RESULTS

Systematics

Familia MARGINELLIDAE J. Fleming, 1828
Genus *Prunum* Herrmannsen, 1852
Type species: *Voluta prunum* Gmelin, 1791, by monotypy.

Prunum sigmoides n. sp.
https://www.zoobank.org/57BBCB8F-D00B-4FBA-9780-7F6D31026B47

TYPE MATERIAL. PERU • 1 spm; Callao; L = 10.0 mm, Figs. 1–5; Holotype MHNG-MOLL-152421.

TYPE LOCALITY. Peru, Callao

DESCRIPTION. From the holotype (Figs. 1–5): Thick opaque shell, turbiniform-subcylindrical outline, small pointing spire with quite bulged convex whorls, tiny teat-like lenticular protoconch, quite hooked left side of the base, at the lower tip of the outer margin, labrum quite vertical, more thickened in its medium part, upper labrum strongly shouldered, outer margin thick and wide, sharply stepped from the mid-part of the spire to the dorsal periphery of the siphonal canal, "S" shaped in its upper side, with posterior part inserting on mid-spire, aperture wide, slightly narrowed in its medium part and more widened in its lower part,

Figures 1–5. *Prunum sigmoides* n. sp., holotype MHNG-MOLL-152421, L = 10.0 mm, "Callao, Peru".
Figures 6–9. *Prunum lamellosum* n. sp., holotype MHNG-MOLL-152422, L = 7.8 mm, "Callao, Peru".

base slightly beveled, four straight and oblique columellar plaits, the lower one being short and thin, the second one being much longer, thicker and closely packed with the first one, the third one about like the first one, and the fourth plait tiny any much spaced from the third one. General colour ground beige, with greyish shades around the upper part of the shell, dorsal side creamy-blonde, outer margin horny cream.

REMARKS. The attribution of *Prunum sigmoides* n. sp. to the genus *Prunum* is mostly based on its quite thick shell, its stout outline, and overal on its thick, wide and much stepped outer margin. No close relative is known from the Panamic Province or the Caribbean Sea. *Prunum sigmoides* n. sp. looks to be very original in its genus for the straight oblique shape and contrasted size of its columellar plaits, and for its wide and much stepped outer margin, with "S" shaped upper part and high insertion on the side of the spire.

DISTRIBUTION. Unknown.

ETYMOLOGY. From the "S" shaped upper labial margin.

Prunum lamellosum n. sp.
https://www.zoobank.org/759A0113-72BA-4B67-8FB1-4C55D178A0DC

Figure 10. *Prunum lamellosum* n. sp., holotype, MHNG, detail.

TYPE MATERIAL. PERU • 1 spm; Callao; L = 7.8 mm, Figs. 6–10; Holotype MHNG-MOLL-152422.

TYPE LOCALITY. Peru, Callao.

DESCRIPTION. From the holotype (Figs. 6–10): Light subtransparent shell, cylindrical outline, very short and petite pointing spire with quite convex whorls and concave sides, tiny teat-like bulging protoconch, thin labial lip, subvertical and angular shouldered, outer lip quite thick, wide and moderately stepped, aperture quite narrow in its upper part and moderately widened in its lower half part, wide base with quite notched outline, four very thin, long and flat columellar plaits, the three lower ones being subhorizontal and deeply arched, the upper plait being transversal and prolonged as stepped upper edge of the thickened columellar shield extending over the base of the ventral side. Ground colour vitreous whitish, labrum and basal shield milky white.

REMARKS. The attribution of *Prunum lamellosum* n. sp. to the genus *Prunum* is proposed with reserve, due to the light and subtransparent cylindrical shell and the very thin columellar plaits, which better match the usual definition of the genus *Volvarina* Hinds, 1844. The attribution to the genus *Prunum* is tentatively proposed for the wide and moderately stepped outer margin, for the callous shield extending over the base of the shell, and for the faintly notched base. As far as its shell features are concerned, *P. lamellosum* n. sp. looks as intergrading between *Prunum* and *Volvarina*, and it constitutes a concrete example of the poorly supported separation between these two genera. No close relative of *P. lamellosum* n. sp. is known from the Panamic Province or the Caribbean Sea. *Prunum lamellosum* looks to be very characterized by its thin, flat and arched subhorizontal three lower columellar plaits, shaped like lamellae, nails or scales (Fig. 10).

DISTRIBUTION. Unknown.

ETYMOLOGY. From the lamella-shaped columellar plaits.

Other examined material from Callao, Peru

The other four species from "Callao, Peru" are identified as follow:

Volvarina exilis (Gmelin, 1791), represented by one specimen: the shell morphology of our speci-

men (L = 9.6 mm) matches in all respects the species *Volvarina exilis* (Gmelin, 1791), described without locality but recognized from Senegal by Gofas (1989: 173). The original features of its thick and sinuous columellar plaits are perfectly identical to the morphology observed at large scale off Dakar (Senegal) in *V. exilis* by the first author. Furthermore, any similar plaits morphology is not documented from other places out of the northern West Africa region.

Volvarina aff. *avena* (Kiener, 1834), represented by one specimen: the slender suboval shell morphology of our specimen and the orange bands suggested on a beige colour ground are closely matching a series of Caribbean fusiform morphs commonly attributed to the Kiener's species *V. avena*. Any similar form is not known from Western America, including from Western Panama. The specific attribution of our specimen remains however reserved, as numerous species seem to belong to the *V. avena* species group, including various sibling species uneasy to recognize. The features of our specimen seem to match more closely that of the population from Isla de Aves (located 200 km west of Guadeloupe Island, Windward Antilles) described as *V. avesensis* Caballer, Espinosa et Ortea, 2013.

Volvarina aff. *lactea* (Kiener, 1841), represented by four specimens: the fusiform shell morphology and the deep white colour ground of our specimens are closely matching a series of Caribbean fusiform morphs commonly attributed to the Kiener's species *V. lactea*. Any similar form is not known from Western America, including from Western Panama. The specific attribution of our specimens remains however reserved, for two principal reasons: firstly because the identity of *V. lactea* itself was not clarified, the Kiener's species being described without locality and the features of the type material (MHNG) being attributable both to populations from Caribbean and to populations from Indian Ocean (Boyer, 2015: 30); secondly, because the Caribbean species group *V. lactea* looks to be itself very diversified, composed with evidence of numerous species waiting for a general revision.

Pachybathron cf. *cypraeoides* (C.B. Adams, 1851), represented by one specimen: the barrel shape of our specimen as well as the main details suggested, despite the worn state of the shell (depressed spire with teat-like protoconch, narrow equidistant aperture, faintly denticulated thick labrum, numerous lirations on the parietal side), are matching in the whole the morphology of the South Caribbean species *P. cypraeoides*, described from Jamaica but only reported since now from the ABC Islands (Wakefield et al., 2002: 70). Even if our shell is most probably coming from the ABC Islands, we cannot totally exclude the possibility that sibling populations poorly diverging from *P. cypraeoides* were conserved in some places off Western South America, even if such sibling populations disappeared from the northern coasts of South America mainland (see the discussion about *Gibberula frumentum* in the Introduction). As clue of a possible long-distance survival of such a poorly modified old lineage, we report the recent discovery of a *Pachybathron* species closely allied to *P. cypraeoides* in the shallow waters of Eastern Oman (under study by the first author).

Volvarina exilis being clearly restricted to the waters of Northwest Africa, and the two other *Volvarina* species as well as the *Pachybathron* species being clearly matching Caribbean species and having not documented relatives off West America, their belonging to the fauna from Western South America cannot be accepted in the present state, and these four morphs must be considered as allochthonous species accidentally introduced in a lot from Callao.

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