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The studies of the Ophiuroidea in the Mexican Pacific coast started during the nineteenth century and have prevailed through the time until today. Despite the effort, nomenclatural imprecisions still have pervaded over time, in addition there is a lack of an up to date species checklist and no large-scale distribution analysis of the taxa in the Mexican Pacific has been attempted. After carefully identifying and removing nomenclatural imprecisions regarding Ophiuroidea, we provide the first up to date checklist of brittle stars and a large-scale distribution analysis of the taxa in the Mexican Pacific, based on literature review. To date, 125 valid species of brittle stars have been recognized in the Mexican Pacific (107) and the Gulf of California (98); species belong to 2 orders, 16 families and 51 genera. The families with the highest number of species were Amphiuridae (37), Ophiacanthidae (18) and Ophiuridae (14). The zones with the highest number of species were the Gulf of California (57) and the Pacific sides of Baja California Sur (57) and Baja California (48), contrasting with the States of Chiapas (1), Colima (8) and Michoacán (9), with the lowest number of species. The species *Ophiothrix (Ophiothrix) spiculata, Ophiactis simplex, Ophiocoma aethiops* and *Ophiocoma alexandri* were the most widespread species in the Mexican Pacific. Compared to other countries in the Tropical Eastern Pacific, México is the one with the highest number of species so far. Regarding species distribution, MDS analysis suggests that the area is composed by two main groups and Chiapas without a clear relation to the former ones: 1) Gulf of California, Baja California, Baja California Sur and Marias Islands, 2) Oaxaca-Guerrero-Jalisco-Nayarit, Michoacán-Colima-Isabel Island and Revillagigedo Island. As such, the grouping corresponds to major biogeographic provinces recognized in the area. In addition, when vertical distribution of the species (shallow, deep, widespread) is included in the analysis, MDS indicates slightly differences among depths, but major distribution patterns pervade. After fixing nomenclatural imprecisions the current checklist still includes more taxa than previous accounts from the area, mainly as a result of a more extensive review. The scarce number of recorded species in Colima, Michoacán and Chiapas calls for a more intensive and widespread species prospection in the area.
Keywords: Brittle stars, bibliographic references, checklist.

Drilling Predation, an Ecological Tool Trough Time

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Predatory marine cassid gastropods use acid and the radula to drill into echinoid tests. Cassids in recent marine environments attack both regular and irregular echinoids leaving drillholes as characteristic

predation marks. Drilling patterns and drillhole morphologies can supply information concerning drilling behavior and intensity by analyzing prey selection, size and site selectivity as well as drilling frequencies in both Recent and fossil populations. The genus *Echinocyamus*, a minute clypeasteroid echinoid, is used for analysis since it is easy to collect, abundant in a various kinds of habitats, occurs in Recent as well as in the Cenozoic fossil record and can be well preserved due to interlocking plates and internal supports which connect the oral to the aboral test side. This analysis includes numerous specimens of *Echinocyamus pusillus* from Giglio Island (Mediterranean Sea, Italy). Samples are analyzed with respect to the drillhole morphology, drilling rates as well as size- and site selectivity. Results of this analysis are compared to data from fossil records of *Echinocyamus* from the Oligocene of northern Germany (Doberg), the Miocene of Malta and to recent materials from the Red Sea. The drillholes show morphologies that are highly affected by the surrounding stereom microstructures including tubercles and ambulacral pores. Drillhole walls are characterized by concave cross-section profiles that can be correlated to the stereom density of the echinoid test. The present data from Giglio Island show similar drilling frequencies compared to the data from Doberg, Malta and the Red Sea. The samples do not indicate any size selectivity of the predator. Data are indicative for high site selectivity for the aboral side of the test, especially in or near the petalodium.
Keywords: Drilling predation, echinoids, clypeasteroids, *Echinocyamus*, giglio.

Can morphology support new molecular phylogenies of Antedonidae (Crinoidea: Comatulida)?

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Antedonidae (Crinoidea: Comatulida) is the largest of extant crinoid families; it currently includes ~155 accepted species in 50 genera and accounts for ~23% of extant crinoid species (~29% of feather stars) and 27% of genera. Recent molecular phylogenies have returned the family as polyphyletic, with several clades scattered among non-antedonid sister groups. Traditional morphological characteristics are thus inadequate for reconstructing relationships among taxa. We are using SEM imaging in an effort to discover new diagnostic features that will support the new molecular data. Because the crinoid body is chiefly suspension-feeding apparatus and exhibits substantial morphological variations associated with environmental conditions, we are initially focusing on skeletal ossicles within the calyx, starting with the radial ossicles, as they are least likely to be directly affected by their hydrodynamic environment. Geometric morphometric analysis and landmark software will be used to systematically compare equivalent skeletal parts among antedonid and non-antedonid sister taxa to identify likely homologies and homoplasies. Preliminary SEM images show clear differences in radial morphologies, particularly muscle fossae, both between and within current subfamilies, *e.g.* tall, thin muscle fossae shared by members of Thysanometrinae differ from the shorter and thicker fossae of Perometrinae. Within the subfamilies, for example, muscle fossae in the thysanometrine *Thysanometra tenelloides* are separated by a flat ridge and