

## **Paleocommunity turnover in an Early Pliocene seamount from southeastern Spain**

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Seamounts are topographic elevations under the sea, regardless of their size and relief. They support rich living communities and are important biodiversity hotspots, but many of the fundamental ecological processes that maintain seamount communities remain poorly understood. In contrast to snapshot observations conducted on extant seamounts, fossil examples may provide the opportunity to assess how temporal changes in physico-chemical parameters relate to paleocommunity turnovers in these particular biotopes. Here we deal with an Early Pliocene (Zanclean) small seamount in southeastern Spain. This classic locality is extremely rich in fossil macroinvertebrates and was subject to studies of some taxonomic groups in the late seventies. However, the detailed stratigraphy is herein outlined for the first time. The overall feature is a shallowing upward succession about 35 m thick which overlies a Miocene volcanic ridge. The occurrence of the planktonic foraminifera *Globorotalia margaritae* and *G. punctulata* allow attribution to the MPI3 biozone of the Mediterranean Pliocene. We measured two sections that can be divided in a lower interval of fine-grained bryozoan-rich deposits and an upper interval of biocalcarene increasingly rich in rhodoliths upsection. The whole series is bioturbated, with *Thalassinoides* traces being more common upsection. Biofabrics comprise mostly densely-packed suites of disarticulated and fragmented shells of calcitic fauna (large oysters are often bioeroded by clionid sponges), suggesting relatively low sedimentation rates and reworking by storms (e.g., channelized shell-beds, tubular tempestites). The prevailing taxonomic groups are cheilostome bryozoans, oysters, brachiopods, pectinids, echinoderms, cirripedes and corals. The lower interval contains octocoral internodes (*Isididae*) (only recorded at the base of the section). Scleratinians like *Balanophylia*? decrease in abundance upsection. Bryozoans are extremely abundant and diverse, with remarkable bryoliths of *Celleporaria palmata*, *Turbicellepora coronopus*, and reteporiform colonies of *Reteporella* sp. in the less densely-packed beds. The cirripede *Creusia phryxa* is very common. Pectinid assemblages are dominated by *Hinnites crispus*, *H. ercolianus*, *Manupecten pesfelis*, *Mimachlamys varia* and *Crassadoma multistriata*. Oysters are represented by *Neopycnodonte* and large *Hytissa*. The upper part of the lower interval records clumps of *Neopycnodonte* sp. This is the Pliocene locality in Spain recording the highest diversity of brachiopods: *Novocrania anomala*, *Joania cordata*, *Megathiris detruncata*, *Megerlia truncata*, *Terebratulina retusa*, *Lacazella mediterranea*, *Aphelesia bipartita* and *Terebratula calabra*. The latter two species are more abundant in the middle part of the section, *Terebratula* forming pavements. Most common echinoids are *Stylocidaris*? sp., *Echinocyamus*, and *Arbacina*, while fragments of spatangoids like *Ova* and *Spatangus* are less common. Crinoid cirrals and ophiourid vertebrae are scarce. The upper interval commences with sparse rhodolith debris while at the very top complete rhodoliths are the dominant bioclasts together with pectinids. Common taxa in the lower interval decrease in abundance or disappear. Pectinids are replaced by *Pecten* spp. and rare *Gigantopecten latissimus*; *Aequipecten scabrellus* is most abundant in the middle part and *A. opercularis* dominates at the very top. Fragments of *Clypeaster* start to occur and *Ostrea* is increasingly common. Preliminary results indicate a decrease of diversity concomitant with a shallowing upward trend.