one valve counting for a half individual). For a further investigation of the ecological composition the gastropods and bivalves of the Banjung Ante fauna were assigned to six different feeding guilds. The percentage of each feeding guild is illustrated in terms of species numbers and abundance (number of individuals).
In terms of abundance the fauna is dominated by grazers and detritivores that make up 69%. This group includes various cerithiid and rissoid species, as well as the genus *Bothropoma*. The abundance of small, herbivorous gastropods seems characteristic for seagrass associated assemblages with many of them grazing on the microalgae growing on seagrass blades. Also present is the snail *Smaragdia* that appears to feed exclusively on leafs of seagrasses.
In terms of species numbers carnivores s.s. are the most common; they make up 36%. Another group of parasitic and browsing carnivores makes up an additional 24% of the species numbers. The herbivores/detritivores make up only about 25% of the fauna in species numbers. Although chemosymbiontic lucinids make up only 2% of the abundance, their presence indicates dysoxic settings in the seafloor.
Currently we are assembling data for modern and fossil seagrass faunas in order to compare to the Banjung Ante fauna. The latter has a very similar abundance/diversity composition as modern seagrass faunas found so far. The Banjung Ante fauna has a very dissimilar composition of Holocene soft bottom and coral associated mollusc faunas from the region. We intend to find data about faunas related to macroalgae in order to test whether seagrass faunas can be characterized on gross diversity and abundance of guilds.

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Miocene brachyuran crabs from southern Chilean islands

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Only very few works exist about the decapod fauna of the Miocene of Chile. Here we present new records based on material from southern Chilean islands. The reported decapod genera all belong to the infraorder Brachyura and come from Mocha Island (38°S), Chiloé Island (42°S) and Stokes Island (45°S). Mocha Island localities yielded specimens of *Metacarcinus* sp., *Rochinia* sp., *Trichopeltarion* sp., and possibly a new genus; the former two being the first records of the respective genera for Chile. For the already known decapod locality Cucao, on Chiloé Island, *Eriphia* sp. is added to the fauna. Specimens from Stokes Island are not sufficiently well determined yet. Chiloé and Stokes faunas are known to be of early Miocene age, while Mocha localities are supposed to be of an undetermined younger Miocene age. Specimens from Stokes Island constitute the southernmost record of Cenozoic Chilean decapod crabs. The biogeography of Miocene Chilean brachyurans will be reviewed and discussed.

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Where are all the fossil pennatulacean octocorals? The need for more research on modern sea pens

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Sea pens, or Pennatulacea, are highly specialised, unbranched, colonial anthozoan octocorals with a worldwide marine distribution. There are estimated to be around 200 extant sea pen species. They are largely composed of soft tissue, the only hard parts being the axial rod and sclerites, which are not present in all modern sea pens, but are the only material that can be used to compare fossil with recent sea pens. Since fossil sea pen axes are inconspicuous and not very well known, they are frequently overlooked or misidentified. Due to the meagre fossil record, which begins in the Late Cretaceous, or perhaps earlier, and due to the lack of research that has been done on modern sea pens, not much is known on the evolution and phylogenetic relationships within this octocoral group. To make conclusions on pennatulacean systematics and evolution, 20 modern sea pen species (23 specimens in total) were studied, representing 10 of the 14 valid pennatulacean families. Using field emission scanning electron microscopy (and x-ray computed tomography in part), photographs were made of the cross-section and microstructure of the axial rods, which are important systematic characteristics, considering that soft-part morphology cannot be applied on fossil specimens.
The cross-section and microstructure changes along the axial rod and during the life of a sea pen, which can make fossil species determination difficult. With this study of the hard-part morphology of recent pennatulaceans, conclusions on fossil sea pen specimens and on the overall systematics of recent and fossil pennatulaceans can be made. In addition, by comparing recent and fossil axial