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and North Atlantic for kelp (max regional richness: 32 species in California-Alaska) and in Australasia and central Indo-Pacific (max regional richness: 53 species in southern Australia) for fucoids. Despite regional differences, coldspots of richness coincided and were mainly found at higher latitudes and the Baltic Sea, where extreme conditions prevail. Our findings reveal the major environmental drivers shaping the distribution of marine forests and identify regions of high and low species richness, providing baseline estimates at global scales. We discuss the findings in light of current environmental conditions and long-term evolutionary processes.

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**NEW DEEPWATER SPECIES OF RED ALGAE GROWING IN RHODOLITH BEDS IN THE NW GULF OF MEXICO**

This talk will focus on recently collected new species of marine red algae growing on the surface of rhodoliths at 56-85m depth in the northwestern Gulf of Mexico. On the basis of comparative *rbc*L sequence analysis and developmental morphology, the new taxa being discussed belong in the genus *Waldoia* W.R.Taylor (Rhodomelaceae, Ceramiales), *Chondrymenia* Zanardini (Chondrymeniaceae, Gigartinales), *Anatheca* F.Schmitz (Solieriaceae, Gigartinales), and *Chrysymenia* J.Agardh (Rhodymeniaceae, Rhodymeniales). The phylogenetic position of each of the new species will be discussed. *Waldoia* sp. nov. is nested along with the generitype *W. antillana* W.R.Taylor 1962 from Tobago (B.W.I.) within a clade of species previously considered to belong in *Chondria*. *Waldoia* is here redefined to include a dozen *Chondria* species characterized by thalli that are either terete throughout, or at least partly terete and secondarily compressed to flattened, with acute or blunt branch apices, deciduous trichoblasts that originate from the central cells, and lack of cell wall thickenings. Two new species of *Chondrymenia* Zanardini, a former monospecific genus hitherto only reported from the Mediterranean Sea (*Chondrymenia lobata* (Menegheni) Zanardini 1860), are recognized fromoffshore Louisiana and Texas. The distribution of *Flahaultia tegetiformans* W.R.Taylor 1942, a former monospecific genus described from Tobago (B.W.I.), is here expanded to the Campeche Banks (SW Gulf of Mexico), Caribbean Panama, and Martinique (F.W.I.). *Flahaultia* is newly placed in the Chondrymeniaceae, and its relationship to *Chondrymenia* will be discussed.

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**COMPARATIVE GENOMICS OF SYMBIODINIACEAE AND SYMBIOSIS AS A DRIVER OF DIVERSIFICATION**

Dinoflagellates in the family Symbiodiniaceae are important photosynthetic symbionts associated with cnidarians (such as corals) and other reef organisms. Breakdown of the coral-dinoflagellate symbiosis due to environmental stress (*i.e.* coral bleaching) can lead to coral death and the potential collapse of reef