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Culture and Rehabilitation of Protective Anthozoans (Cnidaria)

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The class Anthozoa belonging to the phylum Cnidaria is the nearest ancestral taxon of metazoans and occupies an important position in the marine biodiversity. Approximately 6,000 species of anthozoans which occupy 2/3 of the phylum Cnidaria are being known. Among them madreporarians, as the largest group in Anthozoa with over 2,500 extant species, play a central role in the formation of bioherms (coral reefs). Highly adapted and diverse faunas of symbionts including polychaetes, bivalves, barnacles, zooxanthellae and other crustaceans are being associated with various anthozoan species. Since most of anthozoans usually live in the very clear waters and are important to the formation of fishing grounds, they are economically the very important taxon in the marine biodiversity. Therefore, trading of all coral species living in the world are being prohibited by the designation of CITES for conservation. The tropical and the subtropical invertebrates (45%) are being distributed together with the temperate ones, as the Cheju Island area is directly being affected by the Kuroshio Warm Current. 92 species (70%) out of 132 species in total of Korean anthozoans are being inhabited in the area, considering 66 species (50%) out of above 132 species are the endemic species being found in this area only. Particulary, the soft coral community is being found in the southern part of Cheju Island such as the shallow waters of Munsom and Beomsom. Approximately 20 soft coral species and other coral species are mainly being distributed downward 45m deep in the subtidal zones. However, Cheju Island's clean sea area is now suffering from a lot of marine pollution due to many aqua-farms and restaurants built in its coastal lines. Moreover, various marine animals and plants are being damaged directly by disorderly fishing and marine leisure-sports. While the undersea sight-seeing by the submarines has given a affecting feel to the tourists, the soft coral beds have been extremely being damaged within the limited area of Munsom since 1990. Especially, because of the development policy of Cheju Local Administration in 1999, it has impacted to accelerate constructing more port facilities at the costal lines. Therefore, among Korean anthozoans, since Korea Ministry of Environment designated 15 protective species as the Extinct, Crisis and Protective Species of Korea in 1997, they have been under proper protection by Natural Environmental Conservation Law from 1998 onwards. Thereafter, we started to perform the Ecological Survey on the Extinct, Crisis and Protective Species of Korea including 15 protective species of anthozoans sponsored by the Ministry lasting for 5 years. Moreover, since Korea Ministry of Culture and Tourism has declared four Natural Protected Zones in the Cheju Island area as Natural Monument No. 420-423 in 2000, thesoft coral beds and coral species are now being under protection by Cultural Properties Preservation Law. The submarine tourism company are being forced to do the regular monitoring for the permitted area of Munsom belonging to Natural Monument No. 420 and report to the headquarters of Ministry of Cultural and Tourism. We hope that Cheju Island area should be nominated as Biosphere Reserve of UNESCO for the proper protection of peculiar soft corals community at the temperate zone. Fortunately, the Culture of Protective Species of Anthozoans and Rehabilitation has been being investigated since 2002 as a part of Eco-Technopia 21 supported by the Korea Institute of Environmental Science and Technology (KIEST) for 10 years. The project being joined by one taxonomist and two marine ecologists is consisting of three major research groups: the method for propagation of protective corals, the monitoring and ecological analysis for population of corals as well as the analysis of coral community and transplantation.One of our common aims is to establish the technology for conservation of the protective corals through its culture and propagation. Another objective is to settle the technology for the rehabilitation of the destructive area of soft coral bed. For the purpose of its accomplishment, we will make use of advice from some foreign specialists and also plan to visit the foreign coral farms. We have got a lot of useful good results through the basic and applied biological studies of protective and dominant species during the first year. Our web-site of coral culture (http//:www.coral-env.net) produced for the communication between each research group has introduced the progress of our research. For conservation of the corals, we are going to educate the simple monitoring methods of coral community to the local NGO from the 2nd year of our research term. After the completion of our coral culture project, we are expecting the coral farming for the luxurious aquarium and the natural products and also the eco-tourism to the coral farm and the rehabilitated sites.