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## PG-9 A study of marine benthic diatoms of the Cape Maeda coast, Okinawajima

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Marine benthic diatoms are important primary producers that dominate the diversity of microphytobenthos. Studies on benthic diatoms from the coastal areas of Okinawa are limited. The Cape Maeda coast has been selected for this study because of its natural reef profile and easy accessibility from the University.

In order to study the benthic diatom flora, periodic samplings were carried out from November 2006 to January 2008. Isolation and cultivation were also carried out. Taxa were identified based on the plastid arrangement and shell morphology by LM and SEM according to previous literatures.

Sixty taxa belonging to twelve genera were identified, including twenty identified species. Other taxa were identified only at the generic level. The most dominant genera were *Bacillaria*, *Cylindrotheca*, *Cymatosira*, *Licmophora*, *Navicula* and *Nitzschia*. Dominant species were *Amphora delicatissima*, *Bacillaria paxillifer*, *Cylindrotheca* sp., *Licmophora gracilis*, *Navicula tripunctata* and *Nitzschia* spp. More than fifty diatoms were isolated and cultured but sixteen strains belonging to twelve genera were successfully established in cultures. These include *Amphora laevissima*, *Bacillaria paxillifer*, *Cocconeis* sp., *Entomoneis paludosa*, *Gyrosigma* sp., *Licmophora gracilis*, *Navicula tripunctata*, *Pleurosigma angulatum*, *Seminavis* sp., and an unidentified species of *Navicula* and three unidentified species of *Nitzschia*.

Some of the genera identified including *Amphora*, *Entomoneis*, *Cocconeis*, *Licmophora* and *Nitzschia* are referred to as cosmopolitan based on previous research. Benthic diatom cultivation studies are limited, restricting to shell morphology as the fundamental technique for identification. The present study, however, has successfully established sixteen strains in cultures. The unique characteristic among many, that differentiate the present strain of *Amphora laevissima* from those reported earlier, includes the presence of numerous discoid plastids. Other strains possessing unique characteristics shall also be discussed.

Benthic diatom diversity of the Cape Maeda coast is probable to be endemic and/or cosmopolitan compared with those of other tropical and subtropical areas, however, insufficient floristic data limits our comparisons. Molecular analyses to understand the phylogenetic position of strains in established cultures are required for future work.