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Seasonal changes in the species number and biomass of the chlorococcalean green algae in the downstream of the Kumgang River

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Seasonal changes in the populations of the chlorococcalean green algae of the Kumgang river was investigated at the two downstream stations from May, 1994 to June, 1996. A total of 98 species was identified, which was classified into 8 family and 33 genera. The number of species increased from spring to Autumn, but the least in Winter. The genera *Actinastrum*, *Ankistrodesmus*, *Dictyosphaerium*, *Pediastrum* and *Scenedesmus* were shown to be common during this study. The total biomass was low with below 1,000 individuals/ml in winter, but high with above 5,000 individuals/ml in the other seasons. The individual numbers of *Pediastrum duplex* and *Scenedesmus quadricauda* were constantly changed at the two stations with the season. Bimodal pattern of the biomass change was observed in 1995, while unstable in 1994, that seems to be a function of unstable weather of the year of 1994 and inflow of seawater before the closing of the water gate in the estuary dam.

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Changes on Growth and Reproduction of a Freshwater Cladoceran *Moina irrasa*

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Quantitative zooplankton samples were collected everyday during the period from May 10 -24, 1996 in the vicinity of Incheon City. *Moina irrasa* occurred from May 10 at temperature ranging between 18-33°C, pH ranged between 7.45-8.6. Its population density ranged from 319 to 1,857 indiv. · l⁻¹ and its proportion varied between 46 and 100% of total zooplankton abundance. Its body length (BL) and body width (BW) ranged between 0.98-1.68mm and 0.62-1.52mm, respectively and the fluctuation of BL coincided with that of BW. Mean fecundity in terms of the number of embryos per batch varied between 2.02-36.02 and the maximum was 75 embyos. Resting egg production occurred on May, 18. To clarify the relationship between growth and reproduction, BW/BL were measured. From the first occurrence till May, 18, the value of BW/BL showed over 0.7, and then decreased below 0.7. *M. irrasa* decreased its body width, mean fecundity, and BW/BL suggesting the decrease of their reproduction.