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Poster Session

PA-06

Diversity of unicellular green algae from Ny-Ålesund (Spitsbergen Island, Arctic)

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The unicellular green algae were collected from 10 sites of freshwater, marine and snow in Ny-Ålesund, Arctic region during the summer season (2 to 16 July), 2011. To understand the molecular and morphological diversity of unicellular green algae, we analyzed morphological data using light and transmission electron microscope (TEM) and molecular data. 45 strains were isolated and cultured in AF6 medium, and then representative 12 strains were selected based on the nuclear-encoded ITS sequences. Among 12 strains, the morphological studies were focused on diagnostic characters used in classical taxonomy, such as cell dimension, chloroplast number and shape with pyrenoids, eye spot, flagellum, and contractile vacuoles. In addition, four strains were investigated cell organelles under TEM. The molecular data was analyzed the nuclear-encoded SSU rDNA and ITS1, 5.8S, and ITS2 sequences using Bayesian and RAxML programs, including three Zygnemophycean, one Chlokybophycean, and one Charophycean species as outgroups. The results indicated that the unicellular green algae were resolved into major two orders, the Chlorellales and the Chlamydomonadales. The unicellular green algae from Arctic region were distributed in various taxonomic rank, such as two *Chlorella* and one *Pseudococcomyxa* in the Chlorellales and five *Chlamydomonas,* one *Tetrabaena* and three *Chlorococcum* species in the Chlamydomonadales.