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COVER

Giant bladder kelp, Macrocystis pyri-
fera. Marine plants and animals, as well
as other organisms that encounter wa-
ter stress, utilize a small number of
organic molecules as the dominant in-
tracellular osmotic agents ("osmo-
ytes"). Polyhydric alcohols, amino ac-
cids and their derivatives, urea, and
methylamines are the major osmolytes
in virtually all water-stressed species
except the halophilic bacteria. The se-
lective advantages of these organic os-
mosolyte systems include the establish-
ment of a cellular microenvironment
compatible with macromolecular struc-
ture and function. See page 1214. [Craig
Cary, Scripps Institution of
Oceanography, La Jolla, California
92037]