

# A B S T R A C T

Calcification in the calcareous alga Halimeda opuntia, a common tropical calcareous alga and important contributor to reef sediments, is investigated.

The cations in the algal dry matter exceed the anions by approximately 5 %. About 60 % of the cation excess can be accounted for and is due to Ca which is associated with the water insoluble organic matter and with water soluble polysaccharides of low molecular weight. The polysaccharides are highly branched, contain uronic acid and O-ester sulfate and exhibit pronounced complexing properties for Ca. The Ca-polysaccharide complex seems to exchange Ca with the seawater and with the algal skeleton. Possible positions of the Ca-polysaccharide complex in the pathway of Ca are discussed and it is shown that calcification in this alga is an active metabolic process with high Ca turnover and low Ca net accretion.

The beta emitter  $^{45}\text{Ca}$ , employed as a tracer, is assayed by means of liquid scintillation counting. The development of a new counting method is described and its merits are discussed.