# Environmental problems - chemical approaches



CONTENTS



### Cover

lodine has a complex chemistry in the atmosphere. It is involved in both the formation of new aerosol particles—which can affect climate—and ozone destruction. The Research Front explores these processes: pp. 243–303.

Cover image: the fronds of *Laminaria digitata*, Robin Hood's Bay, north-eastern England at low water. ©Michael D. Guiry www.algaebase.org.

### ESSAY

Seaweed, Iodine, New Particles and Atmospheric Chemistry—The Current State of Play *R. von Glasow* 243

### **BOOK REVIEW**

'Climate Change: Turning up the Heat', by A. B. Pittock *K. Smith* 337



Changes in coral reef health are currently only detected when a significant number of corals have died. As the lipid content of corals has been linked to growth, metabolism and reproduction, measuring lipid fractions might provide a useful index of coral health; see Saunders et al. (p. 331). (Photograph taken by David Blakeway, MScience.)

# **RESEARCH FRONT**

## **Iodine and Marine Aerosols**

# REVIEW

Coastal New Particle Formation: A Review of the Current State-Of-The-Art C. D. O'Dowd, T. Hoffmann	245
<b>RAPID COMMUNICATIONS</b> Direct Measurements of New-Particle Fluxes in the Coastal Environment <i>R. J. Flanagan, M. Geever, C. D. O'Dowd</i>	256
Quantification of Coastal New Ultra-Fine Particles Formation from <i>In situ</i> and Chamber Measurements during the BIOFLUX Campaign <i>K. Sellegri, Y. J. Yoon, S. G. Jennings, C. D. O'Dowd, L. Pirjola, S. Cautenet, H. Chen, T. Hoffmann</i>	260
Modelling Iodine Particle Formation and Growth from Seaweed in a Chamber L. Pirjola, C. D. O'Dowd, Y. J. Yoon, K. Sellegri	271
Iodine and Halocarbon Response of <i>Laminaria digitata</i> to Oxidative Stress and Links to Atmospheric New Particle Production <i>C. J. Palmer, T. L. Anders, L. J. Carpenter, F. C. Küpper, G. B. McFiggans</i>	282
Marine Organic Halide and Isoprene Emissions Near Mace Head, Ireland J. P. Greenberg, A. B. Guenther, A. Turnipseed	291
Marine Aerosol Iodine Chemistry: The Importance of Soluble Organic Iodine <i>A. R. Baker</i>	295
Formation Pathways and Composition of Iodine Oxide Ultra-Fine Particles <i>R. W. Saunders, J. M. C. Plane</i>	299
<b>RAPID COMMUNICATION</b> The Occurrence of Thio-Arsenosugars in Some Samples of Marine Algae J. Meier, N. Kienzl, W. Goessler, K. A. Francesconi	304
<b>RESEARCH PAPERS</b> Reflections on Aluminium: Some Thoughts on the Mesospheric Processing of Ablated Meteoric Al <sup>+</sup> <i>S. Petrie</i>	308
A Comparison of Copper Speciation Measurements with the Toxic Responses of Three Sensitive Freshwater Organisms S. C. Apte, G. E. Batley, K. C. Bowles, P. L. Brown, N. Creighton, L. T. Hales, R. V. Hyne, M. Julli, S. J. Markich, F. Pablo, N. J. Rogers, J. J. Stauber, K. Wilde	320
A Rapid Method for Determining Lipid Fraction Ratios of Hard Corals under Varying Sediment and Light Regimes S. M. Saunders, B. Radford, S. A. Bourke, Z. Thiele, T. Bech, J. Mardon	331
a and a second of the second o	

**EARLY ALERT** Sign-up at **www.publish.csiro.au/journals/env** for our electronic early alert and receive the next table of contents **weeks in advance** of the print version.