Editorial

Only recently, during the second half of the 20th century, did scientists discover that a large amount of the mechanical energy in the ocean lay in the relatively small-scale fluctuations rather than in the main ocean currents. As a result, the mixing of water masses and heat fluxes have had to be reconsidered. Ramon Margalef further envisioned complex interactions between turbulent flow, the dissolved chemical elements necessary for life, and phytoplankton life-forms adapted to thrive under certain conditions. Since then, experiments have shown a range of effects of flow fluctuations on the physiology and behaviour of aquatic organisms and on both autotrophic and heterotrophic processes. However, we still lack an understanding of the full role of turbulence in determining the dynamics of marine ecosystems.

Our oceans are still the final frontier for exploration on our planet. We continue to face the problem of undersampling the ocean, not only for chemical and biological data, but also for physical data, which hinders us from obtaining a more complete grasp of turbulence and its interactions with different oceanic and atmospheric processes. However, data are streaming in at an exponential rate (e.g. from autonomous profilers and satellite remote sensing), which will soon allow powerful analyses not only of the averaged physical, chemical and biological fields but also of the relationships between the variance in these fields. The featured article in this issue of *Scientia Marina* by Ballantyne, Schofield and 2010 Ramon Margalef Prize recipient Simon Levin, entitled *The emergence of regularity and variability in marine ecosystems: the combined role of physics, chemistry and biology*, proposes some general trends in the behaviour of variability that could be incorporated into models of present and future scenarios and should also serve to stir further research.

In this issue we also begin a section on biographies. In 2011, on the 60th anniversary of our home institute, the *Institut de Ciències del Mar* (Institute of Marine Sciences), formerly the *Instituto de Investigaciones Pesqueras* (Institute of Fisheries Research), we pay tribute to our own history by featuring short biographies of our past directors. We hope you will enjoy them. And of course, we invite you to take a bite at the shark papers and the other research articles in marine sciences.

Francesc Peters, Secretary and Associate Editor
Dolors Vaqué, Editor in Chief

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