



Newsletter - November 1997

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From the Executive

For many reasons 1998 appears to become a crucial year for the development of Diversitas and to adapt the objectives of MARS in assisting its implementation in Europe. After a period of slow growth of interest, Diversitas now quickly gains momentum and in a number of countries support from science-policy becomes evident. Especially encouraging is the renewed interest from the European Science Foundation and the Commission of the European Communities through its EMaPS (European Marine and Polar Sciences) board, the successor of the ECOPS initiative and its Grand Challenges.

Some recent initiatives on marine biodiversity at the level of the European Commission to which MARS contributes are reported in the Newsletter: this includes a concerted action coordinated by Mark Costelloe from Ireland and a TMR training course coordinated by Jean-Pierre Feral of Banyuls, France. The European Marine and Polar Sciences Board EmaPS has created a feasibility study group that will meet in Yerseke in

December 1997 to discuss the organisation of European research on marine biodiversity and at the MAST-EUROMAR (Marine Science and Technology Programme of the EU) days in May 1998 in Lisbon a special session will be devoted to the infrastructure required for Biodiversity Research. So things are really on the move in Europe.

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MARS and NAML meet at Biotechnology Conference in Sorrento

During the 4th International Biotechnology Conference in Sorrento representatives from MARS and NAML (National Association of Marine Laboratories) from the US, together with IABO met in order to discuss progress in linking the two associations.

The progress in the so-called Middelburg Initiative, the establishment of a world-wide network of marine stations in order to provide the basis for support of the DIVERSITAS programme was discussed and a statement was prepared that will be issued by the DIVERSITAS Executive Secretary Colleen Adam. More about this in the next newsletter.

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Conclusions from the Biodiversity Workshop in Sorrento, 26 September 1997

Biodiversity has been the subject of a great deal of discussion in recent years and has been extensively associated in people's minds with the richness of species or habitats, often with the charismatic species whose loss or depletion has caught public and political imagination. This Workshop provided a valuable counterbalance by the attention it paid to biodiversity manifest in molecular terms but operating at supraspecific, specific or infraspecific level.

Molecular methods are complementary to those of traditional taxonomy, but they should not replace it. They have a particular advantage in the light that they can throw on functional biodiversity and its genetic basis. They provide the descriptions necessary to understand the mechanisms of physiological adaptability and help to explain the development of behavioural patterns that determine feeding strategies, migration and many other aspects. They mark a biochemical rather than phenotypic path of evolution. In practical terms, one of their most valuable applications, to judge by the contributions to the Workshop, is in guiding the search for new natural pharmaceutical and nutritional products.

On their own, however, such methods also pose new questions. What is the nature of the multitude of new species that molecular distinctions seem to indicate? Are they really distinct species? What is the acid test applicable to molecular material equivalent to the reproductive isolation of species identified by traditional means? These scientific questions require to be addressed, if the fundamental purpose of extensive cataloguing of genome sequencing is to be widely accepted. The work on microalgae and barophilic bacteria reported at the Workshop point a way to achieving the complementary benefits of taxonomic and molecular methods.

It is no coincidence that the four papers dealing with biodiversity for management, conservation, and related purposes described the communities in traditional taxonomic

terms. Whatever their shortcomings, faunal and floral data do provide a consistent basis for assessment available to ecologists and environmental managers alike.

Given the enormous hunger for information on biodiversity, and the present-day vigorous assessment of research proposals, the long-term value of biological data, once obtained, is priceless. Not only must the data be stored, it must be known about and made available. The mechanism for this is Networking. Just such marine biological networks exist, in North America, the Caribbean, Europe, and the Pacific Rim, and projects are underway to develop effective storage and collaborative use of faunal and floral data. These require support and resources nationally and regionally.

Internationally, the DIVERSITAS Programme, sponsored by IUBS, SCOPE, UNESCO, ICSU, IGBP-GCTE and IUMS, can provide a focus for this collaboration, in accordance with its aim to foster innovations and partnerships between research institutions and universities of developed and developing countries. A Special Target Area of Research is Marine Biodiversity, where it has been recognised that major advances in understanding ecological processes in intertidal environments and coral reefs have come from a combination of descriptive observations and theory-based hypotheses. These advances need to be extended to other oceanic environments and integrated into the larger framework of oceanic models and patterns of natural physical and chemical variation. The ultimate goal is to understand and predict the functioning of marine ecosystems. Fred Grassle Jack Matthews

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EMaPS starts new marine biodiversity initiative

The European Marine and Polar Sciences Board is a joint organisation of the European Science Foundation ESF and the European Union that resulted from a series of discussions on the Great Challenges in marine research. Marine Biodiversity is now a priority research theme in EMaPS and a Feasibility Study will be made that will be prepared at a workshop at the Netherlands Institute of Ecology in Yerseke from 16-18 December 1997.

For more information contact Laurent d'Ozouville at ESF. E-mail: douzouville@esf.org

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Concepts and methods for studying marine biodiversity, from gene to ecosystem: Banyuls, France 3-18 March 1998. A Joint EU-Training and Mobility for Researchers Practical Training Course and Ecole Thématique du CNRS (France)

A two week practical training course on the concepts and methods for studying marine biodiversity, going from the gene to the ecosystem level, will be held from 3 to 18 March 1998 in the Observatoire Oceanologique in Banyuls, France. Director of the course is Jean-Pierre Feral. The course will survey major methodologies available for the acquisition, the treatment and the management of biodiversity data.

The main objective of this course is to bring together researchers from different European countries, using different theories and research tools to tackle biodiversity problems, and to encourage collaboration in order to build interdisciplinary programmes. The aim of the

course is not to cover in detail as many aspects as possible. Instead, it will aim to highlight important issues to permit both population ecologists and ecosystem ecologists to fully understand how they each pose the problems and answer the questions. It also aims to make clear that providing insight into marine biodiversity patterns and processes answers a public concern (consequences of fisheries, aquaculture, [del.] alien species, coastal management, nature conservation oil drilling, mining, dumping,...) and that there is a necessity to convey results to decision makers.

The course will be organised around co-ordinated lectures, demonstrations and hands-on sessions and will include the following topics:

- The legal framework of marine biodiversity
- The dimensions of biodiversity (size / space (local, regional, global) / time)
- Life history traits of organisms and biodiversity
- Ecosystem approach: functional aspects of marine diversity
- Population approach: intraspecific biodiversity
- Data acquisition (molecular tools, computer-assisted morphometry and identification) Uni- and multivariate data set analyses (new software: BioDiversity, ADE-4)
- Anthropocentric impact on marine biodiversity (impacts of fisheries, aquaculture)
- Data management and the policy of conveying biodiversity data to environmental decision makers.

Participants will be researchers, PhD students, research engineers from public and private companies (involved in the study of at least one of the aspects of biodiversity), with priority for young researchers aged 35 years or younger, from Europe, especially the countries around the Mediterranean and the French DOM's (Departments d'Outre Mer). The working language will be English (or/and French if the participants are fluent). Young scientists (aged 35 years or younger) may be eligible for full financial support (including travel and accommodation expenses) from the European Commission. CNRS researchers may be financed by the "Formation permanente" (continuing education). Registration fees (only) may be waived for participants from those parts of European countries that have "Objective One" status. MARS will sponsor by paying the registration fee for a candidate from one of its member institutes and one from Eastern European countries.

The number of participants is limited to 20 (1/3 for young researchers, 1/4 for CNRS scientists, given the involvement of this institution) Registration fee is 500 ECU.

Persons interested in the Course should send at least the four documents listed below BEFORE January 30th, 1998 to: Dr Jean-Pierre Feral Observatoire Oceanologique, BP. 44, F- 66651 Banyuls-sur-mer cedex, France tel +33 (0)4 68 88 73 18, fax +33 (0)4 68 88 73 83, E-mail feral@obs-banyuls.fr. The required documents are 1) the application form with a letter where applicants describe in a few lines their projects related to the subject area "Marine Biodiversity", 2) a detailed curriculum vitae including a list of their recent publications, 3) a supporting statement of their research supervisor, 4) the questionnaire on

training level in specific fields of research. Any complementary document they wish to include may also be sent.

More details and application forms may be obtained by visiting the Web page:

<http://www.obs-banyuls.fr>

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A Species Directory to facilitate marine biodiversity research and management

A concerted action coordinated by Mark Costelloe from Ireland will be funded by the MAST programme of the EU. Within two years (1998-1999) the intention is to produce a directory of marine species in Europe, linked with a bibliography of identification guides, register of taxonomic experts, and locations of collections of reference specimens, and an Information Pack on European marine biodiversity (based on this project's results). The Species Directory is novel in its geographic extent, range of taxa covered, and that it will use the state-of-the-art World Wide Web software for publication and networking. It will be drafted by experts from published literature and existing (but more limited) species lists, circulated to a wider range of experts for comments, revised and finally verified before publication as a book. The quality of the finished product, and its wide availability to end-users, are key elements of the project. Both the draft and final versions will be in the public domain and accessible through the World Wide Web and published as a book. It is anticipated that it will become a standard reference (and technological tool) for marine biodiversity training, research and management in Europe.

For more information: contact Mark Costelloe at mcostllo@tcd.ie

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Major new programme on sustainable use and conservation of marine living resources will start in the Netherlands early 1998.

A proposal for a national research programme on Sustainable use and conservation of marine living resources was granted 6 million Dutch guilders by NWO, the national Dutch Science Foundation. It is expected that the Dutch government will grant another 2 million guilders additionally. The proposal was developed by a group of marine biologists, maritime legal scientists and socio-economists from various Dutch universities and institutes.

The basic idea of the programme is that worldwide problems with respect to sustainable use and conservation of marine living resources are believed to stem from a) lack of understanding of essential ecological processes in the sea; b) deficiencies in the international legal regime for the sea, and c) human behaviour based on short-sighted self-interest. Four research themes will be investigated: (1) and (2) analysis of, respectively, the spatial and temporal scales of marine ecological processes in order to investigate the possible mismatch between the scales of marine ecological processes and those of human exploitation systems, (3) processes determining species diversity of marine organisms, and (4) design of better systems for the exploitation and conservation of marine living resources to ensure sustainability.

The programme will start in January 1998 and run for eight years. The programme committee will be chaired by prof. Wim Wolff of Groningen University.

Further information: W.J.Wolff@biol.rug.nl

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In Memoriam Gaetano Salvatore

Gaetano Salvatore, president of the Stazione Zoologica de Napoli, died on 25 June 1997 at the age of 65. As a member of the Executive Committee of MARS Gaetano has contributed significantly to the development of MARS. On his initiative the 1997 meeting on biodiversity was attached to what was his last great achievement, the organisation of the 4th International Biotechnology Conference in Naples. Elsewhere in the Newsletter a summary of that meeting and the biodiversity sessin that was held in Sorrento is given. The MARS community owes a great debt to Gaetano who has been one of its most ardent supporters in the Mediterranean.

See also the [hommage](#) by Dr. Lucio Cariello.

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Request for news items

All member institutes of MARS are encouraged to submit for the Newsletter. Three issues are scheduled for next year: for April 1998 (copy till 15 March), July 1988 (copy till 15 June) and November 1998 (copy till 15 October).

Send items preferably by e-mail to Carlo Heip at heip@cemo.nioo.knaw.nl

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