# THE ECDYSIAST

*Newsletter of the Crustacean Society*

**ECDYSIAST VOLUME 14, NUMBER 1** **MAY, ~~1994~~ 1995**

## MESSAGE FROM THE PRESIDENT

First, I would like to congratulate the new and returning members of the Crustacean Board on their election and re-election, respectively. Serving two years beginning 1 January 1995 are: Treasurer, Denton Belk; Secretary, Frank Barnwell; European Governor, Pierre Noël; North American Governor, Dorothy Skinner; and Indo-Pacific Governor, Diana Jones. And, I would very much like to thank Jack O'Brien, Jens Høeg, Nancy Rabelais, and Alastair Richardson for standing for election to these offices. As our Society continues to grow, I hope that each, and many more of the members, will allow themselves to stand for election. While handing out the thank-you's, Betty Wenner is to be congratulated for putting together a fine slate of candidates and taking care of the election duties. In the not-too-distant future she will be putting together the ballot for President-Elect, Program Officer, and the remaining governorships that are up for election later this year. So, if you'd like to be more involved in the operation of the Society, let her know.

Some of our members wanted to know whether there was any gender bias associated with the rate of rejection of manuscripts in JCB. Arthur Humes has diligently combed through all his records, and, for senior authors of manuscripts submitted for volumes 1-14, except where gender was not easily determinable (i.e., first names represented by initials only, gender of east Asian names unknown), he has produced the following table:

| | Male | Female | %Female |
|---|---|---|---|
| Authors of accepted papers | 1306 | 327 | 25.0 |
| Authors of rejected papers | 573 | 128 | 22.3 |
| Total papers submitted | 1879 | 455 | 24.2 |
| % rejected | 30.4 | 28.1 | |

For comparison, Arthur checked vol. 71 of the Canadian Journal of Zoology and found of the 252 papers published, the percentage of female authors was 16, slightly lower than that for JCB, but who knows whether significantly so. What is clear is that there are

far fewer papers being submitted by females than males, probably reflecting the gender distribution of the membership, but more than likely reflecting the gender distribution of our corner of the scientific world. I do note, however, that 4 of the 11 (36%) Board female and next year we will have for the first time a female President. Now, what is needed are more female carcinologists in faculty positions.

A reminder that we will be holding another summer meeting this year, in Ft. Pierce, Florida. There will not be a Business meeting in Florida, however. We will meet with ASZ in December in Washington D.C. where Fred Schram has organized a great barnacle gathering, and where I will turn over the mallet to Betty Wenner. So it seems more fitting to have a formal Board Meeting and the Business Meeting in December. I hope that everyone will endeavor to attend one or the other of these meetings.

With best regards, Les Watling, TCS President

## From the Program Officer: TCS-ASZ Meeting in Washington D.C. December 1995

The winter 1995 TCS meeting will be held in conjunction with the American Society of Zoologists (ASZ) in Washington, D.C. December 26-30, 1995. In addition to the regular sessions with submitted presentations and posters on Crustacea, there will be a Symposium "New Frontiers in Barnacle Biology." The Symposium and its resultant publication are being organized by Dr. Fred Schram, University of Amsterdam, and Dr. Jens Høeg, University of Copenhagen, as a Festschrift in honor of Professor William A. Newman, Scripps Institution of Oceanography. The program seeks to set a tone for the future development of cirripede biology and will feature speakers and analytical methods that are new to the field.

The meetings are being organized through the ASZ and further details, registration forms and calls for submissions will be mailed only to ASZ members. However, TCS members who do not belong to ASZ can contact either the ASZ Executive Office (401 N. Michigan Avenue, Chicago, Illinois 60611-4267, U.S.A.; phone: 312-527-6697, fax 6640) or the Program Office Bob Elner (Environment Canada, Canadian Wildlife Service, Pacific Wildlife Research Centre, RR#1, 5421 Robertson Road, Delta, British Columbia, V4K 3N2, Canada; 604-946-8546, fax 7022; email: usercrab@ubc.mtsg.ca) for further information.

Please note that the application deadline for including

symposia in the Washington, D.C. meeting has long passed, but members interested in convening TCS symposia at future meetings are encourage to contact the Program Officer, Bob Elner.

**TCS-ASZ Meeting in St. Louis, January 1995**

The winter TCS meeting was held in St. Louis, Missouri, Jan. 4-8, 1995, together with ASZ and associated societies. TCS representation was poor compared to previous years, with only 3 oral and 1 poster presentation. Due to the anticipated low attendance, there was no Society dinner nor Board meeting. Dr. Denton Belk organized a meeting of the "Inland Waters Crustacean Specialist Group of the Species Survival Commission IUCN-The World Conservation Union". Unfortunately, only one other person turned up (!). Nevertheless, as a result of interest aroused through publicity in the *Ecdysiast*, Denton is re-scheduling the meeting for the upcoming TCS-ASZ meeting in Washington D.C. Further details can be obtained directly from Denton (840 E. Mulberry Ave., San Antonio, Texas 78212-3194, USA; phone: 201-732-8809, fax 3943)

**Results of TCS Elections, Fall 1994**

Betty Wenner reports that a total of 228 ballots were received in the last election. The candidates elected were the following: **Treasurer**: Denton Belk; **Secretary**, Frank Barnwell; **European Governor**, Pierre Noël; **North American Governor**, Dorothy Skinner; **Indo-Pacific Governor**, Diana Jones. This was the first year that a competitive ballot was offered, thereby giving members a choice for most offices. The Society is grateful to those individuals who participated in the process.

The officers help guide the direction of the Society but they cannot do it alone. There are many jobs to do that will insure membership growth and financial stability. As members of TCS, you are encouraged to get involved in Society activities by keeping dues current, attending meetings, contributing to the newsletter, recruiting new members, nominating officers and voting. Your input is needed for the success of TCS.

A list of the TCS officers and Board of Governors is given on the following page:

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**International Symposium on Biology, Management, and Economics of Crabs From High Latitude Habitats**

This is the thirteenth in the Lowell Wakefield Fisheries symposia series, initiated by the Alaska Sea Grant College Program in 1982. The 3-day Symposium will take place in Anchorage, Alaska, October 11-13, 1995, and will bring together current knowledge on biology, management and economics of crabs from high latitude habitats. By building on the crab data already assembled through this symposium series, sponsors aim to better conserve the resources, strengthen the industry and provide accessible, healthful protein to consumers. More than 50 research papers have been accepted from Europe, Asia, Australia, North and South America. A proceedings containing all presented papers and discussion summary will be published by Alaska Sea Grant. For further information contact Brenda Baxter, Alaska Sea Grant College Program, P.O. Box 755040, Fairbanks, Alaska 99775-5040, USA (Phone: 907-474-6701; fax 6285).

**Report on North Pacific Symposium on Invertebrate Stock Assessment and Management**

This meeting was held March 6-10, 1995 in Nanaimo, British Columbia, Canada. Emphasis was on temperate, benthic species, and the Symposium focused on new, innovative evaluation of the implications and needs for changing management approaches and demands in invertebrate fishery science. Participants were from Canada, USA, Mexico, Chile, Argentina, Russia, Australia, New Zealand, Indonesia, Philippines, South Africa, Norway, U.K., and Italy.

Of the 55 papers presented, 19 were on crustaceans, including 9 crab, 2 American lobster, 5 rock lobster, 2 shrimp, and 1 f.w. crayfish presentation. The Symposium was structured around six sessions: Estimation of Abundance within Specified Areas, Spatial Distribution of Abundance and Implications, Dynamics of Harvested Stocks, Ecosystems, Population Modelling and Parameter Estimation, Invertebrate Fisheries Management, and Decision-making in Invertebrate Fisheries Management. Participants were a balanced mix of field and quantitative biologists, resource managers, Canadian First Nation fisheries biologists, and fishers.

Invertebrate fishery research approaches were shown to have changed significantly in many aspects since the last North Pacific Symposium was held in 1984. Research is now much more focused on improving and quantifying accuracy of biomass estimations, particularly on the problems presented by nearshore, shallow-water species. Metapopulation and ecosystem considerations are now the focus of many studies, and the spatial distributions of populations in relation to oceanographic features and other species are increasingly being considered.

Financial cutbacks in most governments have also influenced how research and management are conducted, and there is increasing participation by both aboriginal peoples and fisher organizations. This decentralization of fisheries, with non-government groups now often contributing substantially to funding and implementation of research and management programmes, is encouraging studies to be better defined and focused and to incorporate to a greater extent economic and social components. These trends seem likely to persist in the foreseeable future, and will probably continue to change invertebrate resources utilization substantially in many developed countries in the process. In this respect, invertebrate fisheries exploitation in developed countries, if it is to be sustainable, may have to adopt approaches already practiced in most third-world countries, namely, a higher level of local community participation and control.

Papers will be published in the Canadian Special Publications of Fisheries and Aquatic Sciences series, and it expected that the Proceedings will be available around December, 1996 (submitted by Dr. Glen Jamieson)

**1995 Association of Systematics Collections Annual Meeting at UC Berkeley June 30 to July 2**

The 1995 ASC Annual Meeting will be hosted jointly by the University of California, Berkeley, and the California Academy of Sciences, June 30 - July 2. The meeting will feature a workshop on "Natural History Collections on the Information Superhighway." Partnerships among systematics collections of various kinds, and state and federal agencies will be the topic of another session. Finally, ASC members and friends will discuss ASC's strategic planning initiative, in light of these partnerships.

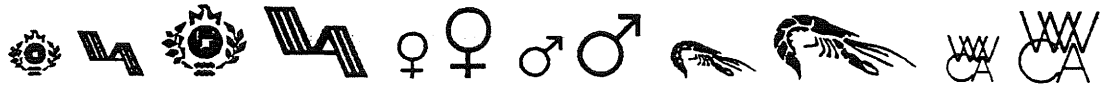
Representatives of NSF, the National Biological Service, and EPA have been invited to talk about government partnerships and information superhighway issues. Speakers will address efforts to create a National Biodiversity Information Infrastructure or Center for Biodiversity Information, and the role of systematics databases therein. A representative of CONABIO, Mexico's biodiversity center, has also been invited. Community-wide projects to develop data networks including SMASCH (California botanical database), NATURENET (a consortium of large, freestanding US museums), the North American fish database, and IOPI, an international botanical database, will be discussed. For registration and hotel information, contact: ASC, 730 11th St., NW, Second Floor, Washington, D.C. 20001-4521, 202-347-2850, fax: 0072.

**Request for Biosystematic Literature**

The Association of Systematics Collections (ASC) is embarking on a second round of obtaining biosystematic literature for the Biodiversity Information Exchange with Cuba Project. This time, literature acquired will be distributed to institutions outside of Havana. In trying to build biodiversity information resources (including marine biodiversity), Cuban research institutions have a great need for current and back issues of the *Journal of Crustacean Biology*, and other ecological and biosystematic literature. To donate and for more information, please contact Elizabeth Hathway, ASC, 730 11th St., NW, Second Floor, Washington, D.C. 20001-4521, 202-347-2850, fax: 0072.

**Logo Type Fonts**

Ray Manning informs us of a firm which can make type scalable fonts for any logo. Example of logos are given below:



A B C D F G M N S T W X

Contact Gary Russel, Digital Graphics Design, 3803 H St., Sacramento, CA; voice mail or fax: 916-737-2216

**Report on Polynesian Decapods: Free Copies Available**

J. Poupin, SMSRB, Muséum National d'Histoire Naturelle, Laboratoire de Zoologie des Arthropodes, informs the TCS membership that free copies of "Quelques Crustacés Décapodes Communs de Polynésie française" are available. It is a taxonomic work on the common decapods of French Polynesia, with excellent illustrations and color plates. Write J. Poupin for a copy at: SMSRB (c/o J. Poupin), B.P. 208, 91311 Montlhéry Cedex, France.

**E-Mail Addresses for TCS Directory**

Betty Wenner is in the process of compiling e-mail addresses for TCS members. Please send your e-mail address (along with your name, institutional address, phone, fax) to Betty at: wennere@cofc.edu (internet).

**Contributions to the *Ecdysiast***

We depend on TCS members and interested non-members for supplying information and news used in the newsletter. Please keep those contributions coming. Submissions for the spring newsletter (sent out with May JCB) should be in by the end of March, those for the fall newsletter (sent out with the November JCB) should be in by the end of September. It is very helpful if formal announcements, lengthy news items, long requests etc. are submitted in camera-ready copy by mail, but information for the TCS membership submitted in any form will be welcome (Ray Bauer, *Ecdysiast* Editor).

ASSORTED ANNOUNCEMENTS FROM LUMCON:

The Louisiana Universities Marine Consortium (LUMCON) offers summer field courses and directed research projects for undergraduate and graduate credit during its 1995 Summer Program in Marine Science. Courses include: *Introduction to Marine Zoology* (4 weeks); *Mariculture* (4 weeks); *Marine Ecology* (4 weeks); *Marine Invertebrate Zoology* (4 weeks); *Marine Vertebrate Zoology* (4 weeks); *Marine Science for Teachers* (3 weeks); *Marine Vertebrate Zoology* (4 weeks); *Wetland Biogeochemistry* (1 week); *Wetland Loss, Restoration, and Management* (1 weeks); *Wetland Vegetation* (2 weeks); and *Wetland Wildlife Management* (1 week). Room and board fees are $125/week, and limited scholarships are available to qualified applicants to help defray these costs. Inquiries and requests for applications for admission and scholarships should be directed to Dr. John H. Caruso, LUMCON Marine Center, 8124 Highway 56, Chauvin, LA 70344-2124; Receptionist: 504-851-2800; fax: 851-2874; E-mail: jcaruso@smtpgw.lumcon.edu

The Louisiana Universities Marine Consortium (LUMCON) offers an internship program in marine science, education, and technology. This program will afford students the opportunity to gain experience for university credit in a discipline of their choice by working closely with research faculty, senior academic staff, or other appropriate staff members at the Marine Center for Research and Education in Cocodrie, Louisiana. Projects are arranged by consultation between the student, the University Education Coordinator, and the supervising faculty or staff member. They will be designed to afford maximum flexibility in order to fit the needs and schedules of students and advisors. Room and board fees are $125/week, and limited scholarships are available to qualified applicants to help defray these costs. Inquiries and requests for applications for admission and scholarships should be directed to Dr. John H. Caruso, University Education Coordinator, LUMCON Marine Center, 8124 Highway 56, Chauvin, LA 70344-2124; 504-851-2800; fax: 851-2874; E-mail: jcaruso@smtpgw.lumcon.edu

The Louisiana Universities Marine Consortium (LUMCON) Foundation, Inc. announces the availability of three graduate student research grants. Each award consists of up to $2,000 to defray expenses of a research program as part of an M.S. or Ph.D. program. The award is to be used for research in the marine sciences which should be interactive with a LUMCON program or in some way make significant use of the LUMCON facilities. Application is open to outstanding graduate students enrolled in any university. Due date is April 1 for start of funding in June or September for a one-year period. For additional details and application forms, contact Dr. Nancy N. Rabalais, Louisiana Universities Marine Consortium, 8124 Hwy. 56, Chauvin, LA 70344; Receptionist: 504-851-2800; fax: 851-2874; E-mail: nrabalais@smtpgw.lumcon.edu

## Volume 12, Résultats des Campagnes Musorstom

*Résultats des Campagnes MUSORSTOM* publishes papers and monographs on the deep-sea fauna of the tropical Indo-Pacific. In addition to the New Caledonian region, which is the focus of the series, volume 12 deals with other islands and island groups in the tropics, from Indonesia and the Philippines to Polynesia.

The 12 contributed papers range from observations on benthic ecology to reports on Xenophyophora, Bryozoa and Crustacea. As with earlier volumes, the present one contains numerous new taxonomical and biogeographical data. One new subfamily, 4 new genera and 98 new species are described. Novel discoveries include a baffling radiation of 56 new species of galatheids and the occurence of ditaxiporine bryozoans, a group which first appeared in the Palaeocene and is now represented by only two living species, both found in deep water south of New Caledonia. Five colour plates provide *in situ* illustrations of the bottom fauna viewed by submersible, down to depths of 2100 m.

The MUSORSTOM series is a joint program of the Muséum national d'Histoire naturelle and the Institut Français de Recherche Scientifique pour le Développement en Coopération (ORSTOM).

ÉDITIONS
DU MUSÉUM
57, RUE CUVIER
75005 PARIS
ISBN 2-85653-212-8
ISSN 1243-4442

1. **La campagne CALSUB sur les pentes bathyales de la Nouvelle-Calédonie** (en anglais) ..... Michel ROUX
2. **Protozoa, Xenophyophorea Granuloreticulosa : *Psammina zonaria* sp. nov. du Pacifique ouest Considérations sur quelques aspects de la croissance des xenophyophores** (en anglais) ..... Ole Secher TENDAL
3. **Bryozoa : Espèces vivantes et fossiles des sous-familles catenicellides : Ditaxiporinae Stach et Vasignyellinae nov.** (en anglais) ..... Dennis P. GORDON & Giampetro BRAGA
4. **Cirripedia Thoracica : Verrucomorpha de Nouvelle-Calédonie, d'Indonésie et des îles Wallis et Futuna** (en anglais) ..... John S. BUCKERIDGE
5. **Crustacea Amphipoda : Lysianassoides du Sud-Ouest Pacifique tropical** (en anglais) ..... James K. LOWRY & Helen E. STODDART
6. **Crustacea Isopoda : Bopyridae des collections MUSORSTOM récoltés dans l'Indo-Pacifique tropical. I. Sous-familles Pseudioninae (en partie), Argeiinae, Orbioninae, Athelginae et Entophilinae** (en anglais) ..... John C. MARKHAM
7. **Crustacea Decapoda : Les *Metapenaeopsis* indo-ouest-pacifiques avec un appareil stridulant (Penaeidae)** ..... Alain CROSNIER
8. **Crustacea Decapoda : Observations complémentaires sur les *Metapenaeopsis* indo-ouest-pacifiques sans appareil stridulant (Penaeidae). Description de deux espèces nouvelles** ..... Alain CROSNIER
9. **Crustacea Decapoda : Penaeoidea récoltés lors de la campagne KARUBAR en Indonésie** ..... Alain CROSNIER
10. **Crustacea Decapoda : Penaeoidea, à l'exclusion des Sicyoniidae, récoltés dans la zone économique des îles Wallis et Futuna, lors de la campagne MUSORSTOM 7** ..... Alain CROSNIER
11. **Crustacea Decapoda : Pagures d'eau profonde (Parapaguridae) de la Polynésie française. Description de quatre espèces nouvelles** (en anglais) ..... Rafael LEMAITRE
12. **Crustacea Decapoda : Le genre *Munida* Leach, 1820 (Galatheidae) dans les eaux néo-calédoniennes et avoisinantes. Description de 56 espèces nouvelles** (en anglais) ..... Enrique MACPHERSON

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# *NEWS FROM THE IWCSG*

**Inland Water Crustacean Specialist Group, Species Survival Commission of IUCN**

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## REPORT ON JANUARY 1995 WORKSHOP IN ST. LOUIS

Only one person came to the meeting room. However, several people responded to the announcement and have become members of the specialist group. We will try again by scheduling a workshop during the December 1995 meeting of TCS with ASZ in Washington D.C.

## GEORGIA, U.S.A. GROUP PETITIONS FOR PROTECTION OF ANOSTRACAN

Larry Winslett and John Geiger representing Friends of Georgia, the Friends of Stone Mountain Park, and the Southern Appalachian Biodiversity Project [P.O. Box 3097, Lithonia, Georgia 30058; phone 404-469-6435] have formally requested the United States Fish and Wildlife Service to exercise its authority under the Endangered Species Act to emergency list the Stone Mountain fairy shrimp, *Branchinella lithaca* (Creaser, 1940), and to designate Stone Mountain in Dekalb County, Georgia which is the only know habitat of the species as Critical Habitat. They note that planning for construction near the pools on top of Stone Mountain has not taken protection of these ephemeral wetlands into account. Potential threats include fuel leaking from machinery, lead containing paint on buildings to be demolished and replaced, and crushing of resting eggs by vehicles driving through pools or parking in pools. The petition was delivered to David Flemming, Chief of the Division of Endangered Species, U.S. Fish and Wildlife, 75 Spring Street, S.W., Atlanta, Georgia 30303.

## SOCORRO ISOPOD DISCUSSED IN *SCIENCE*

The first crustacean to be listed as endangered under the United States Endangered Species Act is given informative coverage in a report titled "Is Endangered Species Act in Danger?" (*Science* 267:1256-1258; 3 March 1995). It seems only the existence of a captive population at the University of New Mexico saved the species from extinction in 1988 when a tree root burst the pipe feeding water into their horse trough habitat drying and killing the last noncaptive population. *Thermosphaeroma thermophilum* now lives in a zoo-like setting of concrete tanks near the town which uses most of the water from a spring that use to be their natural habitat.

## STRATEGIES FOR CONSERVATION OF FREE-LIVING CONTINENTAL COPEPODS

**Janet W. Reid**, Research Associate, Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.

Hardly any aquatic or even humid continental habitat can be examined without finding copepods. Because of their success in terms both of species and numbers of individuals, these small crustaceans are ecologically important in most wet systems. Maintenance of natural copepod species richness should be a consideration in conservation of aquatic faunas.

As might be expected in a diverse group, patterns of copepod distribution are far from uniform. In general, distributional patterns depend on the life habit — planktonic vs. benthic vs. hypogean (interstitial or cavernicolous), degree of vagility, and adaptability of a group or species.

The three major continental copepod orders differ in these qualities. Most **calanoid** species are planktonic and vagile but require a relatively narrow set of environmental conditions. Most are confined to one continent and to restricted types of waters, although their geographical range may be extensive. Species of large ponds and lakes may be found over half a continent (e.g. Patalas 1990, Wilson & Yeatman 1959). However calanoids of ephemeral waters (such as vernal pools) not only are spatially limited but tend to have undergone extensive speciation and some species may be known from only one or a few counties (ex. members of the genus *Hesperodiaptomus*, see Wilson 1953). **Cyclopoids** as a group have been most successful in invading continental habitats. The better-known planktonic and epibenthic species are not only vagile but adaptable and may range over more than one continent and a wide range of conditions (Wilson & Yeatman 1959). Even some of the more substrate-associated species have been reported from large areas (as some *Speocyclops*, see Einsle 1993) or more than one continent (as *Diacyclops hypnicola*, see Galassi 1991). But the general impression of homogeneity

among cyclopoids is negated by the existence of many narrowly endemic species, especially among the hypogean ones. **Harpacticoids** include the mainly epigean benthic canthocamptids and the mainly hypogean/interstitial benthic parastenocaridids. Canthocamptids may be adaptable and relatively vagile such as *Attheyella illinoisensis*, which ranges over most of North America; or comparatively limited in range and habitat, such as *Attheyella spinipes*, known from a few springs in Washington, D.C. and Maryland, U.S.A. The parastenocaridids exhibit the greatest degree of habitat and geographical limitation, and of speciation.

Patterns of copepod distribution can be found to support every conservation strategy. Certainly, habitat preservation should be a significant component. Yet, concentration on particular geographical areas is equally important. In the Americas, benthic cyclopoids and harpacticoids seem to be about as species-rich in temperate as in tropical regions (Reid 1994). However, the pattern of endemicity differs latitudinally: although cyclopoid and harpacticoid faunas are broadly similar over much of North America, the degree of endemism is significantly greater in tropical and temperate South America (Reid 1994). In South America, the same habitat tends to harbor different species from state to state or even from Andean valley to valley. In such a situation, to maximize diversity it is obviously necessary to plan a series of refuges containing similar habitats, even though individual sites may be small.

Particularly species-rich areas include those where faunas of different climates overlap, such as central Canada (Patalas 1990), southern USA (Reid & Marten 1995), and Lake Chad during wet climatic phases (Dumont & Verheye 1984). For some groups, diversity "hot spots" occur in particular geographical situations, such as cool wet montane southeast Alaska and central Chile for canthocamptids (Reid 1994); or in areas of isolation and high speciation, such as Cuba for the canthocamptid genus *Elaphoidella* (Reid 1990).

It should be clear from the forgoing that effective estimation of the nature of a local copepod fauna involves four-dimensional investigations of benthic, subterranean and semiterrestrial habitats, sampled ideally over several years.

This short discussion illustrates some of the complexities of conservation planning for incompletely known aquatic faunas. Primarily, planners should not fall into the error of conceiving of large taxa such as "copepods" as a homogeneous group, all of which will respond similarly to comparable strategies. Understanding of spatial and ecological distribution of aquatic invertebrates is hardly beginning to be developed, but some knowledge will be essential for efficient conservation planning.

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**Please send your comments and contributions**

# THE BIOLOGY OF CRUSTACEA

**A conference to celebrate and acknowledge the contributions of Professor Ernest Naylor, Lloyd Roberts Professor of Marine Zoology, School of Ocean Sciences, University of Wales Bangor**

**A joint meeting of the**

MARINE BIOLOGICAL ASSOCIATION OF THE UNITED KINGDOM

THE SOCIETY FOR EXPERIMENTAL BIOLOGY

and the

ESTUARINE AND COASTAL SCIENCES ASSOCIATION

**UNIVERSITY OF PLYMOUTH 1-3 APRIL 1996**

*Conference Topics*

Behaviour (including neurobiology and rhythms)
Genetics and Biochemistry
Ecology and Taxonomy
Physiology (including respiration and osmoregulation)

The meeting Abstracts will be published in the ECSA Bulletin and papers may be submitted for collective publication in a special issue of one of the Journals of the sponsoring Associations.

*To offer a paper and to receive the next circular, please contact Dr. Malcolm B. Jones, Department of Biological Sciences, University of Plymouth, Drake Circus, Plymouth PL4 8AA by 1st June 1995.*

telephone: 44-0-752-232900

Society for Experimental Biology

# THE BIOLOGY OF CRUSTACEA

University of Plymouth

1st-3rd April, 1996

Society for Experimental Biology

*A conference to celebrate and acknowledge the contributions of Professor Ernest Naylor, Lloyd Roberts Professor of Marine Zoology, School of Ocean Sciences, University of Wales Bangor*

## NOTICE OF INTENTION TO ATTEND

Please return if you wish to offer a paper or to receive the next circular (which will provide details for booking accommodation and meals).

GENERAL INFORMATION

**Surname:** .....

**First name(s):** .....

**Title (please circle): (Prof./Mr./Ms/Mrs./Miss)**

**Organization (to appear on conference badge):** .....

.....

**Full postal address:** .....

.....

**FAX:** ..... **Telephone:** .....

**Name(s) of accompanying person(s)**

**1** ..... **2** .....

..... .....

**Please tick the appropriate boxes:**

I wish to offer an oral presentation ☐

I wish to offer a poster presentation ☐

I wish to offer an oral and a poster presentation ☐

If my contribution is not accepted for oral presentation, I would offer a poster ☐

6th COLLOQUIUM CRUSTACEA DECAPODA MEDITERRANEA: (sent in by Bob Elner)

Dear Colleague,

We are very pleased to announce that, following the instigation of some of the previous organizers, we have decided to hold the 6th Colloquium on Crustacea Decapoda Mediterranea (CCDM) in Florence, in **September 1996.**

**SCIENTIFIC PROGRAMME.** Traditionally the CCDM is joined by anyone working on Mediterannean decapods. We wish to offer the maximum space to scientists involved in systematics, paleontology, phylogeny, biogeography, ecology, ethology, reproduction and growth, fisheries, culture, and related topics. Papers on general aspects of some of the above topics will be more than welcome even if not strictly dealing with Mediterranean species. Also welcome will be papers on ecology-related physiological and biochemical problems.

**LOCALITY.** Florence in September will offer you a pleasant climate and if you already know everything about Michelangelo, Botticelli or Giotto, you may visit the Etruscan Museum, the Medici Chapels, or else witness the grape harvest around Chianti and pay a visit to the small medieval towns such as S. Gimignano, Volterra and others.

**TIME SCHEDULE.** The meeting will start on September 12th. The number of days (3-4) will depend on the number of participants and will be communicated soon.

**PAPER PRESENTATION.** Oral communications and posters will both be accepted. In the case of many participants, parallel oral sessions may be considered. Participants will be asked to send an abstract in advance (on diskette) and a preprint volume will be available at the registration desk.

**PUBLICATIONS.** At least two journals have declared their interest in publishing the CCDM results but ...in both cases the cost is is quite high. We have already started to look for sponsors and financial support. Further details on this point will be communicated later.

**DEADLINE.** If you think that you will (or are likely to) participate in the CCDM, let us know please by the end of June 1995 (filling the enclosed form).

**REGISTRATION.** Registration fees will be 120 US$. Do not send anything now. You will receive a form together with the second announcement (around November 1995). Depending on the amount of financial support that we may find, reduced fees will be applied in certain cases.

Best wishes and we hope to meet you soon in Florence,

Francesca Gherardi
Stefano Cannicci
Marco Vannini

*6° Colloquium Crustacea Decapoda Mediterranea* Museo di Zoologia "La Specola"
Address: via Romana n. 17, I-50125, Firenze, Italy Tel. +39-55-222451
Fax: +39-55-225325 e-mail: DIBAGLI1@IDG.CNR.IT.

Colloquium
Crustacea
Decapoda
Mediterranea

*Florence, 12-15 September 1996*

NAME .....

ADDRESS .....

.....

.....

PHONE .....

FAX .....

E-MAIL .....

I WISH TO PRESENT AN ORAL PAPER / POSTER (*)

PROVISIONAL TITLE .....

.....

.....

DEALING WITH (**)

- ☐ biogeography
- ☐ aquaculture
- ☐ ecology
- ☐ ethology
- ☐ fisheries
- ☐ growth
- ☐ paleontology
- ☐ phylogeny
- ☐ population structure
- ☐ reproductive biology
- ☐ systematics

(*) delete the option you do not like

(**) you may indicate more than one option

DATE

.....

SIGNATURE

.....

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**Fax:** +39-55-225325 **e-mail:** DIBAGEFI@IDG.CNR.IT.