



IRGC NEWS



INTERNATIONAL RESEARCH GROUP ON CHAROPHYTES

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17

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CONTENTS

Editorial.....	1	Forthcoming meetings.....	7
New IRGC members.....	2	News from the regional groups.....	9
New book: Treatise volume on Charophytes.....	2	Charophyte list server.....	10
History: 30 years after L Grambast.....	3	Charophytes on the web.....	10
History: Polish research on extant charophytes.....	4	New addresses.....	10
Proceedings of the IRGC-Symposium, Robertson 2004.....	6	News from individuals.....	11
Past meetings.....	6	E-mail addresses of IRGC members.....	11
		Membership fees.....	12

EDITORIAL

I am pleased to introduce this issue describing the various activities of IRGC members during 2005. Our community of charophytologists now benefits from two network facilities, hosted in Australia and in the USA respectively, thus providing a great opportunity for rapid communication.

On behalf of the whole membership, I express our thanks to Adriana García and the Faculty of Sciences at the University of Wollongong for their invaluable support to IRGC and providing the assistance of a professional designer to shape the new IRGC-webpage. I'd like also to thank Robin Scribailo and Mrs Brenda David, the webmaster at Purdue University, for creating <charophyte-L> as a discussion forum for any topic related to Charophytes. I invite all members to make use of this forum to exchange ideas, questions, and make relevant announcements (see p. 9). I also draw your attention to the Charophyte volume of the *Treatise on Invertebrate Paleontology* (see book review on p. 2). Eighty-six genera, grouped in twelve families, are presented, all with diagnosis and illustrations of their type-species as given by the original authors. This basic compendium will prove essential for any palaeo-charophytologist.

Amongst the various forthcoming meetings, the 14th Meeting of the GEC to be held in Barcelona, Spain in October 2006 (see p. 8), is an excellent opportunity to present your research results between the 2004 IRGC-Symposium (Robertson) and the 2008 IRGC-Symposium (Germany).

Ingeborg Soulié-Märsche

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Eduardo A. Musacchio (South- and Central America)

The task of the Regional Correspondents are to collect relevant information about meetings, books, individuals etc. from their area and to forward it to the IRGC Secretary (see also 'Regional Groups of the IRGC' in this issue).

NEW IRGC MEMBERS

We welcome colleagues who have joined our society as new members. They are Piotr Skurzynski from the University of Gdansk, Poland; Saso Trajanovski and Sonja Trajanovska from the Hydrobiological Institute, Ohrid, Republic of Macedonia, and Margarete Kalin from Toronto, Canada.

NEW BOOK

Treatise on Invertebrate Paleontology Part B Protocista 1 Volume 1: Charophyta (2005). Edited by R.L. Kaesler with M. Feist coordinating author and the participation of Grambast-Fessard,

N., Guerlesquin, M., Karol, K., Lu, H., McCourt, R. M., Wang, Q. and Zang, S., 170 pp. Printed under the auspices of The Geological Society of America and The University of Kansas. The Treatise volume on Charophytes can be purchased from:

Geological Society of America, GSA Sales and Services, PO Box 9140, Boulder, Colorado 80301-9140, USA. Price is US\$ 75

Website: <http://www.geosociety.org>

Reviewer's comments

The *Treatise on Invertebrate Paleontology* began in the 1950s as a series of encyclopedic volumes devoted to documenting the morphology, classification and distribution of all the major groups of fossil invertebrates. The resulting 35 volumes have become indispensable reference books for invertebrate paleontologists. This volume marks the inclusion of charophytes in the *Treatise* based largely on the recognition that they are an important group of microfossils. Furthermore, the charophytes join other "protists" (Protoctista), which will have complete coverage in upcoming volumes of the *Treatise*.

This volume comprises a series of chapters by Monique Feist and co-authors on all aspects of the charophytes, including their morphology, ecology, biogeography, stratigraphic distribution, evolution and classification. The book thus provides a state-of-the-art overview of all aspects of charophytes, and includes a 15-page bibliography and a detailed index, as well as three pages of the stratigraphic distribution (at the system and series level) of all charophyte taxa from the phylum to the subgenus level.

The summary of charophyte morphology is detailed and well illustrated. Brief overviews of mineralization, preparation and study techniques and ecology/paleoecology follow. The biogeography chapter briefly reviews modern distribution, whereas the stratigraphic distribution and paleobiogeography chapter summarizes fossil distribution. My conclusion here is that prior to the Late Jurassic, charophyte distribution is very spotty and poorly documented, with the possible exception of the Devonian. Therefore, I question

the text, which asserts that there are no mass extinctions of charophytes at the end-Permian or the end-Cretaceous. Is the charophyte record really complete enough to evaluate extinctions at these boundaries? I think not, because not only are the Permian, Triassic and Paleocene charophyte records poorly known, but there are few if any densely sampled sections of charophytes across either Erathem boundary.

The chapter on biozonation (p. 47) states that “the charophyte biozonations constitute a reliable biostratigraphical tool for dating and correlation in continental area. Today this biozonation covers nearly all the fossil record of charophytes.” However, most charophyte genera are too long ranging to provide a precise biozonation (see tables at the end of the book), and charophyte species are usually unique to a locality or outcrop belt and thus of no use in broad correlation. I believe that the main value of fossil charophytes is in paleoecological interpretation, as they are facies fossils, not index fossils.

The evolutionary history of charophytes presented in this volume is essentially that published by Louis Grambast in 1974—pre-Silurian origins, a broad diversification in the Devonian, another in the Late Jurassic-Cretaceous, primarily of the clavatoraceans, and the Triassic origin of the Characeae followed by their Cenozoic diversification. The authors thus reject recent attempts at understanding the phylogeny of charophytes with cladistics.

The chapter on molecular phylogeny briefly elucidates relationships within the Characeae and compares fossil and molecular phylogenies. A charophyte classification is presented that identifies certain morphological criteria to establish its ranks. Thus, charophyte genera are distinguished by characters of the gyrogonite apex, the basal plate and the general outline of the gyrogonite. I would characterize this as a traditional, evolutionary classification, different from the phylogeny-based classifications that are popular today.

The largest single section in the book is the 53 pages devoted to systematic descriptions. Each genus is listed with synonyms, and the illustrations are excellent. This section will be of great value to all who need an up-to-date compendium of the fossil charophyte genera.

Charophytes are important microfossils, and devoting a volume of the *Treatise* to them is ample testimony to their value. All who work on charophytes will need this book. I believe its “take home message” is that we need to learn much more about fossil charophytes, especially of the late Paleozoic and early Mesozoic, through discovery and documentation of their fossil record. Thus, like all great compendia, this volume tells us not only what we know but where we need to go from here.

Spencer G. Lucas, Albuquerque, NM, USA

Fossil charophyte research 30 years after Louis Grambast

Professor Louis Grambast died prematurely on the 13th December 1976 leaving behind a school of charophyte research in Montpellier (France). His impressive scientific legacy consisted in a coherent taxonomy, a system to classify fossil fructifications, a Cretaceous and Palaeogene biozonation and a number of significant hypotheses about charophyte phylogeny and evolution. After his death the charologists team of Montpellier continued his main lines of research and extended the influence of Grambast’s school in all Europe, from Romania to Portugal, and elsewhere. Therefore, it is difficult to summarize the evolution of Grambast’s scientific legacy during the past 30 years. From the point of view of taxonomy, his classification, based exclusively on fossil fructifications, has been generally accepted. As a result, charophyte research is integrated within micropaleontology, which is the applied and best financed part of palaeontology. Charophyte systematics developed by Grambast was based on phenetics, since this was the only system recognized 30 years ago in palaeontology. Many palaeocharologists continue to use it but others tried to develop a cladistic approach to systematize fossil charophytes. Biostratigraphy underwent significant progress in the past 30 years. Grambast’s concept of biozone was taken from the mammal biostratigraphy and most of his biozones were defined in outcrops

disconnected from each other. Today, European charophyte biozonations are still based on Grambast's pioneering work but have been completed with new biozones defined in more continuous stratigraphic profiles, and new correlations have been proposed between charophyte biozones and the marine standard zones. From the point of view of evolution the main hypotheses of Grambast were developed and specified at lower taxonomic ranks. However, the evolution of large fossil groups, such as Palaeozoic charophytes, Mesozoic "Porocharaceans" and fossil Characeans, still remains poorly understood. Significantly enough, the research subjects that Grambast left aside, such as palaeoecology and palaeobiogeography, have attracted the attention of just a few charologists, not to mention that the whole fossil record of charophyte thalli is waiting to be studied. Finally, new techniques were implemented after Grambast's death. Stable isotopes and the study of palaeomagnetism applied to biostratigraphy are just two examples of techniques that started being used in palaeocharology now. Thirty years after Grambast's death, his scientific legacy continues to be a strong basis for fossil charophyte research.

Carles Martín-Closas, Spain

History of extant charophyte investigations in Poland - an overview

The taxonomic investigation of charophytes has a long and interesting history in Poland. The first notes about Polish charophytes were made in 1791 by Jundził (1791), forty years after C. Linne published his "Species Plantarum". Jundził reported *Chara tomentosa* L., *C. vulgaris* L., and *C. hispida* L. Today, over 450 papers referring to distribution and taxonomy of charophytes from Poland are known.

After Jundził's (1791) work, studies of charophytes were carried out by Wolfgang (1822), Eichwald (1830) and Gorski (1845) – all these authors investigating only freshwater bodies till 1850. At this time, various German researchers made further regional and local

surveys of the occurrence of charophytes in fresh water on the present Polish territory. Some of them, Aleksander Braun, Robert Caspary, Walter Migula and Bruno Schröder and, are widely known by all people dealing with charophytes. Carl Baenitz and Carl Lakovitz investigated charophytes in brackish water, particularly from the Baltic Sea. Monographs and Exsiccata covering charophytes from Europe by Braun et al. (1857-1878) included material found in Poland.

Other studies from the Baltic were provided after the Second World War by Polish botanists between 1948–1960. One of them, Jan Kornaś, first described new charophyte associations: *Charetum balticae* Kornaś 1959 and *Tolypelletum nidificae* Kornaś 1959 (Kornaś et al. 1960). A survey of charophytes of the whole Baltic Sea already has been presented in a book "Charophytes in the Baltic Sea" edited by Schubert & Blindow (2003).

After 1945 charophytes in Poland were investigated by Dąbska (1952, 1959) and Karpiński (1938). Izabela Dąbska was an active researcher and one of the leading botanists working with living charophytes from Poland. She published a series of creative papers on charophyte ecology, systematics and vegetation. Her "Charophyta – a determination key" (Dąbska 1964), was one of the most important steps to modern charophyte investigations in Poland. Some other workers gave information on ecology and distribution of various species of charophytes especially of the eastern part of Poland; e.g. Fijałkowski (1959) and Karczmarz (1975, 1980). The first complete revision and summary of charophyte associations from Poland, was published by Dąbska in 1966. In this paper, several plant associations were recognised and described for the first time: *Charetum rudis* Dąbska 1966, *Charetum strigosae* Dąbska 1966 and *Charetum tenuispinae* Dąbska 1966.

At present, though older researchers are retired and funds are scarce, younger researchers continue doing research on charophytes, and new papers are published every year. Modern studies, include charophyte taxonomy, ecology and distribution (Ciecierska & Dziedzic 2003, Pelechaty & Pukacz 2004, Urbaniak 2003a and Urbaniak 2003b), and physiological aspects, e.g.

the plasmodesmal changes in relation to different developmental stages of antheridia in *Chara* species or the content of gibberelic acid in the apical parts of thalli of several species of *Chara* (Kwiatkowska 2003, Kwiatkowska et al. 2002, Maszewski 1991).

Jacek Urbaniak, Wrocław, Poland

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**PUBLICATION OF PAPERS FROM THE
4TH SYMPOSIUM OF IRGC
(ROBERTSON, AUSTRALIA)**

The journal *Cryptogamie-Algologie* has kindly accepted to publish the proceedings of the 4th IRGC Symposium as a special volume dedicated to charophytes, including biological and palaeontological aspects. Twenty-three participants submitted manuscripts for consideration, which are in the process of revision. The few reviewers that are delayed in sending their comments promised to send the revised copy at the end of February, so by the 31 March 2006 the authors will have the manuscripts back. We would appreciate if the contributors do the corrections and send the manuscripts back to us before the 15 May 2006. This will give us the possibility to have the special volume published this year.

We will keep in touch via e-mail during the process to report the authors the state of the publication.

Adriana García and Allan R. Chivas,
Guest Editors of *Cryptogamie-Algologie*

PAST MEETINGS

The **5th Regional Symposium of the International Fossil Algae Association (IFAA)**, Ferrara, Italy, August 30th-31st, 2005.

The meeting was perfectly organised by Davide Bassi and Anna Fugagnoli from the Dipartimento delle Risorse Naturali of the University of Ferrara. Presentations were organised in three sections: general themes, calcareous red algae and calcareous green algae. A total of 31 presentations, one by I. Soulié-Märsche on fossil charophytes, were given during the two days. Titles of the presentations can be found at <http://www.uni-tuebingen.de/IFAA-regional-symposium>.

A post-meeting field excursion to the Friuli and western Slovenia areas, focused mainly on calcareous algae such as dasycladaleans but also gave the opportunity to collect charophytes at

the K/Paleogene boundary, especially new outcrops providing the famous *Lagynophora* published by Stache 1889. The field trip guidebook is published in the Studi Trentini di Scienze Naturali, Acta Geologica, supplement 80 (2003).

Ingeborg Soulié-Märsche, France

The **9th International Conference on Salt Lake Research (ISSLR)**, Perth, Australia, September 26–30, 2005.

The conference was organised by Prof. Jacob John at the Curtin University of Technology, Perth, Australia together with the International Society of Salt Lake Research. One hundred scientists from 10 countries presented research on diversity, conservation and management of inland saline waters. Important themes of the conference included modelling of ecosystem processes, aquatic birds and microbial communities, and features of Western Australian inland saline environments. It was particularly interesting the large number of presentations from Western Australia involving charophytes as these are one of the main component of the biota of the saline water-bodies (mainly *Lamprothamnium* species). At this conference, Michelle Hindle received the student prize (US\$500) for her presentation on mapping and modelling Australian black swan feeding habitat from Lake Wollumboola, NSW, Australia (Hindle M., García A., Woodroffe C., Jones B.), research involving the monitoring of charophytes as the main source of food for the bird; also A. Garcia and A.R. Chivas presented on “Biogeography and diversity of *Lamprothamnium*.” For more details and abstracts: <http://www.salinesystems.org>

Adriana García, Australia

The **3rd meeting of Austrian Phycologists**, Innsbruck, Austria, October 29-30, 2005

This year's main topic was Charales. About 15 participants enjoyed a wonderful excursion,

interesting oral presentations and discussions about charophytes around binoculars.

During the excursion in the beautiful Austrian landscape we collected *Chara hispida*, *C. strigosa* and *C. contraria* in the mountain lakes Weissensee and Fernsteinsee. Surrounded by the Alps, the sunny weather gave these lakes a wonderful blue-green colour. *Chara vulgaris* was collected from small pools in the Baumkirchner Tal. Oral presentations about charophytes and determination of specimens took place in Innsbruck University. A big thanks you to Eugen Rott, Doris Gesierich and Georg Gärtner for organizing a both interesting and enjoyable meeting.



Collecting Characeans at Lake Weissensee, Austria

Susanne Schneider, Germany

FORTHCOMING MEETINGS

There are a large variety of meetings where Charophytologists can take an active part and promote the significance of our favourite plants. Make your choice:

2006

17th -21th June

The 2nd *International Palaeontological Congress*, Beijing, China.

The congress will be held at Peking University, and will cover all areas related to Palaeontology, including various pre- and post- conference fieldtrips to famous localities.

Website: <http://www.ipc2006.ac.cn>

Contact: IPC2006@nigpas.ac.cn;

ydwang@nigpas.ac.cn

25th -29th June

The 10th *International Paleolimnology Symposium*, Duluth, Minnesota, USA

The main theme of the meeting will be "Past Ecosystem Processes and Human-Environment Interactions". Registration and abstract deadline is 1st April, 2006.

<http://www.geo.umn.edu/paleolim10/index.html>

Contact: Kay Syme, 1994 Buford Avenue, St. Paul, MN 55108, USA

2nd -7th July

The XIII *Congreso de la Asociación Española de Limnología* (in conjunction with the V *Congreso Iberico de Limnología*), Universidad de Barcelona, Barcelona (Spain).

This congress is being held in honour of Professor Ramon Margalef, who has been 'the father of the Limnology' in Spain and published the book "Limnología".

Contact: Joan Armengol, Dept. Ecology, Facultad de Biología. Universidad de Barcelona, Avda. Diagonal, 645 - 08028 Barcelona, e-mail: jarmengol@ub.edu

Website: <http://www.tilea.es/ael2006/>

6th -11th September

The 7th *European Palaeobotany-Palynology Conference* will take place in Prague, Czech Republic.

Contact: Stanislav Oplucil, Charles University, Prague. E-mail: eppc2006@natur.cuni.cz

Website: natur.cuni.cz/eppc2006

15th -17th September

The 3rd *Annual Meeting of the German Working Group on Characeans* (Arbeitsgruppe Characeen Deutschlands, AGCD), will be held at Thomsdorf, Germany (Uckermark, Feldberger Seenplatte, located to

the north of Berlin. Besides oral and poster presentations, a boat tour on Carwitzer Lake, diving activities, and half day determination of collected material are planned. Language: German. Accommodation can be arranged at: (www.hotel-thomsdorf.de)
Contact: Prof. H. Schubert, Inst. Aquat. Ecol., Universität Rostock, Einsteinstr. 3 D-18055 Rostock, Germany.
e-mail:hendrik.schubert@uni-rostock.de

24th -26th September

The **6th Australian Algal Workshop** will take place at the University of Wollongong, Wollongong, Australia. The workshop is dedicated to the taxonomy of algae, with lectures and laboratory sessions, though ecology and palaeontology of Algae are also discussed. The strength of these workshops is their focus on identification of toxic algae and NATA regulations. Organisers: Dr Stephen Skinner and Dr Adriana García. Contact: Adriana García. E-mail:adriana@uow.edu.au

20th -22nd October

The **14th Meeting of the Group of European Charophytologists** (GEC), Barcelona, Catalonia (Spain).

The meeting is devoted to any aspect of both living and fossil Charophytes. The programme includes one day presentations.

Registration fee: 35 Euros for GEC members, 20 Euros for students, and two connected days of field trip with overnight accommodation in the village of Bellver, Cerdanya, Catalonian Pyrenees. Fieldtrip fees about 60 Euros. Delegates from outside Europe are welcome and should contact the organiser for further information. Barcelona can be reached from a large number of European Airports by low fares airlines, through Girona Airport, which is about 1h ½ (by shuttle + bus) from Barcelona centre.

Early booking is recommended! **Deadline for registration is 30 April, 2006.**

Organiser: Dr Jaume Cambra, Dept. Biologia Vegetal, Facultat Biologia, University of Barcelona. Av. Diagonal, 645. 08028 Barcelona, Catalonia, Spain. Contact: Jaume Cambra

<jcambra@ub.edu> or Núria Flor-Arnau <n.flor@ub.edu>.

Website: <http://es.geocities.com/gecbarcelona/>

The complete circular and registration form are electronically available at the IRGC website: <http://irgc.uow.edu.au/> (see Activities)

2007

11th -14th July

ILIC 2007 - 4th International Limnogeology Congress, Barcelona, Catalonia (Spain).

This meeting will cover all aspects related to paleolimnology including lacustrine records of global to regional paleoenvironmental changes, paleobiological views from lacustrine records, techniques in limnogeology, and modelling ancient to recent lakes.

Website: <http://www.ilic2007.com>

28th July-3th August

XVII INQUA meeting, Cairns, Australia.

The International Union for Quaternary Research is organising the XVII INQUA meeting in Australia, dedicated to Quaternary research.

Website: <http://www.inqua2007.net.au>

2008

5th IRGC Symposium

Dr Irmgard Blindow and Prof. Hendrik Schubert agreed to organise our next Symposium. The meeting will take place in one of the university towns in north Germany (Rostock or Greifswald) both easily reached from either Berlin or Hamburg airports. Excursions will include a visit to sites to sample fossil Charophytes (Jurassic and Cretaceous) under the guidance of Dr Michael Schudack, as well as the collection of living charophytes in the Baltic area.

NEWS FROM THE REGIONAL GROUPS

South American Charophytes

The attributes of the Permian and post Jurassic record of gyrogonites, first described many years ago from Bolivia, Perú, Brazil and Argentina, seems of interest as a central topic to review Charophyte Systematics. A goal should be to integrate the fundamental knowledge into the current biogeographical frame. The correspondent proposes to contact during the years 2006-2007, all colleagues working on South American living and fossil charophytes, opening the possibility to provide a report of activities at the next IRGC Symposium, 2008.

Current research: Adriana García is studying recent Characeae from Neuquén and Río Negro Provinces (Argentina). During 2005, Adriana and the palaeobotanist Rafael Herbst (rafaherbst@uolsinectis.com.ar) have sampled Neogenic sediments from the Province of Catamarca (NW-Argentina). Vera Alleman (vmealleman@yahoo.es) is preparing a Data Base with the information about the previous work on charophytes accounted in Perú. The correspondent is reviewing the Systematics and the Biostratigraphy of the Upper Jurassic and Cretaceous Charophytes from different West Central Argentina and North Patagonia lake deposits. This approach form part of the multidisciplinary project *Palaeolimnology* currently in development by the Laboratory of Biostratigraphy-UNPSJB- Argentina).

Publications

Musacchio, E.A., Herbst, R., García, A., 2005 Charophyta de la Formación Mercedes, Uruguay. In: *XIX Congreso Brasileiro de Paleontología* (Abstract). Aracajú, Brasil 2005).

Musacchio, E., 2005 (in press). Late Cretaceous and Paleocene Charophyta of the West Central Argentina (in Spanish) *Revista Paleontologica Brasileira*.

Cusminsky, G., García, A. and Herbst, R. (2006). Ostracodos (Crustacea) y Carofitos (Charales) del Mioceno Superior de la Formación Desencuentro, La Rioja, Argentina. (*Ameghiniana*).

**Eduardo A. Musacchio, Comodoro
Rivadavia, Argentina**

Austral-Asian Charophyte Group

The Austral-Asian Charophyte Group has not been actively communicating since its formation at the IRGC meeting in Australia. However, in a recent call for news several members gave an update on their activities. John Porter has completed his PhD on Arid Zone Wetland Vegetation and Seed Banks (including charophyte oospore banks) in late 2005 and is looking for work. He is still collecting charophytes and undertaking research into arid zone wetlands. Janet Smith is working on the private forests reserve program for the Department of Primary Industries, Water and the Environment in Tasmania. Adriana Garcia is still working on extant and fossil charophytes with collaborators in Australia, USA and South America, and working for the IRGC in producing the published proceedings of the last conference, as well as this newsletter! Michelle Casanova is continuing to consult on charophyte identification and ecology for various government and non-government organisations within Australia. Her most exciting news is that the development of a new international journal on all aspects of extant and fossil Characeae, *Charophytes*, is well under-way, and will provide a venue for publication of charophyte research in the near future (see 'Last Minutes from Individuals'). Mary Beilby continues to actively research and publish on charophyte physiology (two large papers in press and several more to come), with new honours (Huw Campbell) and PhD students (Sabah AlKhazaaly) despite the decline in funding for pure sciences in Australian universities. All of these members are in Australia. Asian members are encouraged to contact Michelle and send their news. If enough activity ensues, a more local email newsletter could result.

Michelle T. Casanova, Westmere, Australia

Group of European Charophytologists

The Group of European Charophytologists (GEC) is searching for a new webmaster to maintain its homepage. Dr Michael Schudack, who has kept the GEC website running for many years, is not able to maintain the website anymore.

We are looking for a qualified volunteer who wishes to help with this task. Please contact the GEC's President Susanne Schneider, E-mail: susi.schneider@wzw.tum.de

CHAROPHYTE-DISCUSSION FORUM

Dr Robin Scribailo (USA) has now established the **charophyte-L**, our quick and new way of communication.

<*charophyte-L*> is an open forum for discussion about all aspects of Charophyte research.

How to subscribe to charophyte-L?

Just send the message to the listserver:

listserv@pnc.edu

In the body (not the subject) of the message type: ***subscribe charophyte-L your name***

Leave the subject blank. Also make sure your signature is turned off for this email. It must be sent as a text message. You will receive an automatically generated message telling you how to make use of the list. Once you are subscribed, you can send messages to the list server who will distribute it to all subscribers.

CHAROPHYTES ON THE WEB

The **IRGC** homepage has been revamped and is hosted at: <http://irgc.uow.edu.au/>

The **GEC** homepage previously hosted at: <http://userpage.fu-berlin.de/~palaeont/gec.htm> is provisionally out of order.

Members who would like to have their personal homepage connected with the IRGC-website are invited to send relevant information to Adriana García.

Landelijk Informatiecentrum voor Kranswieren (**LIK**): <http://www.kranswieren.nl> (in dutch)

The International Fossil Algae Association (**IFAA**): <http://www.ku.edu/~ifaa/>

The Charophycean Green Algae Home Page: <http://www.life.umd.edu/labs/delwiche/Charophyte.html>

Homepage of the German Working Group on Characeans (AGCD)
<http://www.biologie.uni-rostock.de/oekologie/agcd>

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**LAST MINUTE NEWS FROM
INDIVIDUALS**

New Charophyte Journal

Currently charophyte papers are scattered throughout the literature (apart from the valuable publication of the proceedings of conferences). New researchers are faced with a bewildering task, in trying to find the most up-to-date information on charophytes. Established researchers need to subscribe to a number of expensive journals to access information in their field. A new journal for publication on all aspects of extant and fossil charophytes will be launched towards the end of 2006. The new journal, *Charophytes*, will provide a venue for high quality research and review publications, and will target an audience of established charophyte researchers, educators and managers. The aim of this new journal is to stimulate good quality research, so there will be no page charges, and subscription costs will be kept to a minimum. It is envisaged that this new journal will be an continuing source of information and current research to charophyte researchers and managers world-wide. Members of the IRGC

are invited to submit their research and review papers. The first issue will be available free of charge for download on the internet, and subsequent issues will be available as either on-line or hard-copy subscription. Good quality manuscripts, on any aspect of extant or fossil charophyte biology, ecology, taxonomy, physiology, morphology, management, conservation etc. are currently being sought for the second and later issues. All papers are subject to peer review, and it is intended that the journal will be abstracted by the usual abstracting and citation publications. Please contact the editor Michelle Casanova (amcnova@netconnect.com.au) for a copy of the instructions for authors, and for further information. Look out for the first issue on-line, in December 2006.

Michelle T. Casanova, Westmere, Australia

The *IRGC-board* invites all members to express their POINT OF VIEW about the suitability of this project. Are you ready to take part in it? Are you ready to publish and support the new *Charophytes* journal?

Please send your comments to any of the IRGC-officers (e-mail addresses on cover).

E-Mail addresses of ALL IRGC Members

Please check the e-mail list and address directory carefully. **We particularly urge members to send any address changes (both surface mail and e-mail)** to the IRGC-Secretary, Adriana García <adriana@uow.edu.au> to make sure you will receive any forthcoming information.

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MEMBERSHIP FEES

Please do not forget to send your membership fee payment for 2006!

10 Euros (c. US\$12) per year

Thanks to the efforts of our treasurer the payment can be done by credit card. Please download the payment form from the IRGC-webpage at:
<http://irgc.uow.edu.au/>

(click on Membership, then Payment Form Download)

Any questions about membership fees should be addressed to the IRGC-Treasurer Dr Emile Nat:
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