

PHYCOLOGICAL SOCIETY OF SOUTHERN AFRICA

FIKOLOGIESE VERENIGING VAN SUIDELIKE AFRIKA

NEWSLETTER NUUSBRIEF

No. 39 July 1995

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FROM THE EDITOR

Greetings PSSA members

The first newsletter (No. 48) I produced contained some "glitches"... teething problems I hope. Firstly in Rob Anderson's report on the 15th ISS in Valdivia, more detail was included than intended (see Letter to Editor in this newsletter). Secondly the list of theses and publications from the University of the Witwatersrand, Department of Botany included theses and papers from the University of Natal, Pietermaritzburg. The corrected title for this article would be "List of theses and publications provided by Dr Sym and Prof Pienaar of the Botany Department, University of the Witwatersrand."

In this newsletter I have been more careful and have acknowledged the source of the various articles. The theme of this newsletter is e-mail and the internet. I thank Derek Du Preez for his help with the article "Cruising the Internet".

I have included a list of members with their e-mail addresses. If your e-mail address has changed or your name does not appear on the list please let me have the information for the November newsletter issue.

Included in the newsletter is an application form for new members..... encourage your colleagues and students to join our society. The announcement and circular for the PSSA conference in January is also enclosed. REPLY NOW if you have not done so yet.

The sad news of Prof. Seagrief's death reached the newsletter desk in time to add a short note to this issue, in the following issue we will pay tribute to our friend and colleague. If you would like to contribute to this article please contact me.

Best wishes for your activities for the second half of the year.

Regards

Janine

P.S. Thanks to Dr Stuart Sym for photographs used in this issue.

Send contributions for the next newsletter to:

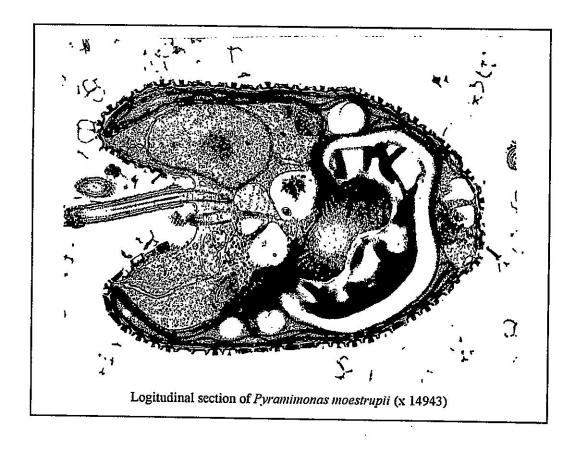
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MEMBERS' ACHIEVEMENTS



CONGRATULATIONS TO DR ALAN CRITCHI FY



CONGRATULATIONS TO GAVIN MANEVELDT



WINNER OF THE STUDENT PRIZE FOR THE BEST ORAL PRESENTATION AT THE PSSA 1995 CONFERENCE

Gavin has a long history of achievements. From 1982-1984 he represented his school at the National high school mathematics olympiad. He graduated from the Science Faculty at the University of the Western Cape with distinctions in Botany and in both his first and third year of study he obtained the prize for the botany student with the highest achievement.

In 1994 Gavin received the best student presentation of the year award at the AGM of the Experimental Biology Group meeting. Gavin has co-authored several scientific papers and has given numerous talks at local conferences as well as a presentation at the winter meeting of the British Phycological Society (Liverpool, U.K., 1994).

Present employment

Gavin is research assistant to Prof Derek Keats in the Marine Unit of the Botany Department (UWC). He lectures Phycology to the second year students and is the Marine Biology practical lecturer to the 3rd year Botany students. He still finds time to work on his MSc titled "The ecology of an encrusting coralline alga in relation to grazing along a geographic gradient."

Future plans

Gavin is fascinated by the sea and all things marine. He originally intended doing postgraduate studies in Zoology but he says that his love for Phycology has been nurtured by his friend and mentor, Prof Keats.

Gavin has always been interested in nature conservation and hopes to one day pursue a post in marine conservation or work in a research team studying the ecology and conservation of rocky shore benthic flora and fauna.

GOOD LUCK GAVIN - WE WISH YOU EVERYTHING OF THE BEST FOR YOUR FUTURE, ed.

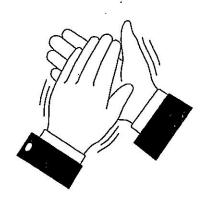
The Convocation Distinguished Teachers Award in the Faculty of Science, University of the Witwatersrand has been awarded to Dr Critchley in the Botany Department. Alan obtained a PhD at the Portsmouth Polytechnic, UK and was appointed Senior Lecturer in Botany at Wits in 1987.

The topics Alan teaches focus on important foundation concepts of cell division and reproduction and courses in phycology - covering aspects of the taxonomy, ecology, physiology and utilisation of these organisms.

In conjunction with Martie Sanders (science educationist based in the Botany Department) and Claire Donald (instructional designer and PhD student) Alan developed a hypertext computer programme known as "Biocycles" to address some of the teaching and learning difficulties experienced by undergraduates in relation to cell division and reproduction in plants, algae and fungi. Through collaboration with the University of Nottingham, it is hoped that the package will be upgraded considerably to use multimedia (including sound and video footage).

Alan has also co-edited a book (Seaweed Cultivation and Marine Ranching 1993. Ohno, M. and A.T. Critchley (eds.). 1st edition. Kanagawa International Fisheries Training Center IICA) on seaweed cultivation and marine ranching which PSSA members should be familiar with. The book was written for students from developing countries learning mariculture techniques.

(Article modified from Arena, Wits convocation newsletter).



RECENT ABSTRACTS



CONTRIBUTED BY ROB ANDERSON OF THE SEAWEED UNIT, SEA FISHERIES RESEARCH INSTITUTE

Anderson, R.J., Monteiro, P.M.S. and G.J.Levitt (in press)

The effect of localised entrophication on competition between *Ulva lactuca* (Ulvaceae, Chlorophyta) and a commercial resource of *Gracilaria verrucosa* (Gracilariaceae, Rhodophyta). Hydrobiologia, (Proceedings of 15th International Seaweed Symposium, Chile, January 1995).

Key words: ammonium, competition, eutrophication, Gracilaria, seaweed, Ulva.

Abstract:

In spring (August) 1993 a bloom of *Ulva lactuca* appeared for the first time in Saldanha Bay, South Africa, and persisted through summer. *Ulva* wash-ups contaminated the beach and part of the commercial *Gracilaria* beach-cast had to be discarded. The biomass and distribution of *Gracilaria* and *Ulva* are described in relation to the seasonal water chemistry of the bay. *Gracilaria* survives in deeper water in summer by the pulsing of nutrients on an approximately 6-day cycle of movement of the thermocline that separates nutrient-rich bottom water from warm oligotrophic surface water. Ammonium-rich fish-factory discharge into this surface layer in a sector of the bay provided localised conditions for *Ulva* to out-compete *Gracilaria* at depths of 2-5m, demonstrating the powerful disruptive effect of eutrophication in this strongly stratified system.

Monteiro, P.M.S., Anderson, R.J. and S. Woodbourne (in press)

Coastal eutrophication: delta 15N as a tool to quantify the relative magnitudes of natural and fish waste derived nitrogen to an *Ulva* bloom. Estuarine, Coastal and Shelf Science.

Keywords: Eutrophication, *Ulva*, nitrogen, stable isotope ratios, delta 15N, Saldanha Bay, Langebaan Lagoon.

Abstract:

This study describes the use of stable isotope ratios of nitrogen delta 15N to test the hypothesis that the *Ulva* bloom which occurred in Saldanha Bay in the summer of 1993/94 was linked to an adjacent discharge of nitrogen from pelagic fish processing waste. A significant difference in the delta 15N between the control site (Langebaan Lagoon) and the more enriched Saldanha Bay *Ulva* samples was consistent with the view that the nitrogen from the latter originated from a trophically higher source than in the case of the control.



Levitt, G.J., Bolton, J.J. and R.J. Anderson (1995)

Potential harvestable biomass of four carrageenan-producing seaweeds of the South-Western Cape, South Africa S. Afr. J. mar Sci. 15: 49-60

Abstract:

Four species of carrageenophytes were surveyed to determine the harvestable biomass of populations in the South-Western Cape, South Africa. Three species, Aeodes orbitosa, Gigartina polycarpa and Sarcothalia stiriata occur in sufficient quantities to be harvested, with summer fresh mass standing stocks of 193.5, 154 and 104 tons respectively. The summer standing stock of Mazzaella capensis (33.5 tons) was too low to warrant exploitation, as was the winter standing stock (10 tons) of Aeodes orbitosa. Biomass of G. polycarpa and S. stiriata fluctuated seasonally, being maximum (2.9 and 3.0 kg.m⁻² respectively) in summer and minimum (0.8 and 1.2 kg.m⁻² respectively) in winter. The low biomass of these two species limits, economically, their harvesting potential during that season. The mean carrageenan content of G. polycarpa and S. stiriata was 44-49% (gametophytes) and 39-41% (tetrasporophytes). The expected carrageenan yield from a combined summer harvest of A. orbitosa, G. polycarpa and S. stiriata would be approximately 29.3 tons.



LIST OF THESES AND PUBLICATIONS ON ALGAE FROM THE UNIVERSITY OF CAPE TOWN, DEPARTMENT OF BOTANY (FROM 1980)

CONTRIBUTED BY PROF. JOHN BOLTON, BOTANY DEPARTMENT, UNIVERSITY OF CAPE TOWN.

THESES



- Anderson, R.J. (1982). A biological study of Desmarestia firma (C.Ag.) Skottsb. (Phaeophyceae) Desmarestiales. Ph.D. thesis, University of Cape Town.
- Brauer, J.M. (1987) Nutrient uptake and exudation patterns of nitrogenous substances and polyphenols in the kelp Ecklonia maxima (Osbeck) Papenfuss. M.Sc. thesis, University of Cape Town.
- Joska, M.A.P (1992) The taxonomy of Ulva (Chlorophyta) in the southwestern Cape Province, South Africa. M.Sc. thesis, University of Cape Town.
- Levitt, G.J. (1987) Primary production in littoral and sublittoral Cape Peninsula seaweeds. M.Sc. thesis, University of Cape Town.
- Manuel, T.L. (1991) Seasonal demographic studies on Bifurcaria brassicaeformis (Fucales, Phaeophyta). M.Sc. thesis, University of Cape Town.
- Molloy, F.J. (1992) Studies on the ecology and production of seaweeds of economic and potential economic importance in Namibia. Ph.D. thesis, University of Cape Town.
- Pitcher, G. (1990) Seeding of newly upwelled water with phytoplankton in the Benguela system. Ph.D. thesis, University of Cape Town.
- Stacey, V.J. (1984). The physiology and biochemistry of the Laminaria pallida/Carpoblepharis minima and Ecklonia maxima/Suhria vittata associations from southwestern Cape waters, South Africa. Ph.D. thesis, University of Cape Town.

<u>PAPERS</u>



Anderson, R.J. (1982). The life history of Desmarestia firma (C.Ag.) Skottsb. (Phaeophyceae, Desmarestiales). Phycologia 21: 316-322.

- Anderson, R.J. (1985). Morphological and taxonomic relationships among branched ligulate members of the genus Desmarestia (Phacophyta, Desmarestiales) with particular reference to South African Desmarestia firma. Can. J. Bot. 63: 437-447.
- Anderson, R.J. and J.J. Bolton (1985). Suitability of the agarophyte Suhria vittata (L.) J.Ag. for mariculture: Geographical distribution, reproductive phenology and growth of sporelings in culture in relation to light and temperature. S. Afr. J. Mar. Sci. 3, 169-178.
- Anderson, R.J. and J.J. Bolton (1989). Growth and fertility in relation to temperature and photoperiod in Desmarestia firma (C. Ag.) Skottsb. Botanica Marina 32: 149-158.
- Anderson, R.J. & Bolton, J.J. (1990). Reproductive morphology and life histories of southern African Gymnogongrus species (Rhodophyta, Phyllophoracae).
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- Anderson, R.J. and Hay, C.H. (1986). Seasonal production of Desmarestia firma (C.Ag.) Skottsb. (Phaeophyta, Desmarestiales) in a kelp bed on the west coast of the Cape Peninsula, South Africa. Bot. Mar. 29: 523-531.
- Anderson, R.J., R.H. Simons, and J.J. Bolton (1988)

 Zeacarpa leiomorpha (Ralfsiaceae), a new genus and species of crustose marine Phaeophyceae from southern Africa. Phycologia 27: 319-326.
- Anderson, R.J. and Stegenga, H. (1985). A crustose tetrasporophyte in the life history of Nothogenia erinacea (Turner) Parkinson (Galaxauraceae, Rhodophyta). Phycologia 24: 111-118.
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- Bolton, J.J. and G.J. Levitt (1987) The influence of upwelling on South African west coast seaweeds. S. Afr. J. Mar. Sci. 5, 319-325.
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- Bolton, J.J., Stegenga, H. and Anderson, R.J. (1991).The seaweeds of False Bay, South Africa. J. Roy. Soc. S. Afr. 47: 605-610.
- Engledow, H.E. & Bolton, J.J. (1992). Environmental tolerances in culture and agar content of Gracilaria verrucosa (Hudson) Papenfuss (Rhodophyta, Gigartinales) from Saldanha Bay. S. Afr. J. Bot. 58: 263-267.
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- Stegenga, H. (1990). The genus Compsothamnionella Itono (Ceramiaceae, Rhodophyta) on the South African coast. Acta Bot. Neerl. 39: 93-99.
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- Wells, J., E.J. Moll and J.J. Bolton. (1989). Substrate as a determinant of marine intertidal algal communities at Smitswinkel Bay, False Bay, Cape. Bot. Mar. 32: 499-502.
- Wentzel, M.C. and Schütte, K-H. (1983). Coupled pH and oxygen oscillations in the environment of a kelp (Ecklonia maxima). S. Afr. J. Bot. 2: 258.

CRUISING THE INTERNET



To cruise or surf the Internet you need access to the Internet and a Web browser like Mosaic, or the most popular one at the moment, Netscape (preferably version 1.1). With a Web browser you can search various Internet resources, subscribe to news groups, as well as view and download information, including graphics, video and sound.

You can download the latest version of Netscape Navigator via FTP from any of the sites listed below. A number of educational sites act as FTP mirrors. To speed downloads, it is always best to use the mirror closest to your location. Also, time differences will have an effect on server loads; the best time to connect is during the evening hours at the server's location. However, if you are downloading from the United States it is usually better to do so late at night when the local Internet traffic is minimal. This is because South African Internet infrastructure is much slower than it is in the United States.

The recommended site for Africa is (remember that for these FTP sites case is important):

ftp.sun.ac.za/pub/archiving/www/mcom/netscape/

Look for a file called n16e11n.exe.

Other sites are:

ftp://ftp.netscape.com/pub/

ftp://ftp2.netscape.com/pub/

http://download1.netscape.com/

ftp://wuarchive.wustl.edu/packages/www/Netscape/netscape1.1

ftp://ftp.cps.cmich.edu/pub/netscape/

ftp://ftp.utdallas.edu/pub/netscape/netscpe1.1/

ftp://ftp.micro.caltech.edu/pub/netscape/

ftp://unicron.unomaha.edu/pub/netscape/netscape1.1/

ftp://server.berkeley.edu/pub/netscape/

ftp://SunSITE.unc.edu/pub/packages/infosystems/WWW/clients/Netscape/

fip://sunsite.doc.ic.ac.uk/computing/information-systems/www/Netscapes/

Find out more about Netscape at: info@netscape.com Copyright & copy; 1995 Netscape Communications Corporation

WORLD WIDE WEB SITES - UNIVERSAL RESOURCE LOCATORS (URL's)

PSSA members, Derek Du Preez (Botany Department, University of Port Elizabeth) and Derek Keats (Botany Department, University of the Western Cape) have been busy creating World Wide Web sites on the Internet.

Derek du Preez has created a home page for PSSA, the address is:

http://www.upe.ac.za/botany/pssa.htm

It is also available through the UPE Botany home page:

http://www.upe.ac.za/botany/botany.htm

Addresses provided by Derek Keats include:

University of the Western Cape, Botany Department home page:

http://www.botany.uwc.ac.za/index.htm

Prof. Derek Keats home page:

http://www.botany.uwc.ac.za/botany/staff/derek/derek.htm

Coralline algae information

http://www.botany.uwc.ac.za/clines.htm

Other addresses of interest to Phycologists provided by Derek du Preez are included below. A brief description is given of the information available.

http://clas.www.pdx.edu/Algalphysiology/index.html

Algal Physiology Lab at Portland State University.

http://www.msen.com/~peterw/gallery/SaintRyan/SaintRyan.html

Angels and Devils is an interesting collection of artwork inspired primarily by protista and simple animals. Although it is a commercial service I have included it to demonstrate to non-majors biology students that even artists can profit from the study of biology.

http://WWW.bgsu.edu/Departments/biology/Algae_Images.html

Algal Microscopy & Image Digitisation WWW server at Bowling Green State University provides images of diatoms and links to other diatom related servers.

http://www.mip.berkeley.edu/ioc/ioctoc.html

Catalogue of the Benthic Marine Algae of the Indian Ocean contains all published records of benthic marine algae from the Indian Ocean excluding the Red Sea. They are assembled in a catalogue with the taxa arranged according to an assumed phylogenetic scheme to the rank of order.



http://www.indiana.edu/~diatom/diatom.html

Diatom Home Page, Indiana University is a central web node for palaeocologists and diatomists to locate useful information and to connect to other useful pages.

gopher://huh.harvard.edu:70/11/collections_info/huh

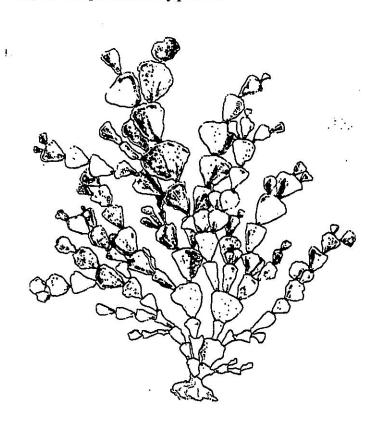
Farlow Herbarium Diatom Catalogue has a searchable bibliography of their collections.

http://megasun.bch.umontreal.ca/protists/protists.html

Protist Image Data Base provides pictures and short descriptions of selected protist genera, especially those genera whose species are frequently used as experimental organisms or are important in studies of organism evolution.

These and other sites of interest to phycologists are available from the PSSA home page at:

http://www.upe.ac.za/botany/pssa.htm



If all of this seems a bit daunting there are books available to help. The book reviews below were taken from NetNews, Spring 1995 compiled by David Kelsey, IBM Corporation.

FOR BEGINNERS.....

The Internet for Dummies

John Levine and Carol Baroudi. IDG Books Worldwide, 1993. Contains good cartoons and bad puns with a folksy, hold-your-hand approach. Too dated to buy now. Wait for the update sometime this summer, it will add information about browsers and the World Wide Web.

The Internet Guide for New Users

Daniel Dern. McGraw-Hill, 1994.

Provides another thorough treatment not for the easily intimidated, but written nonetheless in a casual style with helpful tips throughout.

MOSAIC Quick Tour

Gareth Branwyn, Ventana Press, 1994.

Focuses on NCSA's MOSAIC and the World Wide Web. For those who know little or nothing about the Internet and who would rather learn from a book than experiment with browsers online.

FOR THE MORE ADVANCED.....

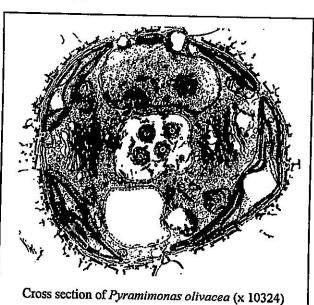
The Internet Complete Reference

Harley Hahn, and Rick Stout. Osborne McGraw-Hill, 1994. Provides a thorough treatment, including a catalog of Internet resources. Daunting to the uninitiated, but useful for those who want and need a broad and detailed understanding.

Internet Instant Reference

Paul Hoffman. SYBEX Inc., 1994.

Serves as a reference book with brief but helpful explanations of Internet terms and commands. Most helpful to users who already have some knowledge and familiarity of ftp, gopher, telnet and WWW



E-MAIL ADDRESSES OF PSSA MEMBERS



(IF YOUR E-MAIL ADDRESS HAS CHANGED OR DOES NOT APPEAR ON THIS LIST PLEASE SEND IT ASAP TO THE NEWSLETTER EDITOR)

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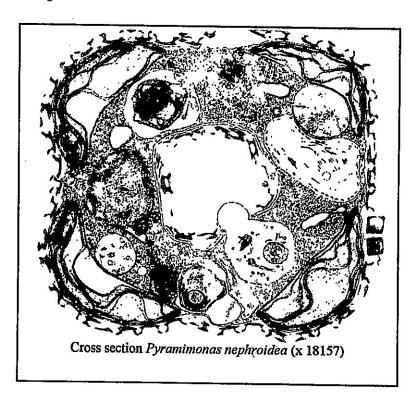
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LETTER TO THE EDITOR



THE HAZARDS OF E-MAIL AND AN APOLOGY

Firstly, congratulations to Janine Adams on an attractive and informative PSSA Newsletter No. 38.

I would like to apologise for the excessive length and detail in my report on the 15th ISS in Valdivia. What happened is that I modified part of my official (SFRI) report for submission to the newsletter, and e-mailed it. However, parts of the original report which had not been deleted, and were out of sight on the next page went along as well. Besides greatly amusing certain colleagues and revealing probably confidential information, this has probably baffled some readers: I apologise and will be more careful in future.

Rob Anderson

PROFESSOR STANLEY C. SEAGRJEF

It is our sad duty to inform members that Professor Stan Seagrief died on 13 July from complications resulting from a viral infection. The Council of PSSA extend their condolences to Mary Seagrief and family. Stan Seagrief will be remembered with great affection by his many friends, colleagues and past students. A tribute to Prof Seagrief will appear in the next newsletter.

CONFERENCE NEWS



ECOWORLD '96

Durban, 25 to 30 March 1996

The biggest ecotourism and environmental summit ever staged in Africa is to be held in Durban from 25 to 30 March 1996.

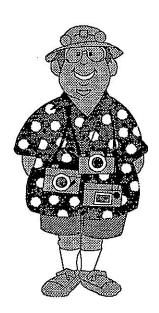
EcoWorld '96 congress is expected to draw over 1000 international and local delegates and the exhibition will consist of more than 350 exhibitors. The congress will consist of three components:

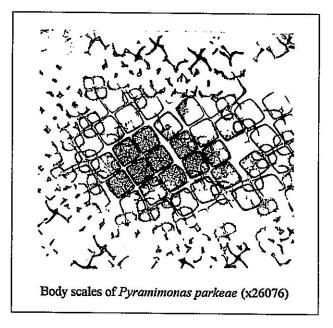
- * A Exhibition on ecotourism, wildlife and environmental management.
- * A world congress encompassing symposiums on wildlife management, ecotourism, adventure travel, marine conservation and environmental management.
- * An international Nature film festival to be staged by Ster Kinekor.

Correspondence and Enquiries:

Ecoworld '96 Conference: Ginny Eslick Ecoworld '96 Secretariat P O Stamford Hill Durban 4025

Tel: 031 233494 Fax: 031 232405





1 ST EUROPEAN PHYCOLOGICAL CONGRESS COLOGNE, GERMANY

AUGUST 11-18, 1996

This meeting will provide a broad forum for phycologists from all over Europe and overseas for communication and discussion on many fascinating aspects of phycology - from molecular to organismic subjects, including freshwater and marine habitats as well as applied and basic research. The Congress will take place on the campus of the University of Cologne.

Suggested Titles for Mini-Symposia include:

- * Algae as indicators of pollution
- * Terrestrial and soil algae
- * Parasites of algae
- * Algal life histories
- * Population genetics of algae
- * Cytoskeleton research
- * Algal biochemistry

CONGRESS SECRETARIAT

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e-mail (Internet) MMELKON BIOLAN, UNI-KOELN, DE

ANNOUNCEMENT AND FIRST CIRCULAR

PHYCOLOGICAL SOCIETY OF SOUTHERN AFRICA - 13TH CONGRESS

DATES: 22 - 24 January 1996

VENUE:

Meerensee resort, Bot River estuary, near Hermanus

PROVISIONAL PROGRAMME:

Sunday 21

Afternoon, arrive at Meerensee, Registration

Monday 22

Congress sessions

Tuesday 23

Morning, complete sessions.

Afternoon, field excursion - sampling on estuary

Wednesday 24

Morning, completing examination of field material.

Depart after lunch.

COST: Provisionally as follows

Registration (students R 50), others

....R 150

(Reg. is separate from accom. etc. below)

Full package (congress + field trip, incl.

....R 500

accomm. & meals: dinner Sun - lunch Wedn)

Congress excluding field trip (dinner Sun - lunch Tues)

...R 350

MEERENSEE RESORT

provides good conference facilities and is situated next to the Bot River estuary and the sea, a little over one hour's drive from Cape Town and less than 10 minutes from Hermanus. It is surrounded by proclaimed nature reserves and offers excellent birdwatching, walks, canoeing, horse-riding, and angling. There are also tennis courts, a swimming pool and an indoor cricket pitch.

THE BOT RIVER ESTUARY

is a closed estuary about 7 km long and 2 km wide, fed by several small rivers. It is brackish being artificially opened every two years so that it continues to be a nursery for marine fish. See: Transactions of the Royal Society, Vol. 45, part 3 and 4 (1985) for the proceedings of a symposium on this estuary.

THE PSSA FIELD EXCURSION

will be planned according to the interests of delegates, and could produce a report of some sort (as suggested by Guy Bate at the last PSSA meeting). The estuary offers an opportunity for freshwater, estuarine and marine phycologists to get together and do useful work, as well as exchange practical ideas and experience. Suggestions include compiling a list of algal distributions in relation to a river-to-mouth salinity gradient. Please think about this, and include your suggestions with your reply. We will provide microscopes and other equipment.

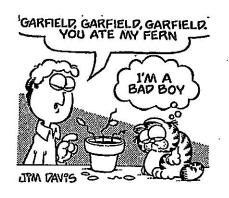


CONTACT ADDRESS:

PHYCOLOGY Congress, Botany Dept, University of Cape Town, Rondebosch 7700. Tel: (021) 689 3032. Fax: (021) 650 4041

E-mail:

PSSA@BOTZOO.UCT.AC.ZA or ANDERSON@BOTZOO.UCT.AC.ZA or LEVITT@BOTZOO.AC.ZA or SHARE@BOTZOO.UCT.AC.ZA



REPLY FORM TO FIRST CIRCULAR -PSSA CONGRESS 1996 (To be returned ASAP)

YOU MAY REPLY TO FIRST CIRCULAR BY E-MAIL. PLEASE ENSURE THAT 1-9 BELOW ARE ANSWERED!

1. Name:

2. Address:

CANNOT GUARANTEE THIS!

3. Fax:		
4. e-mail address:		
5. I intend/ do not intend to g	go to the 1996 PSSA congress.	
6. No. of accompanying perso (rates as above, excl. regist	ons tration)	
7. I wish to contribute:	1. an oral paper 2. a poster 3. neither	
8. I intend to stay for:	8.a. Full congress & field trip 8.b. Congress excl. field trip	
9. Please tick local transport if required:		
	- from Stellenbosch (SAAB venue) from Cape Town Airport to Cape Town Airport fficient	
Note: Individuals requiring transport will have to be charged, but we will try and keep costs to a minimum.		
10. Suggestions for field excursion: (what would you like, what can you contribute?)		
11. Deadlines: ASAP - we need your reply to first circular		
By 15 August - you will receive second circular, asking for titles, abstracts, and accommodation deposit (see note below). By 15 September - we must have your reply to 2nd circular.		

The costs are calculated for 30 - 35 delegates. If substantially fewer are interested, and we consequently have to re-negotiate, costs may rise.

PLEASE NOTE: because this is a private resort, and it will be holiday season, we, the organisers are obliged

to provide a 50% deposit (on meals and accomm.) by 15 September 1995. This cannot come from the Society, so only those who send deposits (R 250 for full package, R 175 for Congress only) will be booked in. We believe that the odd refund of deposits will be considered in cases where real problems arise, BUT WE min newsoning and the second s



APPLICATION FOR MEMBERSHIP

Name:	•••••••••••••••••••••••••••••••••••••••	
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E-mail:		
maintain communicat	ciety of Southern Africa aims to promote an interest in phycology and establish and ion between persons interested in the algae of southern Africa and, by way of the and disseminate information concerning the Society, it's members and matters of n	
Signature: Date:		
Student membe Ordinary memb Ordinary memb	pership R 30 pership (overseas) R 40 bership R 240	
Please send to:	Membership Secretary PSSA Department of Botany University of Cape Town Private Bag Rondebosch	

7700

South Africa

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