



**PHYSIOLOGICAL SOCIETY
OF SOUTHERN AFRICA**

**EKOLOGIESE VERENIGING
VAN SUIDELIKE AFRIKA**

**NEWSLETTER
NUUSBRIEF**

**No. 40
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MERRY CHRISTMAS!

FROM THE EDITOR

Dear PSSA members,

1995 has been a terrific year that has suddenly
rushed to an end.

So much to do but so little time

I wish all of you a happy and restful
Christmas and New Year,
and look forward to seeing everyone at the
conference in January and to meeting the
new members.

Regards
Janine

Send contributions for the next newsletter to:

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TABLE OF CONTENTS



	Pg
FROM THE EDITOR	1
TABLE OF CONTENTS	2
DETAILS OF SOME NEW MEMBERS	3
TRIBUTE TO PROFESSOR STANLEY SEAGRIEF	4
DIVING POTENTIAL OF THE EASTERN CAPE COAST	5
LIST OF THESES AND PUBLICATIONS ON MARINE AND ESTUARINE RESEARCH FROM THE UNIVERSITY OF PORT ELIZABETH, DEPARTMENT OF BOTANY	6
PSSA - 13TH CONGRESS	8



DETAILS OF SOME NEW MEMBERS



Jo-anne Aingworth is a M.Sc. student at the University of the Witwatersrand, whose research interests lie in the ecology and cultivation of macro-algal species. Her project under the supervision of Dr. A.T. Critchley deals with the effect of harvesting on biomass and agar content of a species of *Gelidium* from a selected site along the KwaZulu-Natal coast.
E-mail: JO-ANNE@GECKO.BIOL.WITS.AC.ZA

Susan Janse van Rensburg is presently a Botany Honours student at the University of Cape Town. She undertook a project assessing which understory seaweeds would be suitable to grow in the Two Oceans Aquarium, and will hopefully be addressing the desiccation tolerance in seaweeds as a M.Sc. project, under the supervision of Dr. J.M. Farrant and Prof. J.J. Bolton.
E-mail: SVANRENS@BOTZOO.UCT.AC.ZA

Russell Gillespie's research interests include the ecology and taxonomy of seaweeds, as well as resource ecology and ecophysiology. He is a Botany PhD student at the University of the Witwatersrand and his project is entitled "*Sargassum* spp. (Phaeophyta, Fucales, Sargassaceae) on the coast of KwaZulu-Natal, South Africa: A resource utilization and conservation perspective".
E-mail: RUSSEL@GECKO.BIOL.WITS.AC.ZA

Renee Joy Le Roux is a M.Sc. student at the University of Cape Town. Her project, under the supervision of Prof. J.J. Bolton, is titled "Laboratory culture studies of a fouling alga, *Cladophora glomerata*, occurring in irrigation canal systems". Besides general physiological investigations, her project aims to develop effective and viable growth control methods for this algal species.
E-mail: RLEROUX@BOTZOO.UCT.AC.ZA

Albertus (AJ) Smit is registered as a PhD student in the Botany Department of the University of Cape Town. His main field of research interest lies in the mariculture of commercially important seaweeds. His project is supervised by Prof. J. Bolton and Dr R. Anderson and deals with the ecophysiology and strain selection of *Gracilaria* sp. Through this project he hopes to gain a better understanding of the ecology and physiology of this species, factors that would be essential for its successful cultivation.
E-mail: ASMIT@BOTZOO.UCT.AC.ZA

Carol Kidger has her main field of research interest in toxicology. She is registered as a M.Sc. student at the University of the Witwatersrand, and her project is entitled "The biology of *Prymnesium patelliferum* (Prymnesiophyceae)".
E-mail: CAROLK@GECKO.BIOL.WITS.AC.ZA

The following members are all M.Sc. students in the Department of Plant and Soil Science at Potchestroom University. Their projects are all under the supervision of Prof. Braam Pieterse

Annelie Swanepoel is presently researching environmental conditions in the Loch Vaal near Vanderbijlpark, and her study is titled "An ecological study of the Loch Vaal". This project concerns water quality problems encountered by residents and recreational users of the area.
E-mail: PLBAS@PUKNET.PUK.AC.ZA

Antoinette Vermeulen is doing a project on the ecology of phytoplankton populations of the Vaal dam. Her research is carried out in the region extending from the Vaal Dam to the Vaal River Barrage at Vereeniging.
E-mail: PLBAV@PUKNET.PUK.AC.ZA

Sanet Janse van Vuuren is looking at the "Environmental variables, abundance and seasonal succession of phytoplankton populations in the Vaal River at Balkfontein". Sanet works just downstream of Antoinette and is studying the algal species present in the river, as well as at environmental variables influencing these populations.
E-mail: PLBMSJV@PUKNET.PUK.AC.ZA

Danie Traut is involved with the purification aspects of the Vaal River water and uses chemical analyses to determine water quality. His research site is Goudveld Water, Balkfontein and the title of his project is "Coagulation and sedimentation of algal cells and associated material in Vaal River water".
E-mail: PLBDFT@PUKNET.PUK.AC.ZA



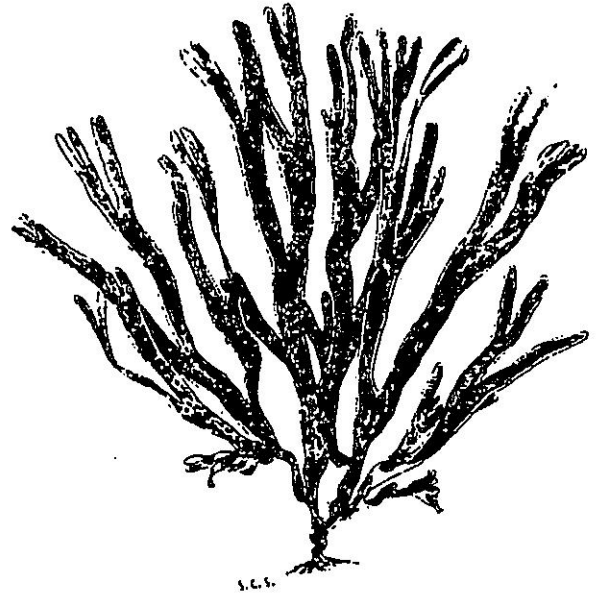
TRIBUTE TO PROFESSOR STANLEY SEAGRIEF (1927 - 1995)

CONTRIBUTED BY ROB ANDERSON, PRESIDENT,
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On 13 July 1995, Professor Stanley Charles Seagrief, former Head of the Department of Plant Sciences at Rhodes University, died in Cape Town after a short illness. He is survived by his wife Mary, daughter Rosemary and son Richard.

Stanley Seagrief was born on 21 February 1927 in Salisbury, Rhodesia. He was schooled at Prince Edward's in Salisbury, and went on to study Botany at Rhodes University, where he obtained a Master's Degree. He subsequently read for a Doctorate of Philosophy in Botany at the University of Cambridge, and began to establish a scientific reputation in the field of palynology.

He returned to southern Africa to a lectureship at the University of Natal, which he later left to take up a post at the University of Rhodesia, in Salisbury. He subsequently went to Rhodes University in Grahamstown, where his interest in seaweeds began to gather momentum. Over the years that followed, Stan Seagrief made an enduring contribution to our knowledge of the marine flora of South Africa's coasts.



Dictyota naevosa

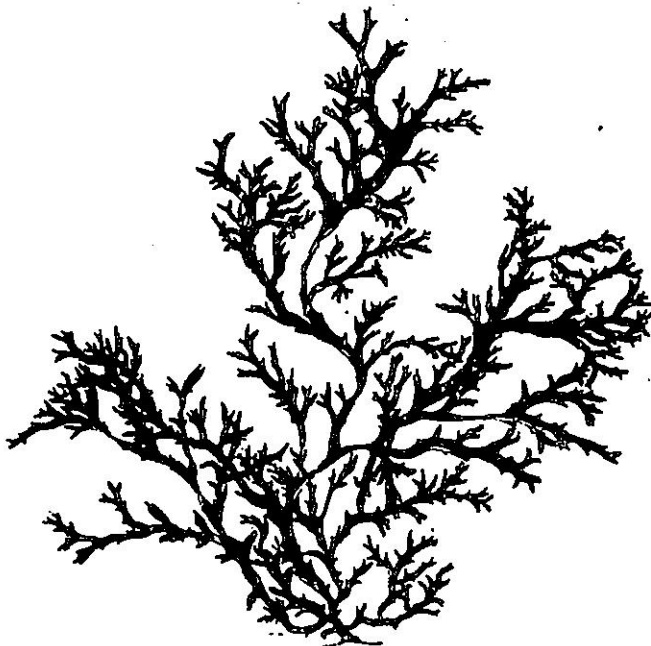
In 1966-1967 he spent a year at the University of California, Berkeley, studying South African seaweeds in collaboration with Professors G.F. Papenfuss and P.C. Silva.

Testimony to Stan's thoroughness may be found in his enormously useful "Catalogue of South African Green, Brown and Red Marine Algae", a work which is likely to remain invaluable to the Southern African seaweed systematist for decades to come.

A forthcoming flora of the seaweeds of the west coast of South Africa will honour him by naming a new genus of red seaweeds *Seagriefia*. He retired from Rhodes as Professor of Plant Sciences in February 1987, and he and his wife Mary moved to Kenilworth in Cape Town.

Perhaps the work for which Stan Seagrief will be most widely remembered is his beautifully illustrated "Seaweeds of the Tsitsikamma Coastal National Park", published in 1967. This combined two loves of his: art and seaweeds, and continues to capture the imaginations of scholars and laymen. He went on to exhibit seaweed paintings locally and internationally, and after his retirement to Cape Town produced many glorious illustrations of fynbos and garden flowers.

Stan will be remembered for his many wonderful qualities: cheerfulness, a brilliant yet gentle wit and a profound sense of fairness. To all who met him, he personified the word "gentleman". His passing has left us all the poorer, but his scientific and artistic legacy will long remind us of this exceptional friend and colleague.



Rhodophyllis reptans s. c. s.

DIVING POTENTIAL OF THE EASTERN CAPE COAST

ARTICLE MODIFIED FROM A M.Sc. THESIS TITLED "THE ECO-TOURISM POTENTIAL OF RECREATIONAL DIVING ALONG THE EASTERN CAPE COAST OF SOUTH AFRICA" BY JAMES BLACK, A VISITING BRITISH STUDENT. JAMES IS FROM THE INSTITUTE OF OFFSHORE ENGINEERING AT THE HERIOT-WATT UNIVERSITY, SCOTLAND. HE DID HIS RESEARCH PROJECT UNDER THE CO-SUPERVISION OF PROF. BRUCE ROBERTSON AT THE UNIVERSITY OF PORT ELIZABETH.

This project aimed to give an overview of diving practices and tourist potential along the Eastern Cape region from Knysna to the Wild Coast (Mkambati). The overall objective of the project was to document the existence of dive centres and dive clubs, the appreciation and utilisation of dive sites and the potential for future expansion within the domestic and international diving community.

Perceptions of divers of the Eastern Cape coast

Results obtained from questionnaires indicated that:

- * winter appears to be the popular month for diving, being closely followed by summer. Spring has the least diving activity, co-inciding with the windiest time of year.
- * divers appear to dive close to their base even if alternative sites are not far away.
- * Algoa Bay had the most preferred and frequented sites, followed by Port Alfred, and then East London.
- * Many divers had a high desire to dive along the Tsitsikamma coast, followed by the Wild Coast and then Knysna.
- * General locations compared to specific sites were commonly used by divers to describe sites where they like to visit. This suggests that sites were not as important as area location.
- * Divers indicated a desire to see marine reserves proclaimed in the Port Alfred area, along the Wild Coast and at sites in Algoa Bay.

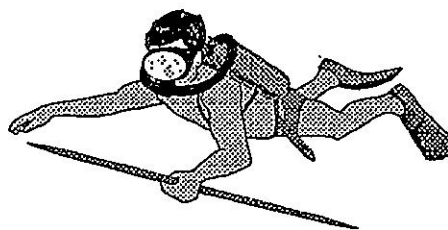
The following table indicates the results of an assessment as to the appreciation of Eastern Cape diving. The % indicates the number of divers that had undertaken that type of dive and the # indicates the mean appreciation score [Poor (1) Okay (2) and Excellent (3)] given by the divers.

APPRECIATION																	
Sea-life		Scenic		Wreck		Deep		Night		Shore		Boat		Shark		Drift	
%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#
95	2.5	95	2.5	63	2.2	61	2.2	66	2.5	82	2	24	1.4	63	2.6	44	2.2

*Divers that had dived abroad rated the diving along the Eastern Cape equally as those that had only dived locally.

An assessment was made as to divers perceptions regarding the assets and disadvantages of the Eastern Cape. Although

there was no leading attraction, a large number of assets were identified with the following showing importance: high life diversity of the region; the macro reefs; easy access to the coast; as well as the pristine nature of the area. Main drawbacks expressed were: low visibility; cold water; wind, weather and sea conditions.



The eco-tourism potential of the Eastern Cape coast
The study concluded that the Eastern Cape boasts a number of features that may be used for the promotion of diving in the province, these include :

- *Pristine soft coral and sponge reefs of a high aesthetic quality and which generally are in pristine condition.
- *Many sites where sharks are likely to be seen. There is a high degree of appreciation for such dives, but caution needs to be urged in the approach diving centres adopt to these creatures.
- *Prolific fish life, although not of a 'tropical' impression.
- *Good opportunities to see big game fish. The desire by many respondents to visit Tsitsikamma is testament to the attraction of seeing such fish stocks.
- *The number of wrecks that occur along the coast that can offer good diving experiences.
- *The structure of the coast provides walls, pinnacles, caves and gullies, thus making scenic dives worthy of praise.

Conversely, there are a number of constraints on Eastern Cape diving that limit its potential:

- *Visibility is erratic, especially in summer when rainfall is at its maximum, and spring when gales are common.
- *Water temperature is regarded as being cold, especially in the winter months when visibility is at its best.
- *Easterly winds predominate in spring, the start of the season, which may reduce local enthusiasm for the rest of the year.
- *Much of the coastline comprises of dune systems without ready access. Oceanic swells make shore entries by divers and boats difficult and uncomfortable. Oceanic currents at some sites necessitates comprehensive dive planning.

Despite these undesirable factors, conditions in the Eastern Cape are of a high enough quality to entice further custom and may be approached along three paths:

- 1) Continued development of the local diving community with more targeted advertising,
- 2) The promotion of the benefits of Eastern Cape diving to the South African domestic market.
- 3) The promotion of the Eastern Cape to international tourism, especially during the winter months.



**LIST OF THESES AND
PUBLICATIONS ON ESTUARINE
AND MARINE RESEARCH FROM
THE UNIVERSITY OF PORT
ELIZABETH, DEPARTMENT OF
BOTANY (FROM 1983)**

PAPERS AND REPORTS



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- Bate, G.C. and A. McLachlan (1987). Viewpoint - Surf zone discoloration by phytoplankton: the consequence of pollution? *Marine Pollution Bulletin* 18 (2): 66-67.
- Campbell, E.E. and G.C. Bate (1987). Factors influencing the magnitude of phytoplankton primary production in a high-energy surfzone. *Estuarine, Coastal and Shelf Science* 24: 741-750.
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THESES



Dobkins, G. (1993) A study of the status of eastern Cape rocky shores with special reference to anthropogenic impacts. MSc Thesis, University of Port Elizabeth, Port Elizabeth.

Harwood, B (1993) The benthic microalgal communities of small sandy beaches along the coastline of South Africa. MSc Thesis, University of Port Elizabeth, Port Elizabeth.

Rodrigues, F. (1994) The determination and distribution of microbenthic chlorophyll-a in selected south Cape estuaries. MSc Thesis, University of Port Elizabeth, Port Elizabeth.

Coetzee, JC (1995) Classification of South African estuaries based on plant communities. MSc Thesis, University of Port Elizabeth, Port Elizabeth.

Smit, A.J. (1995) Optimising *Glacilaria verrucosa* production in a laboratory based culture system. MSc Thesis, University of Port Elizabeth, Port Elizabeth.

Van Zyl, P. (1994) Ecology and management of the eastern Cape carrageenophyte, *Hypnea spicifera* (Suhr) Harv. PhD Thesis, University of Port Elizabeth, Port Elizabeth.

PSSA - 13TH CONGRESS UPDATE



21 - 24 JANUARY 1996, MEERENSEE, NEAR HERMANUS

Response has been very good, and we have about 45 delegates, with the promise of some 29 oral and 9 poster presentations.

Visiting lecturer - Dr. D. M. John

We are pleased to announce that the PSSA and Prof. John Bolton will together be bringing out Dr David John, (British Museum of Natural History) for the Congress. Dr. John will present a paper on "Biodiversity and conservation: an algal perspective". He is eminently qualified to address this topic, having authored or co-authored five books and some 120 research publications. He has worked widely on fresh-water and marine algae, particularly in West Africa and the UK, and is currently leading research on seaweed biodiversity as well as on the biological effects of bloom-forming filamentous and coenobial fresh-water algae.

Accommodation

Delegates will be accommodated in two cottages (6 persons each, with lounge, bathroom, and kitchen) or in rondavels. The rondavels have a bedroom, small lounge, bathroom and kitchenette, and normally sleep 2 or 3 people. A few delegates who require single accommodation will have a rondavel to themselves, but at an extra cost of R 20 per night. The accommodation is very pleasant, and set among trees, a short walk from all facilities.

Facilities

Just a reminder that there are: tennis courts, canoes, swimming pool, estuary and sea.



Programme

This will be drawn up once the last few abstracts are in. We hope to e-mail it to everyone in December. Basically, most of the papers will be scheduled for the Monday, the remainder for Tuesday morning, and fieldwork on the estuary for Tuesday afternoon and Wednesday morning. Local Nature Conservation officers have expressed great interest in the field work, and will be joining us for this section of the Congress.

We look forward to seeing you there!