

The *South African Journal of Antarctic Research*; an end to 26 years of publication

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Introduction

The *South African Journal of Antarctic Research* (*Suid-Afrikaanse Tydskrif vir Antarktiese Navorsing*) was first published in 1971. The purpose of starting this new publication was stated at the time as being three-fold. First, the journal should present the aims and achievements of the national Antarctic research effort as a whole by annual or bi-annual reviews of the advances made in each discipline; second, it should establish a rapid publication medium for preliminary results of special interest and, third, it should present researchers with a journal for papers that did not require the wide circulation of an international journal, but that should nonetheless reach a limited number of specialists in the field of Antarctic research. Irregular issues were thought to be a suitable medium for the intended rapid publications. In 1996, after an interesting lifetime and having served the Antarctic community in South Africa and elsewhere well, it was decided to terminate the journal. Research funds had shrunk, and since the journal was fully funded from the South African research budget for Antarctic research, administered by the South African state Department of Environmental Affairs and Tourism, the South African Committee for Antarctic Research decided that the current issue should be the last.

The purpose of this article is therefore to give a brief overview of the history of the journal, its successes and its failures. It was thought that this could serve as an appropriate epitaph. A full bibliography of all scientific contributions that have been published in the journal is given in a companion article.

History

The *South African Journal of Antarctic Research* was first published under the auspices of the South African Scientific Committee for Antarctic Research in 1971. A large part of the initiative for the establishment of the journal seems to have come from the Council for Scientific and Industrial Research (CSIR), since the first editorial committee was composed of some very senior

members of that establishment, including the newly appointed President, Dr S Meiring Naudé, Dr F J Hewitt and Mr R W Vice, the first editor. The venerable Prof Stanley P Jackson of the University of the Witwatersrand was the fourth member of the first committee. That the CSIR played such a stimulatory role was not unusual at that time since one of its *de facto* briefs was to instigate new research endeavours in South Africa. With the commercialisation of the CSIR in the late 1980s this particular role for this organisation has disappeared so that the stimulus for the establishment of a new scientific journal coming from the CSIR may currently seem strange.

The first edition commenced with a wide range of contributions; from a study of clothing and thermal comfort in Antarctica to a report on an investigation on the effects of a partial solar eclipse on the ionosphere at SANAE, the South African Antarctic base. Listings of members of the twelfth South African Antarctic expedition, the South African Scientific Committee for Antarctic Research and the South African national Antarctic programmes for that year were included in the journal, giving it a strong South African Antarctic programme flavour. The first edition boasted a stylistically attractive cover designed by Henk Burgers Studio. The first changes to the journal were already evident in the very next issue.

The 1972 issue appeared with a much less attractive cover, in shades of blue only and including Marion and Gough Islands in the map that graced its cover. This was probably done for two reasons: to save money by not having a multi-coloured cover and to be administratively correct by including all geographic regions in which South Africans were active as part of the Antarctic programme. This seems to have been a theme that has run through the history of this journal, namely that excellence had to be sacrificed to administrative correctness. In 1981 the Afrikaans title of the journal, *Suid-Afrikaanse Tydskrif vir Antarktiese Navorsing*, was changed to *Suid-Afrikaanse Tydskrif vir Navorsing in Antarktika* (South African Journal for Research in Antarctica). The original Afrikaans acronym for the journal, SATAN, had been offensive to some

and SATNA was felt to be a suitable compromise.

In the second issue the intended regular reviews of aspect of South African Antarctic research was started with an article by D C Neethling on the earth science programme. This was the last time that this initial intention for the journal bore fruit. In future years summaries of work have come from the publication of proceedings of special meetings (see Table 1), but the initial aim of annual or bi-annual reviews was not met. Recognising how difficult it is to get scientists to write such thorough reviews, this is perhaps not so unexpected.

Table 1
Special editions of the South African Journal of Antarctic Research

1. Supplement 1, 1976
Littoral ecology of Marion and Prince Edward Islands (Southern Ocean). A F de Villiers
2. Volume 8, 1978
Papers presented at the Symposium on the Biology of Marion Island.
3. Supplement 2, 1982
Geological investigations in Western Dronning Maud Land, Antarctica - a synthesis. L G Wolmarans and L E Kent
4. Volume 15, 1985
Preliminary results of the first of South Africa's Second International BIOMASS Experiment (SIBEX I) cruises to Prydz Bay, Antarctica.
5. Volume 16(2), 1986
The insects of sub-Antarctic Marion and Prince Edward Islands; with a bibliography and entomology of the Kerguelen Biogeographical Province. J E Crafford, C H Scholtz and S L Chown
6. Volume 16(3), 1986
Papers presented at a meeting on alien species in island situations with special reference to the Prince Edward and Gough Islands.
7. Volume 17(1), 1987
A Guide to the Otoliths of Southern Ocean Fishes. T Hecht
8. Volume 19(2), 1989
Marine plankton diatoms between Cape Town and the Prince Edward Islands (SW Indian Ocean). B P Boden and F M H Reid
9. Volume 21(1), 1991; Volumes 23(1 & 2), 1993; Volume 24(1 & 2), 1994
Benthic organisms of Marion and Prince Edward Islands. M L Branch *et al*
10. Volume 21(2), 1991
Thirtieth anniversary of Antarctic Treaty. D G M Miller, guest editor

For the first number of years the editorial board stayed relatively stable (see Tables 2 and 3), but in the late 1970s there were some rapid changes with the well-known zoologist, Dr John Skinner taking over as scientific editor from Mr R W Vice after a short period of shared responsibilities. In 1977 and 1978 Dr Graham Baker, editor of the South African Journal of Science, carried the can after which Dr Pat Condry took over the reins in 1978. Dr Condry was a biologist who had been active in the Antarctic programme for some time and now, at the Cooperative Scientific Programmes division of the CSIR, was in charge of the scientific aspects of the Antarctic Programme under contract for the state Department of Transport. He was therefore in an ideal position to foster South Africa's science in Antarctica as well as building up the journal. A regular, informal newsletter was started that succeeded in keeping the South African Antarctic community informed on developments within the program and abroad. A time of editorial stability for the journal ensued. Condry remained editor until the journal edition of 1989. As editor he also seems to have brought some stability to the selection of printers. For the first six years of the journal's existence no less than five different printing companies had been used to print the journal!

By the 1984 edition of the journal, the Cooperative Scientific Programmes of the CSIR were no longer responsible for the journal, but the newly formed Foundation for Research Development (FRD). By 1987 the Antarctic Programme had been moved from the state Department of Transport to the Department of Environment Affairs, who subsequently funded the journal. Initially the journal had been, in fact, for sale from the publishers, starting off with the princely sum of R2. It seems to have been recognised at an early stage that the administrative complexity of handling subscriptions to such a small journal were not worth the effort and the sensible decision was made that the journal should be made available free of charge to all interested parties. This has been done ever since.

After the 1989 edition, the responsibility for the running of the Antarctic research programme was taken away from the FRD and taken up by the then Antarctic subdirector within the Department of Environment Affairs. Dr Condry shortly after left the employ of the FRD and all files pertinent to the South African Journal of Antarctic Research were passed to the publication section of the Department of Environment Affairs. The Antarctic newsletter he had started came to an end. Attempts to re-establish it have been short-lived. Numerous enquiries from contributors whose manuscripts were now languishing lead to the author being requested to get the journal going once again. This took considerable effort since many documents had been lost and the correspondence with authors was incomplete.

With the backing of an enthusiastic editorial com-

Table 2
Editors of the South African Journal of Antarctic Research

R W Vice	1971 - 1976 (Scientific editor)
J D Skinner	1975 - 1976 (Scientific editor)
G S Baker	1977 - 1978 (Scientific editor)
P R Condry	1978 - 1989 (Scientific editor)
J R E Lutjeharms	1990 - 1995 (Editor in chief)

Table 3
Members of the editorial committee

S M Naudé	1971 - 1972
F J Hewitt	1971 - 1972
S P Jackson	1971 - 1972
R W Vice	1971 - 1976; (Scientific editor), 1979 - 1988
O A van der Westhuysen	1975
J Marx	1975 - 1976
J D Skinner	1975 - 1976; (Scientific editor), 1979 - 1992
J A Brink	1976
G S Baker	1977 - 1978; (Scientific editor), 1979 - 1988
P R Condry	1978 - 1989 (Scientific editor)
H Ridder	1986 - 1989
J R Krynauw	1989 - 1995
D G M Miller	1989 - 1995 (1991 Guest editor)
M S Potgieter	1989 - 1995
J R E Lutjeharms	1990 - 1995 (Editor in chief)
A D M Walker	1990 - 1995
J W de Klerk	1990 - 1993 (Technical editor)
A van Deventer	1990 - 1995; (Technical editor), 1994 - 1995
H J C van den Berg	1992 - 1994
R J van Aarde	1993 - 1995
A du Plessis	1993 - 1994
H Venter	1993 - 1994

mittee, able technical support and financial provision from the Antarctic directorate, the journal recommenced publication in 1991, with the 1990 edition. An attractive new cover, with a coloured illustration to an article in each edition, had been designed and contributions from abroad were actively solicited. This interest in foreign contributions was a new departure since for some years it had been policy that only participants in the South African Antarctic programme were allowed to publish in the journal. The editorial committee (see Table 3) set out to make good the backlog in manuscripts, to establish the journal as a reliable medium of publication and to aim in eventually getting it accepted for inclusion in the Science Citation Index. It was also decided to include a News Review section on South African Antarctic activities, to inform the Antarctic community in-

ternationally, and on international activities of particular local interest. This got off to a good start in volume 20, part 1, of the journal, but was stopped by request from the Antarctic division who wanted to start a newsletter of their own.

Rekindling an interest amongst serious researchers in publishing in a journal after it had been moribund for some time was no easy task. This therefore took a considerable period, as can be seen in the number of articles published (Table 4). Only by 1993 had the number of submitted manuscripts increased again and the 1994 edition (published in 1995) was one of the largest and most inter-disciplinary to date. However, funds had started to decrease, and since the relatively small publication expense of the journal had to compete with funding for research projects, many in the South African

Table 4
Number of articles published in the South African Journal of Antarctic Research

Volume	Year	Articles	Page	Volume	Year	Articles	Page
1	1971	10	37	14	1984	10	47
2	1972	9	56	15	1985	12	55
3	1973	12	67	16	1986	18	128
4	1974	12	61	17	1987	8	166
5	1975	12	86	18	1988	8	69
6	1976	9 + supplement	34 + 40 = 74	19	1989	7	83
7	1977	8	39	20	1990	8	71
8	1978	17	124	21	1991	35(special edition)	209
9	1979	7	40	22	1992	6	65
10/11	1981	10	40	23	1993	5	72
12	1982	9 + supplement	50 + 93 = 143	24	1994	10	124
13	1983	11	57	25	1995	5	93

Antarctic programme felt that the journal should be sacrificed. The editorial committee, on the other hand, argued that the journal was the showcase for the South African Antarctic programme, gave young scientists a friendly medium in which to gain expertise in publishing and that the increasing numbers of submitted manuscripts, also from abroad, indicated the continued need for this journal. Financial considerations were, however, overriding and the decision was taken to terminate publication after 26 years. It may be of interest to identify how the content of the journal had developed over these years.

Changing content of the journal

The disciplinary content of the journal varied considerably over the years (Table 5).

During the first six years of publication, upper atmosphere physics was by far the major contributor. This ceased abruptly in 1976 and since then no manuscripts on this subject were received. In the first editions there were no papers on terrestrial biology, including marine mammology, ornithology and entomology. From 1975 this disciplinary field became dominant and over the whole lifetime of the journal has contributed more than 35 percent of the total number of research papers published, the largest by far of all categories. A small, but quite stable flow of papers has come from the field of geology and geophysics (see Table 5).

Most of the earlier work was firmly terrestrially based because of the severe observational limitations of the South African supply ship the *RSA*. When a new supply and research vessel, the *S A Agulhas*, was acquired in 1977 it became possible to carry out oceanographic work as well and this is reflected in a small, but stable number of manuscript submissions to the journal in the fields of

physical, chemical and biological oceanography ever since. Over the whole period these latter contribution made up about 20 percent of the total of all research articles published.

Publication highlights of the South African Journal of Antarctic Research during this period coincide closely with major achievements in the research stemming from the South African Antarctic research programme. These journal highlights have usually come in the form of special publications. Initially these were supplements to the normal editions, but later were included in this series (see Table 1). A comprehensive synthesis of the littoral ecology of the Prince Edward Islands by A F de Villiers formed the first of these supplements. It was followed in 1982 by a similar synthesis on the geology of western Dronning Maud Land by Wolmarans and Keet and one on the insects of Marion and Prince Edward Islands in 1986 (by Crawford, Scholtz and Chown). A major milestone was the publication in 1987 of a comprehensive guide to the otoliths of Southern Ocean fishes by Prof Tom Hecht of Rhodes University, ably illustrated by his wife.

Papers presented at a symposium on the biology of Marion Island filled a volume (volume 8) of the journal in 1978 as did papers presented at a meeting on alien species at sub-antarctic islands in 1986. A major South African effort to make a valuable contribution to the second international BIOMASS experiment in the Southern Ocean was reflected by a suite of papers that filled volume 15 of the journal in 1985. This cruise, as well as soliciting the manuscripts for the volume, had been managed by Prof Brian A Allanson of Rhodes University.

A major monograph, many years in preparation, on the marine plankton diatoms between Cape Town and the Prince Edward Islands by Drs Brian P Boden and Freda Reid was published after Boden's untimely death

Table 5
Disciplinary distribution of articles published in the South African Journal of Antarctic Research

Volume	General	Human	Upper atmosphere	Physical, Chemical, Oceanography	Meteorology	Geology	Glaciology	Terrestrial biology	Terrestrial botany	Biological Oceanography
1	1	1	5	1	1	1	1			
2			6			3				
3	1		7			2	2	1		
4			5			4		3		
5		1	4			1		5	1	
6	1		2		1			4		2
7						1		4		2
8								11	4	1
9	1					1		4		1
10/11								7	2	1
12		1				1		4		3
13	1					2		6	1	
14	2					1		6		1
15	2			5				6		5
16				2		1		10	3	2
17	1					1		2	2	2
18						1		5		2
19				2		1		3		2
20				2		1		4		1
21	33					1				3
22						1		3		2
23				1		1		3		1
24	1				1			5		2
25	2					1		1	1	
Total	47	3	29	16	3	25	3	91	14	33
%	18	11	1	6	1	9	1	35	5	13

in 1989. Mrs Margo Branch in turn published a large number of papers based on an exhaustive survey of the benthic organisms of the Prince Edward Islands. These filled part 1 of volume 21 of the journal, but overflowed into volumes 23 and 24 as well. For this enormous research effort she received the M Sc degree with dis-

inction from the University of Cape Town. Each of these major publications on a single topic established a benchmark of knowledge on the subject at the time. Some, such as the comprehensive monographs on diatoms, otoliths and benthic organisms, will not be superseded for many years and these particular volumes of

the journal have become much used and, in certain cases, collector's items.

A major effort went into the publication of a special volume to commemorate the thirtieth anniversary of the signing by South Africa of the Antarctic Treaty (volume 21, part 2) published in 1992. The original idea for this volume came from Mr Denzil Miller of the Sea Fisheries Research Institute who also acted as guest editor for the part. It brought together papers from over 40 scientists, administrators and interested parties to give an overview and evaluation of South Africa's interest in Antarctica over more than three decades. Of particular interest was a paper by the Director of the Sea Fisheries Research Institute, Dr L Vere Shannon, illustrated with hitherto unpublished photographs on early Antarctic research. A very thoughtful and thought provoking review of South African research in the Antarctic and its achievements was written for this volume by Prof W Roy Siegfried of the University of Cape Town.

Although the journal had wanted to build for itself a quite limited and modest publication niche, and although its policy on foreign participation altered from period to period, scientists from a number of prestigious international institutions contributed to the journal over the years. These have included individuals from the Australian Antarctic Division, the Australian National University and the University of New England, Australia; the British Antarctic Survey, the Institute of Terrestrial Ecology and the Edward Grey Institute of Field Ornithology, Britain; the New Zealand Wildlife Service; the University of British Columbia and the Dalhousie University, Canada; the Institut des Sciences de l'évolution and the Ecole Normale Supérieure, France; the University of Bergen, Norway; the Alfred-Wegener-Institut für Polar- und Meeresforschung, Germany; the Zoologisches Institut, Austria; and the Scripps Institution of Oceanography, USA.

Achievements of the journal

To a large extent the South African Journal of Antarctic Research has met the aims set out by its founders 26 years ago and in some respects has achieved even more.

It has created a place where many of the results of South Africa's research endeavour in the Southern Ocean, subantarctic islands and Antarctica could be presented, particularly those results that were of limited international interest. A listing of the names of individuals who have, at some time or other, published in the journal reads like a veritable Who's Who of South African Antarctic science, oceanography and marine biology. The aim of publishing submitted articles rapidly in a journal that appears only once a year has been difficult, but this has been accommodated by having two or three parts per year, and also having special supplements to speed the publication of monographs. In the

last few years these avenues having been largely precluded due to financial constraints, thus hindering one of the original aims. The further aim of the initiators of the journal, namely to present the goals of the South African Antarctic Programme in its full scope and complexity never was achieved. Certain individuals and groups felt that their results would receive a better readership in international journals. This opinion was probably justified and, wisely, no pressure was ever put on participants in the South African Antarctic programme to publish in this journal. The concept of regular review articles on the achievements of South African Antarctic research was not continued after the first few issues, perhaps to the detriment of the journal and its readers.

Regular inclusions in the journal of lists of the names of participants in South African Antarctic management committees, of teams at the Antarctic base and of teams on the subantarctic islands have chronicled this valuable information. Annual listings of climatological information from all the meteorological stations has preserved this useful information. In this way the journal has served a beneficial repository and archival role.

During the past few years the criteria for publication in the journal were sharpened, overseas reviewers for all manuscript were selected with great care, considerable efforts were made to increase the speed with which manuscript were processed and, as a result of these efforts by the editorial board, the quantity and quality of manuscripts increased. For the first time unsolicited manuscript from abroad were submitted in small, but growing numbers. This is now to end. The debilitating effect of the closure of the journal on the South African Antarctic research effort and its standing internationally will be difficult to determine and to quantify. One can but hope that it is minor.

Acknowledgements

As the last Editor in Chief of the South African Journal of Antarctic Research I would like to take this opportunity to thank all the persons who have served on the Editorial Committee of the journal since the 1990 edition for their sterling and unselfish contributions as well as their unflagging support. I would like to thank in particular Mrs Adelheid van Deventer and Miss Jackie de Klerk for their consistent and hard work amongst many other competing duties. They ran the journal on a daily basis and were the friendly face and voice of the journal to contributors, referees and enquirers. I thank the Department of Environmental Affairs and Tourism for their financial support of the journal and the invitation to steer it through the ups and downs of the past nine years.

The biology, physico-chemistry and geology of a nunatak pond at Valterkulen, western Dronning Maud Land, Antarctica

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Aspects of the biology, physico-chemistry and geology of a remote inland nunatak pond are described. The pond is unusually located in that it occurs in a rocky depression forming part of the nunatak. It occurs in the upper part of a Kullen-type sill which forms part of the c 1000 Ma Borgmassivet Suite. Crude layering in the sill suggests that its morphology is highly undulating, and that the depression in which the pond occurs is controlled by this primary structure. The pond water apparently has a warmer temperature regime and remains unfrozen for longer than the other ponds in the area, in the wind-scoops of nunataks. These thermal properties are presumably due to heating from the surrounding rock, which absorbs and radiates more heat than ice does. Ionic concentrations of the pond water are highest at the centre of the pond, and high relative concentrations of Ca and Cl ions are indicative of cryogenic meromixis. The HCO₃ ion concentration (relative to the Cl ion concentration) is particularly high, being similar to the highest value for this ion previously recorded in other antarctic water-bodies. The pond water chemistry reflects that of a deposit coating the stones at the periphery of the pond. A dense, benthic algal mat covers the substratum. It is, however, depauperate in floral and invertebrate species. The benthic invertebrate community comprises only two species of rotifer and one species of tardigrade. These species have superior reproductive capacities compared to some counterparts elsewhere in Antarctica.

Aspekte van die biologie, fisiese-chemie en geologie van 'n afgeleë, binnelandse nunatakpoel word beskryf. Die poel is buitengewoon geleë, aangesien dit in 'n rotsagtige depressie, wat deel uitmaak van die nunatak, voorkom. Die poel lê in die boonste gedeelte van 'n Kullen-tipe plaat wat deel uitmaak van die Borgmassivet-suite. 'n Ruwe gelaagdheid laat blyk dat die plaatmorfologie hoogs golwend is en dat die depressie waarin die plaat voorkom as gevolg van

hierdie strukturele kontrole ontstaan het. Dit het skynbaar 'n warmer temperatuurstelsel en bly langer onbevries as ander poele in die gebied wat in windholtes van nunatakte voorkom. Die termiese eienskappe is waarskynlik die gevolg van verwarming van die omliggende gesteentes, wat meer hitte absorbeer as die ys in die omgewing. Ioniese konsentrasies van die poelwater is die hoogste in die middel van die poel, en hoë relatiewe konsentrasies van Ca- en Cl-ione daar dui kriogeniese meromixis aan. Die relatiewe HCO₃-ioonkonsentrasie is besonder hoog en kom ooreen met die hoogste beskryfde relatiewe konsentrasie vir hierdie ioon in ander antarktiese waterliggame. Poelwaterioonkonsentrasies weerspieël tipies die chemiese samestelling van 'n neerslag wat klippe aan die rand van die poel bedek. Die chemie van die water is moontlik verwant aan die geologiese en geomorfologiese omgewing waarin die poel voorkom. Terwyl 'n dik bentiese algemat die substratum bedek, is dit arm aan flora- en ongewerwelde dierspesies. Die ongewerwelde diergemeenskap bestaan uit twee rotiferspesies en een luidierspesie, wat almal reeds beskryf is as spesies wat elders in Antarktika sterker voortplantingseienskappe het as hulle mede-inwoners.

Introduction

An investigation of terrestrial antarctic ecosystems by South African biologists was recently initiated (Ryan & Watkins 1989, Ryan *et al* 1989, Cooper *et al* 1991). While this has focused on the Roberts-kollen group of nunataks (Ahlmannryggen, western Dronning Maud Land, Fig 1), a breeding site of the snow petrel *Pagodroma nivea*, other nunataks in the region have also been visited in order to sample their biota. The biology of the nearby Vesleskarvet, where a new base is