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NEWS-LETTER OF THE SOUTH AFRICAN ASSOCIATION OF BOTANISTS  
NUUSBRIEF VAN DIE SUID-AFRIKAANSE GENOOTSAP VAN PLANTKUNDIGES

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R.G.N. YOUNG: Ralph George Norwood Young, well known for his plant collections in Transvaal, Rhodesia and northern Angola, died on 4 July 1979 while visiting his birthplace in Florence, Italy, where he was born on 26 June 1904. He attended Lausanne University during 1921 - 22 and from 1922 to 1925 studied botany and zoology at Cambridge University, graduating B.A. In 1926 he came to South Africa in the interests of his health and enrolled at Witwatersrand University, obtaining the B.Sc. (Hons.) degree in 1927 and M.Sc. in 1929. In July 1927 he attended the S<sub>2</sub>A<sub>3</sub> meeting in Salisbury and took the opportunity to collect around the Victoria Falls and in Zambia. From January to September 1928 he worked in the Transvaal Museum herbarium and, during 1930 - 31, farmed in the Transvaal. Sponsored by the British Museum (Nat. Hist.), he undertook a collecting expedition from Zambia, through southern Zaire to northern Angola during 1932 - 33, in which he was assisted by his first wife, née Marion Emma Blenkiron, whom he married in 1928. After a further short spell in the Transvaal Museum herbarium from September 1933 to September 1934, he was employed in the Agricultural Faculty of Pretoria University from 1934 - 45, where he assisted Prof. J.M. Hector, Professor of Agricultural Botany, with his grassland studies. Having private means, he was then without work for some years, but continued his botanical observations, undertaking several collecting journeys in the Transvaal until about 1951. For the next few years he spent his time between South Africa and Europe, including a period of study at the Conservatoire Botanique in Geneva, after which he obtained teaching posts in Switzerland from 1959 to 1964. He returned to South Africa in 1965 and worked in various clerical and teaching posts until 1974. He came regularly for several months to the National Herbarium, Pretoria, before his final visit to Europe in 1979. (L.E. Codd.)

INTERNATIONAL ASSOCIATION FOR PLANT PHYSIOLOGY: The second newsletter for 1979 from IAPP has been received and parts of interest and relevance to SAAB members are extracted below. The newsletter is written by the Secretary/Treasurer of IAPP, Dr C.P. Whittingham of Rothamsted, England.

Organisation of IAPP: After an appeal for the payment of 1979 subscriptions by the relevant representative societies, monies received brought the IAPP income for 1979 to 2 000 Swiss francs. IUBS has indicated that it will make a contribution of US \$ 700 for 1980.

This all means that IAPP activities are sadly curtailed due to the lack of funds. The Secretary would welcome any ideas regarding fund raising.

The Secretary notes that IAPP can only recognise one person in each member-country and that person must be the nominated National Representative. Council of SAAB appointed Prof. N. Grobbelaar as our representative.

Meetings sponsored by IAPP: A conference is to be jointly sponsored by the Canadian Society of Plant Physiologists (CSPP) and the International Association of Plant Physiologists (IAPP) from 14th to 17th July 1980 at Calgary, Alberta with the theme "The Physiology and Biochemistry of Plant Productivity". The contact address is — Dr J. Bewley, Department of Botany, University of Calgary, Calgary, Alberta, T2N IN4, CANADA. IAPP is very glad to be the co-sponsor for this meeting. If sufficient members of IAPP attend the Conference a meeting of National Representatives will be held in Calgary.

Many National Societies have stated their view that a proliferation of meetings, congresses, symposia etc. is undesirable. It has been suggested that IAPP should continue to act as a 'clearing house' for information concerning meetings amongst the international fraternity. Plant physiology is now organised at three levels:

- IAPP representing activity at the world level;
- Federated groups at the continental level;
- National Societies at national level.

Many Societies consider that meetings should take place most frequently at the national level, less frequently at the continental level and probably rather infrequently at the world level. IAPP should try to define the specific objectives of a meeting which would make it appropriate for a world meeting, as distinct from a meeting at the other two levels. IAPP also has a role to play in representing plant physiology at such established international groups as IUBS and can play a useful role in dealing with requests for funding for specific purposes where these are appropriate to IUBS interests. However, in order that it can do this the Secretary must be notified at least two years in advance of any activity so that the necessary application can be agreed and submitted.

International Directory: Whilst there are differences of opinion as to the relative importance of producing an international directory, IAPP receives a number of requests

for information of this type during the course of a year. On balance, it appears desirable that an up-to-date and accurate directory should be produced and indeed IUBS have made their subvention for next year on the understanding that this will be a main objective of IAPP. The Secretary is therefore asking each National Representative to send him details of their National Society, Group or Association giving a complete list of members and addresses with, if available, their special field of interest. Prof. Grobbelaar has informed him that SAAB will participate.

Technical Publications in Plant Physiology: One of the objectives of IAPP laid down in its Constitution is "Facilitation for publication of plant physiological matters by promoting co-operation between existing journals".

The Federation of European Societies of Plant Physiology (FESPP) has been considering this matter, in particular with respect to European journals. The Secretary should like to hear from Societies in other parts of the world how far they consider there is a need for IAPP to take a more active role in this respect than it has done hitherto.

IAPP International Prize: The response to the proposal of the institution of an International Prize for IAPP was again mixed, partly because many countries were unable to suggest how the necessary finance could be obtained. There seems to be general agreement that the institution of a prize would draw the attention of younger workers in plant physiology to the existence of IAPP and could allow young and brilliant workers to become acquainted with activities in an international perspective more rapidly than may be the case at present.

The Secretary has been informed that SAAB is unable to help as it is also investigating means of increasing its own funds and is likewise experiencing difficulties.

IAPP Booklet: In 1973 IAPP produced a booklet "Tentative Recommendations of Terminology, Symbols and Units in Plant Physiology". One or two countries have found this booklet extremely useful but the vast majority of member-societies have not requested any copies. IAPP has a considerable number of copies available for circulation and if SAAB members are interested in using such a booklet copies are available at a nominal cost.

International Union of Biological Sciences (IUBS): At the 20th General Assembly of IUBS in Helsinki it was resolved to urge members to orientate their specific research where possible for the improvement of agriculture. Among specific areas designated were:

Plant Productivity - Photosynthesis - Mineral nutrition - Biological nitrogen fixation - Plant breeding and genetic experimentation - Stress - Equipment, energy inputs, etc. - Pest control.

Post-Harvest Treatment - Food losses - Food technology - Marketing and distribution - Food policies and organisation.

Food Resources - Agricultural sources - Aquatic sources - Non-conventional sources.

The Secretary has been asked to inform the IUBS Secretariat as to how far any of the member-societies of IAPP feel they could contribute to the development of studies in these specific areas.

What's New in Plant Physiology: This Newsletter used to be circulated each year to IAPP members free of charge but it has now become a commercial publication. The 1978 subscription price was USA \$3.00 per year, foreign subscribers \$4.00; libraries \$5.00. Members who wish to continue to receive this publication must make their own arrangements direct with: What's New in Plant Physiology, 9411 Warfield Road, Gaithersburg, Maryland 20760, USA.

Forthcoming Meetings: A long list of conferences, symposia and workshops was included with the newsletter. If details are required please contact Prof. Grobbelaar, Department of Botany, University of Pretoria.

KIRSTENBOSCH JUBILEE FELLOWSHIP: The 1980 Kirstenbosch Jubilee Fellowship has been awarded to Mr R.O. Moffett, Senior Lecturer in Botany at the University of the Western Cape. The members of the Selection Committee were most impressed by the general high standard of the applications for this Fellowship and it proved very difficult for them to reach a final decision.

Rodney Oliver Moffett was born in Gumtree Orange Free State, on 26 December 1937 and matriculated at St Andrews School, Bloemfontein. After obtaining a Diploma in Forestry with distinctions, at Saasveld, George, he was employed as a forester and later as a horticulturist until in 1972 he became a full-time student at the University of Stellenbosch. He was an outstanding student, receiving his B.Sc. cum laude in 1972, B.Sc. (Hons.) cum laude in 1975 and his M.Sc. cum laude in 1978. His thesis, "A monographic study of Sarcocaulon" is an excellent piece of work. Before taking up his present post at the University of the Western Cape, he was employed as a Senior Technical Officer in the Botany Department of the University of Stellenbosch and later as a lecturer in Botany at the University of the North.

He has already made a significant contribution to botanical research and is the author of a number of scientific papers and publications, including several on the genus Sarcocaulon.

He is at present working on the formidable task of revising the difficult and complicated genus Rhus (Anacardiaceae) for the Flora of Southern Africa and intends to go overseas in search of type material. The Jubilee Fellowship will be used to finance his overseas studies.

SAMESTELLING EN PUBLIKASIE VAN 'N ATLAS WAT HANDEL OOR EKOLOGIES-SENSITIEWE GEBIEDE OP 'N NASIONALE SKAAL; MEMORANDUM AAN DIE RAAD VIR DIE OMGEWING:

Die groeiende bewuswording van die belang van omgewingsaspekte in die basiese beplanning- en uitvoeringsaktiwiteite van beroepsdissiplines en organisasies asook ontwikkelingsagentskappe het tot gevolg dat die Departement van Omgewingsbeplanning en Energie gereeld navrae en raadplegings vir inligting in dié verband ontvang. Hierdie neiging het die besef laat ontstaan dat daar 'n dringende behoefte bestaan aan die koördinerende, samestelling en publikasie van 'n Atlas wat handel oor ekologies-sensitiewe gebiede op nasionale skaal. Dit dien verklaar te word dat die huidige projekte van NAKOR wat handel oor die insameling van inligting (beide kwantitatief en kwalitatief) oor bestaande en voorgestelde natuurbewaringsgebiede, deeglik in aanmerking geneem sal word by die samestelling van sodanige Atlas.

Natuurbewaringsgebiede vorm egter slegs een van die komponente van ekologies-sensitiewe gebiede soos hieronder gelys:

Ekologies-sensitiewe Gebiede

Definisie

Enige land of water habitat of ekosisteem wat gevoelig is vir direkte of indirekte eksterne invloede as gevolg van grondgebruik wat die natuurlike balans daarvan tydelik of onomkeerbaar nadelig kan versteur.

Die volgende tipes van gebiede word voorlopig onderskei:

- Natuurreserve en unieke habitate met inbegrip van Seereserve (geproklameerd en voorgestel) wat onder Nasionale, Provinsiale en private beheer staan.
- Waaisandgebiede (hoofsaaklik sandduine aan die kusgebied)
- Kusmere en getyrieviere
- Riviere, vleie, panne en damme
- Bergopvanggebiede en sponse
- Ander sensitiewe opvanggebiede (bv. Vaalrivieropvanggebied)
- Eilande in riviere en teenoor die kus
- Inheemse woude en unieke plantgemeenskappe
- Vloedvlaktes
- Hoë-potensiaal landbougronde
- Sensitiewe/steil hellings asook unieke berge en koppe.

Die oorhoofse koördineringsfunksies van die Departement stel hierdie Departement in staat om 'n primêre rol te speel ter verwesenliking van die behoefte en wel in die volgende opsig:

1. die daarstelling van oorhoofse riglyne met betrekking tot uitvoering van die projek,
2. die insameling en koördinering van toepaslike inligting vanaf die verskillende Staatsdepartemente, Swart State en privaat instansies, asook deur Gidsplanaksies,
3. die kartering van sodanige inligting en
4. die voorbehoud van sekere gebiede onder Artikel 4 van die Wet op Omgewingsbeplanning (Wet No. 88 van 1967).

Die omvang van die taak, asook die beperkings van mannekrag, tyd en fondse noodsaak egter dat die formaat en doelwitte van die Atlas behoorlik bestudeer en beplan moet word. In hierdie verband maak die Departement die volgende voorstelle:

#### Atlas formaat:

Weens voorgaande besprekings is dit duidelik dat die projek in 2 fases aangepak en uitgevoer sal moet word, naamlik:

- 'n makroskaal fase wat daaruit bestaan dat inligting oor ekologies-sensitiewe gebiede op 'n growwe skaal gekarteer sal word en
- 'n mikroskaal fase wat die verfyning van bogenoemde sal behels op die streeks en plaaslike vlak.

Dit sal dan veral ten opsigte van die makroskaal fase wees waar die Departement 'n belangrike bydrae kan maak en wat gesien word as die logiese beginpunt van die projek.

#### Voorkeure

Ten einde sistematiek aan die projek te verleen word voorgestel dat inligting oor ekologies-sensitiewe gebiede op die basis van die Nasionale Fisiese Ontwikkelingsplan ingewin en gekarteer moet word. Voorrang sal egter gegee word aan gebiede met lopende of vroeë ontwikkelingsaktiwiteite, asook gebiede wat deur Beplanningsadviesraad van die Eerste Minister aangedui is.

- Voorkeur I - die Metropolitaanse gebiede te wete NFO Streke
- 39/3 (Kaapstad/Saldanha Kompleks)
  - 40 (Port Elizabeth/Uitenhage Kompleks)
  - 41 (Durban/Pietermaritzburg Kompleks)
  - 42 (Pretoria/Witwatersrand/Vereeniging Kompleks)
  - 32 Richardsbaai/Noordkus Natal
- NFO Streke 27+28 (met Witbank/Middelburg as hoofsentra)
- 17/18 (Upington as hoofsentrum)
  - 21 (Oos-Londen as hoofsentrum)

### Voorkeur II

As gevolg van die geweldige uitbreiding en toename van menslike aktiwiteite in die kusgebied, word voorgestel dat die NFO Streke wat die kusgebied omlin in hierdie kategorie ingedeel word, naamlik:

- NFO Streke 1, 2, 5, 6, 8, 10, 35, 36 en Walvisbaai.

Die Natalse Stad- en Streeksbeplanningskommissie het pas 'n verslag met gegewens oor die huidige ontwikkelingsaktiwiteite en bewaringstatus van alle riviere aan die Natalkusgebied gepubliseer.

Hierdie inligting vorm 'n goeie basis, maar sal binnelands uitgebrei moet word om die totale NFO Streke, soos hierbo, in te sluit.

'n Soortgelyke projek vir alle riviere in die Kaapsekusgebied is reeds geprogrammeer en aan die gang. Dié projek word uitgevoer deur die Suid-Afrikaanse Nasionale Komitee vir Oseanografiesnavorsing, wat insluit onder die Koöperatiewewetenskaplikeprogram van die WNNR, in opdrag van die Hulpkomitee vir die Kusgebied van die Beplanningsadviesraad van die Eerste Minister.

### Voorkeur III

Hierdie groep sluit in NFO Streke 4, 23, 25, 26, 30, 32.

### Aanbeveling

Daar word aanbeveel dat die RO hierdie behoefte in die breë benadering onderskryf en 'n formele voorlegging versoek waarin 'n raamwerk vir die uitvoering, fondsbehoefte, mannekrag en programmering vir die projek uiteengesit word.

SAGP is 'n lid van die Raad vir die Omgewing.

### WORKING GROUP FOR DATA ANALYSIS IN ECOLOGY AND RELATED FIELDS:

At the invitation of Professor B.H. Walker, an informal meeting of ecologists interested in data analysis was held at the University of the Witwatersrand on the 30th October. At this meeting, the development of multivariate techniques in ecology was sketched by Prof. Walker and this was followed by brief descriptions by Dr J.W. Morris of recently-released computer programmes developed at Cornell University, U.S.A. Dr M.J. Greenacre (Statistics: UNISA) contributed his ideas on correspondence analysis and its possible rôle in ecological studies.

The meeting resulted in the valuable exchange of ideas and experience and it was decided that such discussion sessions should be held on a regular basis. The Working Groups of the British Ecological Society, and, in particular, the

Mathematical Ecology Group, were mentioned as examples to be followed. It is hoped to hold two one-day meetings of this kind every year. It is emphasized that the Working Group activities will be oriented towards problems of the user, and we therefore encourage non-mathematical biologists to participate. Until a more formal structure is operating, meetings will be arranged by Prof. Walker and Dr Morris and will be announced in this Newsletter. If you would like to be kept informed of developments or have any comments or suggestions, please write to or contact Dr J.W. Morris at the Botanical Research Institute, Private Bag X101, Pretoria (tel. 861164).

Since the meeting, two further avenues for the Working Group to follow have been proposed. Firstly, the Northern Transvaal branch of the South African Association of Botanists suggested some time ago that a course in multivariate methods in ecology and taxonomy should be organized. Such a course could be organized and run by this Working Group in conjunction with the SAAB Committee. A second function of the Working Group could be the development and maintenance of a register of computer software packages available in South Africa for the use of all interested researchers. A centre, such as the Botanical Research Institute, could be nominated as the central "clearing house" for the distribution of computer programmes and their documentation. Dr Morris is initiating such a register and would appreciate hearing from data analysts who may have programmes which they would like to have included. (J.W. M.)

TERRESTRIAL ECOSYSTEMS NEWSLETTER: The following note is extracted in toto from the December 1979 issue and will no doubt produce comments from members of SAAB.

Biological Data-Recording in Southern Africa: A Proposal

A recent paper by Boshoff et al (1978, S Afr J Wildl Res 8 (4) : 145-149) has mentioned the need for a standardized biological data-recording scheme for southern Africa, based on the latitude/longitude system for record citation. Several countries e.g. America, Britain, Australia, New Zealand, already have forms of data-recording schemes operating for the various scientific disciplines and in this field southern Africa is far behind.

Biological data-recording in the subcontinent would benefit by a standard scheme in which spatial and temporal vertebrate distributional data could be collated. Data for rare and endangered species throughout the region could thus easily be updated, sorted, extracted and plotted. Such data generally consists of past and present distribution, abundance and population trends, and habitat and taxonomic details if necessary.

The major aims of such a system would be to determine the current conservation status of the taxa involved and, through periodic updating, to detect any changes in this status; to identify those gaps where additional data collection is necessary to ob-



tain a reliable summary of the situation; to identify those fields/localities where research or conservation action is urgently required; and to stimulate data collection by all available and interested parties.

A computerized databank offers safe storage of data as files can easily be duplicated and, to facilitate interpretation of survey data, optional base maps showing soil type, vegetation, land use, topography, climate and geology can be produced. The databank system described by Boshoff et al (op cit) is operating successfully at the Percy FitzPatrick Institute of African Ornithology at the University of Cape Town and the Cape Department of Nature and Environmental Conservation. It was developed primarily for bird data and therefore certain categories/codes may need slight alteration to accommodate the relevant vertebrate group. It will also be possible to extend the system to certain select groups of invertebrates and plants and also some ecological data.

Recently several interested parties have discussed the need for the introduction of a scheme such as that mentioned above, on a national basis, with a view to the eventual establishment of a Biological Records Centre for southern Africa, run by a suitable body, possibly under the auspices of the CSIR. While the scheme proposed by Boshoff et al (op cit) may not satisfy all potential participants in its present form, it is nevertheless a start and could form the basis for a later system. As a trial it has been decided to incorporate relevant vertebrate data from the Fynbos Biome Project into this scheme. The scope of the scheme is indicated by the fields on the data input card (<sup>x</sup>obtainable from this Newsletter on request) and prospective contributors are urged to study it with a view to making suggestions for changes where this is deemed necessary. It is imperative that there is concurrence on the database format before any scheme is launched. Thus comments will be welcome and can be forwarded to this Newsletter.

LIMNOLOGICAL SOCIETY, 1980 CONGRESS: The 1980 Annual Congress of the Limnological Society of Southern Africa, which is to be held in Grahamstown, will take the theme "Water Year + 10, and then?", emphasising the fact that 1970 was officially Water Year in South Africa, and examining the developments of the decade in terms of progress in both hydro-development and the science of limnology, within southern Africa.

The Congress Committee hope to be able to invite four overseas scientists, in the fields of fisheries biology, primary productivity, the ecological impact of water regulation — with particular emphasis on the regulation of rivers — and

zooplankton ecology. In addition, it is hoped that apart from members of the Limnological Society, workers in the fields of civil engineering, waste water treatment, geography, hydrology and general biological disciplines, including estuarine ecology, will be attracted to attend the congress.

The congress will take the form of major plenary sessions centered on the development of future water resources and aquatic research in Southern Africa, as well as individual research contributions. The presentation of poster papers on a variety of aquatic topics will be encouraged. Furthermore, the congress will be designed to generate informal discussion working groups to iron out specialist problems. To this end, space will be made available in the Journal of the Limnological Society of Southern Africa for publication of summary findings of such working groups so that new ideas, innovations, and major problems can be aired publicly in print.

Five workshop sessions on programmes funded by the Inland Waters Ecosystems Group (I.W.E.) of the Co-operative Scientific Programmes section of C.S.I.R. will be presented. The programmes are: the Touw River programme within the Wilderness Lakes region of the southern Cape run by the Institute for Freshwater Studies, Rhodes University; the P K le Roux Dam project run by the Institute for Freshwater Studies, the J L B Smith Institute for Ichthyology, Rhodes University and the Cape Department of Nature and Environmental Conservation; the Wuras Dam project, run by the Institute for Environmental Sciences and the Departments of Botany and Zoology of the University as well as the Department of Nature Conservation of the Orange Free State; the Hartebeespoort Dam modelling project, run by the National Institute for Water Research of the C.S.I.R., and the Umgeni River project, run by the University of Natal, Pietermaritzburg. These workshops will be open sessions, but particularly directed at the working groups themselves.

A number of suitable limnological tours are anticipated. The following are under consideration by the Organizing Committee: visits to the P K le Roux Dam on the Orange River, and the Swartvlei Research Programme in the Wilderness Lakes area (both of which are open to a limited number of participants); excursions to local estuaries, and Lake Mentz, and a pre-congress tour to the Amatola Mountain streams in the area of Hogsback.

RHODES UNIVERSITY, GRAHAMSTOWN: A Master's degree in Limnology is to be offered this year by the University in response to a need to provide specialist training in the scientific study of lakes, rivers and our wetlands systems. The University is uniquely placed to offer such a degree as it possesses a number of research groups which specialise in the major areas of concern: Hydrology; Physical and Biological Limnology, and Fisheries Science.

The training offered and the award of the degree will add materially to the country's

existing resources of trained limnologists, so essential to research into and management of the Republic's wetlands.

Entrance qualifications: Normally a B.Sc. degree with honours or that deemed equivalent will be required such that honours graduates in chemistry, physics, microbiology, plant science or zoology and graduates in civil engineering or hydrology will be eligible.

Duration of course: It is intended that the course will run from February 1st to January 31st of the year following. This is very largely occasioned by the fact that the theoretical component of the course is extensive and that the research component would normally be expected to begin in September of each year.

Course structure: The degree will be divided into two parts:

Part 1: The theoretical material as outlined in the syllabus below and expected to occupy the candidate full time from February to August.

Part 2: A practical-research project programme normally extending from September to January. During this period candidates will be required to work upon a research project at one or other of the department's field stations or in Grahamstown. It is imperative that the research topic be well defined and that it occupy no more than four months during the spring and summer.

Syllabus:

1. Water as a physical, chemical and biological environment : Hydro-geochemical and biological cycles.
2. The main components of the aquatic environment with specific reference to Africa : Rift Valley lakes; endorheic lakes; coastal and estuarine lakes, and man-made impoundments. Current views on classification. Characteristics of rivers.
3. The principles of physico-chemical limnology : hydrological cycle; hydro-mechanics of lakes; thermal properties; optical properties; the dissolved gases -  $O_2$ ,  $CO_2$ ,  $H_2S$ ; phosphorus, nitrogen and silica cycles and organic matter in lakes; iron and redox potentials, and interaction between sediments and water phase.
4. The principles of biological limnology: primary production; structure of plant communities; macrophytes; phytoplankton; phytobenthos. Talling's photosynthetic model and its application to pelagic photosynthesis. Methods of measurement: Gran's Winkler method,  $^{14}C$  uptake. Secondary producers: zoobenthos; zooplankton, and littoral fauna. Zoogeography of rivers, lakes and estuaries. Ecophysiological studies; food and feeding rates, assimilation, respiration, excretion, growth and reproduction.

Productivity: estimates of standing crop and turnover time; responses to trophic conditions, and to major environmental change. The principles of microbial ecology in freshwater with particular stress upon autotrophic and heterotrophic function; microbial role in biogeochemical cycles.

5. Theory of bioenergetics: the flow of energy through the lake and river system and in particular the contributions of Lindemann, Odum, Klekowski, Winburg and Phillipson.
6. Principles of applied limnology: man-made lakes in Africa; eutrophication and the role of nitrogen and phosphorus in aquatic plant growth. Bacterial and faunal responses to changes in nutrient loading of lakes and rivers.
7. The current ideas on the application of the principles of systems analysis to the understanding of aquatic ecosystems.

Examinations:

1. There will be three 3-hour papers.
2. The results of the research project will be presented in thesis form.
3. The degree may be awarded with distinction.
4. The examinations will be subject to external moderation and examining.

Facilities:

Institute for Freshwater Studies	Grahamstown
Hydrological Research Unit	Grahamstown
J.L.B. Smith Institute	Grahamstown
Swartvlei Research Station	Swartvlei, Sedgefield
Reservoir Research Station	P.K. le Roux Dam, Van der Kloof
Subtropical Lake Research Station	Lake Sibaya, M'Bazwane, Maputoland

The University enjoys the co-operation of the Cape Provincial Administration Department of Nature & Environmental Conservation, the Natal Parks Board, the Department of Water Affairs and the Government of Kwazulu.

POST VACANT, Data bank manager: A graduate (preferably with Botany or Biology as a major) and at least some exposure to computers is urgently required in Pretoria to take over the day to day running of PRÉCIS the National Herbarium computerised data bank which is now operational. Duties include supervision of query submission and overall responsibility for maintenance of the system. Training will be given. There will be ample scope for original research based on the data bank.

Please direct enquiries to the Director, Botanical Research Institute, Private Bag X101, Pretoria, 0001. Tel. 861164.

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