

FORUM BOTANICUM

vol. 17, No. 5

December 1979
Desember

ISSN 0015 - 847X

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

BOTANICAL RESEARCH INSTITUTE - REPORT FOR 1978/79 (continued from vol.17, No.4.):

Botanical Survey Section: The function of the Botanical Survey Section is to study the vegetation of South Africa and its ecological relationships. This work covers three main fields of activity: (1) The identification, description and mapping of various vegetation classes; (2) The study of the ecological relationships between different types of vegetation - mutually and with the environment - and also of the various processes and mechanisms that govern the behaviour of plant communities; (3) The development of various methods and techniques required for ecological studies of vegetation. In this work there is close co-operation with the Data Processing Section, to which ecosystems research has been transferred.

Veld types of South Africa: At the time of Mr J.P.H. Acocks's death in May 1979, the revision of the veld types of the western half of the country was approaching completion. He had completed writing up all the 25 Karoo and False Karoo types together with the west- and south-coastal types, and part of the Kalahari Thornveld. These amount to 32 veld types in all, subdivided into 89 variations. The revision excludes the Mountain Fynbos and the False Fynbos. Part of the revised treatment of Kalahari Thornveld remains to be done.

Western Transvaal bushveld survey: The final report on this project was presented as a Ph.D. thesis by Dr F. van der Meulen and published in the series Dissertationes Botanicae as Band 49 (1979), the title being "Plant sociology of the western Transvaal Bushveld, South Africa: a syntaxonomic and synecological study".

Zululand coastal dune survey: The impact of mineral prospecting on dune vegetation in Reserve 10 (Zululand) was uneven, the seaward slope of the dune being the most sensitive area. Regeneration of vegetation on the sampling lines was good. A preliminary evaluation of conservation priorities by Dr P.J. Weisser has shown most of the area to be of secondary character and low in conservation priority.

Wilderness Lakes study: The macrophyte encroachment problem of the Wilderness Lakes in the Cape Midlands was studied by Dr P.J. Weisser at the request of the Lake Areas Development Board (George). An increase of macrophytes such as Potamogeton pectinatus, Phragmites australis and Typha latifolia subsp. capensis in some areas was found and mechanical control suggested.

Vegetation survey of the Cape of Good Hope Nature Reserve: For the assessment of the rate of infestation of pest-plants (or plant invaders) during the study period starting in 1966, Mr H.C. Taylor carried out the re-enumeration of pest plant density on 29 sample plots during the year. The geographic position of 10 of these permanent samples, previously lost, had to be re-established by compass and distance-measure.

A primary survey of Rooiberg Mountain Catchment Reserve near Ladismith, Cape: The completion of the quantitative floristic survey by Mr H.C. Taylor confirmed the expected high degree of correlation between the physiognomic and phytosociological classifications reported on last year. The result of the reconnaissance survey, including management recommendations, were embodied in a 47-page report, with five appendices, 28 photographs and maps and a phytocoenon table submitted to the Secretary for Forestry, as requested.

A classification based on structural-functional characteristics of the vegetation: In this, the first year of the project, Mr B.M. Campbell spent a considerable time on methodology. He completed a literature survey, tested ideas for the classification and analysis of structural-functional data, and wrote a paper on methodology. In the latter part of the year, he began his sampling programme. A third of the necessary data has now been collected.

Distribution and autecological aspects of the Hakea pest plants: Mr S.R. Fugler has drawn and analysed distribution maps for the three South African pest Hakea spp. and improvements in the present H. sericea mechanical control programme have been suggested. Evidence indicates that all infestations of H. suaveolens and H. gibbosa can be eradicated in South Africa except the H. gibbosa infestation in the Kleinriviersberge and adjoining mountains. A management programme for these mountains has been proposed. Methods for estimating the density and fruit load of H. sericea for a given infestation have been designed and the phenology of the pest Hakea species has been studied.

Fynbos biome project: In October the Task Group searched for and found a suitable site to replace the proposed west coast study site which had been burnt.

Mr H.C. Taylor prepared a chapter on "The Phytogeography of Fynbos" for a volume to be published by the CSIR synthesizing present knowledge on the Fynbos Biome.

Semi-detailed survey of the vegetation of the western and southern Cape coastal lowlands: Mr C. Boucher's sampling of the natural vegetation along transects through the first priority western coastal foreland progressed as follows: (1) Langebaan Lagoon to Saron - 100 km long: 150 floristic samples; preliminary sampling complete. (2) Buck Bay to Bainskloof - 70 km long; 100 floristic and 100 physiognomic samples; 22 km sampled. (3) Table Bay to Stellenbosch - 35 km long; 26 samples; 10 km sampled. (4) Orange River mouth to Table Bay littoral zone - 82 samples; sampling complete. Existing computer programmes were modified and new programmes were written to analyse these data. Approximately half of the data has been coded for analysis.

Littoral vegetation of the southern Cape: To provide quantitative data for a contribution to a book on dry coastal ecosystems (in Elsevier's Series Ecosystems of the World), a phytosociological study of littoral vegetation of the southern and western Cape is being conducted. During the year floristic data from 163 relevés were collected along the southern Cape coast from Cape St Francis to Cape Point. Provisional indications are that the sand-dune flora is remarkably uniform but there is considerable variation in the flora of the rocky coasts.

Orothamnus project: Mr C. Boucher visited the known populations of the marsh rose (Orothamnus zeyheri) in the Kogelberg State Forest during December 1978. Population size and development of selected individuals are monitored annually. Preliminary results indicate that it takes at least eight years for half the individuals in a population to reach flowering maturity. A total of 1 180 individuals was recorded in the area.

Aquatic ecology: The Braun-Blanquet classification of the "water-plant" communities of Natal together with a paper entitled: "A preliminary classification of the water-plant communities of Natal", intended for publication, have been completed by Mr C.F. Musil. Water-plant communities have been set out in a synoptic table and each described in detail. The communities follow a broad salinity and pH gradient and have been divided into 6 major groups. These are (1) marine, (2) estuarine, (3) brackish water, (4) moderately fresh to slightly brackish water, (5) fresh-water, and (6) communities found in fast-flowing fresh water.

Mr C.F. Musil has completed more than a year's field measurements, at fortnightly intervals, of growth rates and chemical composition of water-hyacinth plants, together with chemical and physical parameters of the water and environment. Present synthesis of data has revealed an apparent linear relationship between diffuse radiant flux and growth rate of water-hyacinth plants. This suggests that light is the primary factor limiting water-hyacinth growth, where previously

the effect of light was considered to be minimal. Mr Musil has practically completed a detailed report, critically evaluating the literature, methods and culture techniques employed, that will contribute to the "methods" section of the final report.

NAKOR National Conservation Plan: Dr J.C. Scheepers and Miss B.K. Drews continue to co-ordinate the NAKOR National Conservation Plan for the Department of Environmental Planning and Energy, in co-operation with an officer of that Department. A staff change in the latter Department has interrupted continuity, but progress continues. Approval has been obtained and funds earmarked for the setting up of a data bank for efficient storage, retrieval and processing of the rapidly accumulating data, using the computer of the Department of Agricultural Technical Services.

Data Processing and Ecosystem Studies Section: The mandate of this relatively new Section is the provision of data processing facilities for research purposes to the rest of the Institute as well as undertaking plant ecological research at the ecosystem (function) level. The largest data processing task under development, the computerization of the National Herbarium, is almost complete. Our contribution to the Savanna Ecosystem Project at Nylsvley, determination of biomass relations and seasonal biomass change in dominant tree and shrub species has made good progress and a report on biomass relations has been published. The Savanna Ecosystem Project data bank is administered by this Section, under the control of Dr J.W. Morris. He is also responsible for co-ordination of modelling activities as well as research in the Decomposer Component of the Project.

The National Herbarium Data Bank has changed to the status of a production system, although the last few tests of programmes forming part of the system are still being done. An intensive process of correcting errors in the data is under way and will be completed soon by Dr H.F. Glen. The production of realistic maps showing the distribution of specimens selected from the data bank is a facility which is in the process of being added to the system.

In a project being undertaken for the Savanna Ecosystem Project by Dr M.C. Rutherford, it has been found that a considerable proportion of photosynthate is "lost" to the formation of wood material in savanna vegetation but that water relations are important in interpreting radial stem growth measurements. In another project, he has found that increased fire damage to Ochna pulchra canopies results in a greater proportion of basal coppice material. Tree height has been found to influence the relative wood-leaf composition of basal coppice material and to influence several other plant properties following upon fire.

Economic Botany Section: The work programme of the section, under Mr M.J. Wells, consists of plant utilization research (including ethno- and palaeo-ethno botany), weed research, plant geography, the conservation of plant resources, and the provision of an information service spanning these fields. In addition the section hosts work on the new palaeo-flora of southern Africa.

Until recently the accent of the section's work was weed research, but this has diminished as a result of i) the temporary transfer to Kew of the leader of the weed research team (Mr C.H. Stirton); ii) the conclusion of Mr Wells' investigation of nassella tussock - for which control measures have now been instituted; iii) the decision of the Department to establish a Weed Research Centre, which will in future co-ordinate work (including botanical work) on weeds.

At present the section is completing its work on a number of weed projects that will be basic to the work of the new Weed Research Centre (e.g. the provision of a national weed list), and is preparing to register new projects in the field of plant utilization, and the conservation of plant resources. These projects will fall under the newly appointed team leader, Mr T.H. Arnold.

Plant utilization: Mr T.H. Arnold has commenced a literature study on the utilization of South African plants, as a preliminary to registration of an umbrella project. The first component of this is a project on barrier plants.

Other projects will include research on the origins of indigenous crop-plants. Mrs B. van Gass planted out, and harvested seed of all entries in our Citrullus (water melon) collection, under the direction of Dr B. de Winter. Several new entries, including one from the Seychelles, were added to the collection which now includes an interesting range of wild species and eco-types.

Miss C.A. Liengme returned after completing her B.Sc. Hons at Natal University, Pietermaritzburg. She finalized her report on the ethno-botany of the Tsonga of Gazankulu, and completed a literature survey of the ethno-botany of tribal peoples in South Africa. This will form the basis for registration of an umbrella project on ethno-botany and will provide the background for more detailed research on Tsonga ethno-botany, which she is about to begin.

Conservation of plant resources: The first stage of a project to conserve germ plasm of primitive crop cultivars and of rare and endangered indigenous species is under way, and a survey of over 200 literature references has been completed by the project leader, Mr T.H. Arnold. Work on this and on the related plant utilization project will be carried out by two new appointees: Miss K.J. Duggan, from the University of Natal in Durban; and Miss L. Henderson, from the University of the Witwatersrand.

Weed research: A first national weed list was drawn up, mainly from the literature, by Mr G.B. Harding, prior to his leaving for Natal University (PMB) where he has been seconded for his honours course. The list has since been added to by other staff members, notably Mr A.A. Balsinhas, and now includes the names of over 700 plants of which about 30% are indigenous.

This list is to provide a basis for sorting weeds into categories, distinguishing weed-complexes, making weed status evaluations, and can ultimately provide the basis for legislation.

Material of all the exotics on the list, and the species of world-wide distribution, has been sent to Mr C.H. Stirton at Kew, for checking of identification, so that the weed status of these species can be evaluated on the basis of available literature.

Pilot studies have also been completed on two methods of carrying out weed surveys to provide qualitative and quantitative information for future weed status and weed-complex evaluations. In the first of these we experimented with sampling agronomic weeds. Messrs Harding and Balsinhas and Mrs van Gass carried out this experiment: collecting soil samples in cultivated fields in winter, germinating weeds from the soil samples under nursery conditions, and then comparing the species found in the field with those germinated in the nursery. This method needs considerable refinement, but the results obtained suggest that it can be used to enable us to carry out a country-wide survey with the help of local collectors, thus reducing survey costs and the use of expert manpower.

The second of these projects, carried out by Misses Henderson and Miss K.J. Duggan, was a survey of woody, exotic invaders in the Pretoria-Witwatersrand-Vereeniging area of the Transvaal highveld. Approximately 30 woody species were found to be encroaching in streambank and roadside habitats and in the open veld. Melia azedarach (syringa), Acacia dealbata (silver wattle) and Acacia mearnsii (black wattle) are the commonest woody, roadside invaders, whilst Salix babylonica (weeping willow) and Populus alba (white poplar) are the commonest woody, streambank invaders. Arundo donax (Spanish reed) is common in both habitats, and is replacing Phragmites in some places.

Mrs W.G. Gaum continued her work on a cyto-genetic evaluation of the Lantana camara complex, under the direction of Dr T.B. Vorster. Chromosome counts have been completed for all the variants so far found in South Africa. The accent is now on the search for embryo-sac abnormalities. The investigation is still incomplete, but at this stage there are no grounds for considering any of the variants to be safe to cultivate.

A quick survey of local nurseries, carried out by Mrs D.M.C. Fourie and Mr A.A. Balsinhas showed that most of them are still selling Lantana camara although it is

a declared noxious weed.

Mr C.H. Stirton will complete the bio-taxonomic aspects of the Lantana study when he returns from Kew in 1980.

A highlight of the year was the appearance of the book 'Plant invaders: beautiful but dangerous' compiled and edited by Mr Stirton for the Cape Department of Nature and Environmental Conservation. It enables the layman to identify 26 of the worst plant invaders of the Cape Province, and provides information on how to counter the threat that they pose.

A short study of Prosopis (mesquite) in the northern Cape, carried out by Mr G.B. Harding, showed that of the three species recorded as having been introduced to South Africa two are invasive, namely P. glandulosa (honey mesquite) and P. velutina (velvet mesquite). The third species, P. pubescens (screw bean), does not appear to be causing trouble.

The long awaited book on poisonous plants by Mr J.H. Vahrmeyer is still at the printers, awaiting publication. The text has been translated from Afrikaans into English by Mrs E. Brink of the research unit at Grahamstown and Mr Wells has edited both versions.

Miss S.M. Bulley, a new staff member from Natal University in Durban, has started a two-year autecological study of nassella tussock (Stipa trichotoma). She is stationed at Cape Town University where she is under the direction of Dr A.V. Hall. The object of this study is to find ways of modifying and improving our control strategies for this plant.

Plant geography: Dr J.M. Anderson continued his survey of the distribution of woody plants in the Transvaal. Two hundred and eighty field listings of woody plants were made. Listings have now been made in nearly 1 700 of the 17 000 1/16th degree squares that occur in the survey area. The first objective, a 10% sampling cover, has been achieved for nearly the whole area, whilst the ultimate objective, a sampling cover of 25%, has been achieved in over half the area. The listings are being used to plot the distributions of all the 1900 species of indigenous woody plants that occur in the Transvaal.

The palaeoflora of southern Africa: It has been decided to describe the fossil plants of southern Africa in a 'flora' as a companion series to the extant flora series. The work is in the hands of the husband and wife team Drs J.M. and H.M. Anderson. Good progress has been made on an introductory volume and one on the Molteno Formation. Already some 5 000 fossil plant specimens have been

collected, the photographic plates illustrating about 1 000 specimens have been prepared, and the text, tables and maps are nearing completion. This project is of world-wide interest since in order to cover the South African fossil flora adequately the whole of Gondwanaland will have to be treated.

Information service: Mrs D.M.C. Fourie, scientific information officer for the Institute, handled 283 requests for information about economic plants and their utilization or control. These included about 440 identifications. Particular interest was shown in the newly declared noxious weeds: Sesbania punicea and Pere-skia spp., and in the utilization of indigenous Euphorbia spp. and the Mexican rubber bush (or guayule) Parthenium argentatum.

Colour-slide collection: Nine hundred and fifty labelled colour slides of plants were added to the Institute's collection which is curated by Mr Balsinhas.

Garden Section: Mr J. Erens continued in charge of the garden whilst Mr D.S. Hardy was in charge of the nursery. There were 1 127 accessions to the garden during the year including Mr Hardy's collection of 500 succulents from South West Africa. Mrs B.C. de Wet and Mrs K.P. Clarke continued with the mammoth task of labelling and record keeping of plants.

In the garden the most striking development was in the savanna biome area where Mr H.J. de Villiers and Mr T.A. Ankiewicz landscaped the area adjacent to the Silvertown road, building rock-covered koppies that will soon be the home of wild figs and other lowveld species. All the beds in this biome area have now been demarcated, and most of them have been sown to Eragrostis curvula, which provides an attractive, soil-binding cover. The areas between the beds have been planted with lawn grass, and 120 savanna trees were planted out. The water reticulation system of the savanna biome area is now complete except for the 'Aloe koppie'.

Progress in the coast forest biome area, where Mr Ankiewicz is in charge, has also been rapid. Most of the excavation of soil and landscaping of an area for swamp forest development has been done. The reticulation system has been completed and, as in the savanna biome area, paths to the plantings serve a dual function by also providing access to the water pipes. One hundred and fifty trees and shrubs were added to the coast forest plantings.

The fynbos biome has not fared so well, replantings of Proteaceae having suffered during the hot, dry summer of 1978/79. The summer display, consisting of about 25 000 Pelargonium, Gazania, Arctotis, Dimorphotheca, Diascia, Felicia and mesem. plants, was effective but also suffered from the drought, whereas the earlier display of spring annuals was outstanding.

Floral decorations were provided for about 80 special occasions during the year. We were also glad to have contributed to the South African gold medal exhibit at the Chelsea Flower Show.

S.A.A.B. ANNUAL CONGRESS - PIETERMARITZBURG, JANUARY 1980: The second circular for the Congress was recently circulated to members. The Congress will be held at the Pietermaritzburg campus of the University of Natal from 17 - 19 January, 1980. It will be followed by an excursion to the Natal Drakensberg from 20 - 22 January, 1980. An alternative post-congress excursion to the lower Natal South Coast to study marine algae is also being organised for the period 20 - 22 January. Part of the proceedings of the Congress will be devoted to: i) a symposium on 'Phycological Research in South Africa', ii) a symposium on 'Wood Anatomy'.

Papers may be submitted for inclusion in these symposia and in the general sessions of the Congress. Poster demonstrations are invited. Please submit Titles and abstracts to the Secretary, Organising Committee (SAAB), Department of Botany, P.O. Box 375, Pietermaritzburg, 3200, as soon as possible.

BOTANY DEPARTMENT, UNIVERSITY OF PORT ELIZABETH: The Great Trek of the Science Faculty from the Bird Street campus in town to the new Campus-by-the-sea at Summerstrand eventually took place in June this year and dreams of the beautiful, new spacious facilities became reality. For those who might wish to visit us at some time, the Botany Department is now housed in the north wing of the Biological Sciences building.

Packing a 12-year old department into boxes and crates, moving it ten kilometres, unpacking it and then getting it functioning properly once again was no small achievement. However, everything went extremely smoothly and we are now in full swing.

The facilities in the new building are certainly amongst the best in the Republic. They include research laboratories and equipment for post-graduate and staff research in Plant Physiology, Anatomy and electron microscopy, Taxonomy and Marine Botany. Numerous walk-in and other controlled environment chambers give the department tremendous potential and scope. Further, the inclusion of facilities for the use of radio isotopes has added a new dimension to our research programmes.

A beautiful herbarium complex consisting of a museum, herbarium (currently containing 10 000 specimens), drying, poisoning and record rooms forms another exciting part of our new domain. Our electron microscopy facilities comprise

well equipped preparation and darkrooms as well as a Zeiss EM 9 microscope. Other facilities include seminar and conference rooms as well as teaching laboratories for undergraduate practicals.

The settling-down phase seems to be completed now and the tasks awaiting the department are the development of our glass house and the establishment of our long awaited botanic garden.

The changes in our department have not been limited to purely material things, but have occurred in our staff situation as well. Professor Albie van de Venter has resigned to take up the post as Head of a Weeds Research Unit which is to be established by the Department of Agricultural Technical Services in January 1980. The rest of the academic staff has, however, not changed with Professor Chris Small, Dr Bruce Robertson, Dr Ria Olivier and Mr Brian Whiting constituting the teaching staff. Dr Robertson has just returned from a year's sabbatical leave in the Plant Reproduction Laboratory of Dr David Cass at the University of Alberta in Edmonton, Canada.

STAND VAN SAKE TEN OPSIGTE VAN SUID-AFRIKAANSE TYDSKRIF VIR PLANTKUNDE: Nadat daar in Januarie 1979 by die Algemene Jaarvergadering besluit is om met die hulp van die Raad vir Wetenskaplike Publikasies (RWP) voort te gaan om 'n nasionale tydskrif van plantkunde in die lewe te roep selfs al moet dit in kompetisie met Bothalia en/of die Journal of South African Botany geskied, is daar met die RWP onderhandelings aangeknoop. Die RWP het die SAGP egter versoek om nogeens en met hul aktiewe betrokkenheid, te poog om een of albei die bestaande plantkundige tydskrifte te oorreed om in die te stigte S.A. Tydskrif vir Plantkunde op te gaan.

Hernude onderhandelings is begin en ons kan slegs hoop dat dit hierdie keer meer suksesvol sal wees.

NAGRAADSE OPLEIDING EN GRADE IN LIMNOLOGIE AAN DIE UNIVERSITEIT VAN DIE ORANJE-

VRYSTAAT: Ten einde die potensiaal van Suid-Afrika se beperkte varswaterbronne ten volle te benut, bestaan daar 'n dringende behoefte aan opgeleide wetenskaplikes in die chemie, fisika en biologie van ons binnelandse waterekosisteme. Die U.O.V.S. bied vanaf Januarie 1980 die volgende kursusse en grade in Limnologie aan om in die behoeftes te voorsien:

1. BACCALAUREUS SCIENTIAE (HONNEURS)

- 1.1 Toelatingsvereistes: Kandidate in besit van 'n B.Sc.- of B.Sc. Agric-graad met ten minste een van die volgende as hoofvakke: Biochemie, Chemie, Dierkunde, Entomologie, Fisika, Grondkunde, Mikrobiologie, Plantkunde.

1.2 Duur: Normaalweg 1 (een) jaar.

1.3 Kursussamestelling:

a) Fisiese-chemiese limnologie: Ongeveer 8 (agt) lesings per week in eerste semester; een vraestel van 3 (drie) uur.

Onderwerpe: Oorsprong en eienskappe van binnelandse watermassas. Morfometrie. Lig en troebelheid. Temperatuur. Waterbeweging. Soutgehalte. Siklusse van opgeloste gasse en vaste stowwe. Organiese verbindings. Mineralisasie.

b) Biologiese limnologie: Primêre produseerders: Ongeveer 8 (agt) lesings per week in eerste semester; een vraestel van 3 (drie) uur.

Onderwerpe: Oorsprong en tipes. Groeikinetika. Aanpassing, omgewingsvereistes, produktiwiteit, metabolisme, wisselwerkinge en suksessie ten opsigte van vaatplante en algbevolkings. Waterverryking.

c) Biologiese limnologie: Sekondêre produseerders en ontbinders: Ongeveer 9 (nege) lesings per week in tweede semester; een vraestel van 3 (drie) uur.

Onderwerpe: Oorsprong en tipes. Aanpassings, voeding, metabolisme, produktiwiteit, wisselwerkinge en suksessie ten opsigte van bentiese fauna, soöplankton en vis. Ontbinders. Wateroordraagbare siektes. Sedimente. Paleolimnologie. Varswaterekosistiem. Modelling.

d) Waterkwaliteit en waterbeheer: Ongeveer 7 (sewe) lesings per week in tweede semester; een vraestel van 3 (drie) uur.

Onderwerpe: Wateraanvraag en -aanbod. Uitvloeisels en watervoorsiening. Waterbeheer. Watergebruike. Waterkwaliteitsprobleme. Behandeling-prosesse.

e) Capita selecta: Hoogstens 4 (vier) lesings per week uit toepaslike kursusse (bv. Hidrologie, Geohidrologie) ter aanvulling van kennis. Mondelinge eksamen van 1 (een) uur.

f) Praktika: Gevorderde praktika om by bogemelde kursusse aan te pas. Beperkte navorsingsprojek.

2. MAGISTER SCIENTIAE: Toelatingsvereistes en verhandeling: Kandidate in besit van 'n B.Sc. Hons.-graad in Limnologie. 'n Verhandeling oor 'n goed-gekeurde onderwerp word vereis. Persone in besit van 'n B.Sc. Hons. - of B.Sc. Hons. Agric.-graad in 'n verwante vakrigting met minstens 1 (een) jaar toepaslike ondervinding mag op aanbeveling van die Limnologie-komitee deur die Senaat toegelaat word.

3. PHILOSOPHIAE DOCTOR: Toelatingsvereistes en proefskrif: Om vir die Ph.D.-graad toegelaat te word moet die kandidaat in besit van die M.Sc.-graad in Limnologie wees tensy die Senaat spesiale vergunning tot toelating op aanbeveling van die Limnologiekomitee verleen. 'n Proefskrif gebaseer op 'n goedgekeurde navorsingsprojek word vereis.

Limnologiekomitee: Die Limnologiekomitee van die Fakulteit van Natuurwetenskappe is verantwoordelik vir limnologiese opleiding, oefen beheer oor alle toelatings uit en wys studieleiers/promotors aan.

Die opleiding van wetenskaplikes in die B.Sc. Hons.-kursus sal deur ongeveer twaalf personeellede van die Departemente Dierkunde, Mikrobiologie en Plantkunde asook die Instituut vir Omgewingswetenskappe behartig word. Uitgebreide navorsingsfasiliteite (in die laboratorium en veld) is in al die studierigtings beskikbaar terwyl pogings aangewend word om studiebeurse aan studente beskikbaar te stel.

Reëlins sal getref word om Engelssprekende studente tegemoet te kom indien u meer besonderhede verlang, tree assebilief in verbinding met:- Dr A.J.H. Pieterse, Koördineerder: Limnologie, Instituut vir Omgewingswetenskappe, Universiteit van die Oranje-Vrystaat, Posbus 339, Bloemfontein, 9300.

MASTER'S DEGREE IN BIOLOGICAL SYSTEMATICS, UNIVERSITY OF NATAL, PIETERMARITZBURG:

All biological investigations rest on a base provided by systematics (which includes all aspects of the relationships amongst organisms, their classification and nomenclature), since knowledge of the identities of the organisms involved is essential. This is particularly true for ecological studies which are becoming increasingly important in attempts to minimise environmental degradation. Despite the fundamental importance of systematics (also termed taxonomy by many), the training of systematists has thus far been completely inadequate in Southern Africa. In order to rectify this situation, the Departments of Entomology, Microbiology & Plant Pathology and Zoology at the University of Natal in Pietermaritzburg have agreed to co-operate in the implementation of a programme leading to the award of a Master's degree in biological systematics, as outlined below. In recognition of this, the following resolution was adopted at the Linnean Commemorative Symposium of the Royal Society of South Africa held in Cape Town on 16th August 1978: "Recognising the urgent need for more trained taxonomists, many national and international organizations have stressed that Universities should provide formal training in taxonomy. The proposed Master's degree in biological systematics to be offered by the University of Natal at Pietermaritzburg is therefore to be welcomed. The delegates at this Symposium strongly support the establishment of this course."

Degree level: Successful completion of the programme will lead to the award of the degree of Master of Science in the department of greatest relevance to each candidate. If the practical investigation involved becomes greater in extent than normally required, registration of the candidate may be reconsidered and altered to registration for the degree of Doctor of Philosophy.

Commencement Date: February 1980 or as soon thereafter as required.

Duration: A minimum duration of two years will be usual, of which the first nine to twelve months will necessitate residence in or near Pietermaritzburg; the remainder may be completed elsewhere.

Pre- and Co-requisites: An Honours degree in a biological science will be required, except by special arrangement. In addition, supplementary reading and courses in basic evolutionary theory, population biology and genetics, biometry or statistics, computer programming, translation of significant foreign languages and other necessary topics will be required of candidates with insufficient training in these areas.

Basic Course Structure: The first six to nine months will be devoted to an intensive study of the theoretical and philosophical bases of systematics, as well as the basic methods used in any systematic investigation. In addition, those specialised techniques which are applicable only to particular groups of organisms (such as methods of collection, specimen preservation, curation of collections, etc.) will be taught by members of the departments concerned. The general section will operate in the form of discussion sessions attended by all students and participating staff members, and student progress will be monitored continuously. After satisfactory completion of the basic section, the candidate will devote all of his or her time to a problem involving the systematics of a group of organisms of interest to the student. This study will lead to the production of a thesis, in publishable form, which will normally be less extensive than that required for a Master's degree which includes no course work.

Further information may be obtained from Dr D.J. Brothers, Department of Entomology, University of Natal, P.O. Box 375, Pietermaritzburg, 3200, South Africa. Post-graduate assistantships may be available for students who qualify.

N.B. It will be noted that the Department of Botany, and therefore plants, do not appear to be represented in this course!

APPEAL FOR TAXONOMIC LITERATURE: The University of the Western Cape has recently taken possession of its new herbarium building as well as its first curator,

Rodney Moffett, who is also Senior Lecturer in angiosperm taxonomy. He writes to say that he has all the facilities for taxonomy except the necessary old literature. If anybody therefore has duplicates or not-needed copies of literature (books and periodicals) of taxonomic value and wishes to donate them to the university, they will be gratefully received. Please contact him at Private Bag X17, Bellville, 7530.

The herbarium (U W C) intends to take an active part in assisting with the "Flora of Southern Africa" and is starting with revisions of two problem taxa, viz. Rhus and Corymbium. If anyone has particular thoughts on these two taxa, please convey them to Mr Moffett.

NATIONAL MONUMENT - BOTANICAL RESEARCH INSTITUTE, PRETORIA: The botanic gardens of the Institute were recently declared as a national monument by the National Monuments Commission. A special function was held at the Institute to mark the unveiling of the National Monuments' plaque on 25 October, 1979. This function started with a 'monumental' tea for the 25 invited guests and was followed by a brief tour of the Institute to look at some recent new developments, namely the Cryptogamic and Fossil Herbaria. The unveiling ceremony took place at the main entrance to the gardens. Addresses were delivered by: Dr B. de Winter (Director of BRI) on the importance of the garden to the Botanical Research Institute; Prof. N.J. Eloff (President of SAAB) on the importance of gardens to the community at large; Prof. J.F. Eloff (National Monuments Council) on why the garden has been declared a National Monument; Dr D. Immelman (Secretary of Agricultural Technical Services) on the history, progress and future of the gardens and the Botanical Research Institute.

The official unveiling of the National Monument Plaque was then performed by Dr R.A. Dyer, former Director of the Botanical Research Institute (1944-63) .

TERRESTRIAL ECOSYSTEMS NEWSLETTER: NO. 7: This Newsletter for August 1979 appeared recently and contains news and notes of matters ecological. There is an advertisement inviting potential research workers to enquire about ten projects that require to be carried out at the Nylsvlei study site of the African Savanna Ecosystem Project in the Northern Transvaal. The Consumer Component Projects are for the 1980-82 period and cover zoological subjects. A report on the 'Symposium on Terrestrial Ecology of the Southern Cape' is given by J.C. Greig of the Cape Department of Nature and Environmental Conservation. This symposium was held at the Saasveld Forest Research Station near George from 13 to 15 June, 1979. Prof. Jan Giliomee

of the Department of Entomology of the University of Stellenbosch reports that work is being done on the insects occurring in six plots with varying burning histories in the Jonkershoek Valley. He would welcome information on the micro-climates and vegetation of these sites and therefore asks any interested researchers to contact him.

This Newsletter is issued by the Terrestrial Ecosystems Section of the National Programme for Environmental Sciences (CSIR), P.O. Box 395, Pretoria, 0001.

DENDROLOGICAL FOUNDATION: The formation of the Dendrological Foundation is progressing well. President, Board of Trustees and Executive Council took office in November. Practising dendrologists including forest owners, sawmillers, farmers, nurserymen and scientists from various provinces and states will be represented on the Board.

The draft constitution describes the Foundation as an incorporated association not for gain which promotes the knowledge, protection and propagation of trees and the preservation of tree-dominated ecosystems as a contribution to effective environmental conservation and improvement in the States of Southern Africa.

All offices are held in an honorary capacity and any work done for the Foundation is a voluntary contribution to conservation. There are two principal types of membership: 'Supporting Members' who pay subscription but need not work, and 'Active Members' who need not pay but must serve on at least one committee. Double membership is also possible.

The activities of the Foundation take place in a number of organisational and technical committees, both central and local. There is room for every talent.

Finance is provided by four different trust funds: for general organisation, extension, research and publications.

Persons who want to join must please indicate whether supporting or active membership, or both, is desired. Supporting membership fees are as follows:

Associate Members	R25 per annum
Corporate Members (Companies + Institutions) ..	R100 " "
Life Members	R250 (single donation)
Founders	R1 000

Prospective active members are requested to state their particular area(s) of interest such as extension work (e.g. organising outings, courses, exhibitions, woodwork, photography), or research (e.g. surveys, tree names, big trees, arboreta, reserves), or any other contribution they might be able to make.

Scientific dendrologists will be invited to assist the committees with advice and guidance.

Membership applications should be addressed to the Hon. Secretary, P.O. Box 104, Pretoria, 0001.

NEW BOOK: Cape Peninsula Ferns by J.P. Roux is a taxonomically arranged guide to the 54 species of ferns and fern allies on the Peninsula. The book consists of approximately 84 pages including 28 plates with line drawings of all the species by the author. There is also an index, a glossary and identification keys. A brief discussion of the climate and rainfall of the Peninsula is followed by simple and short botanical descriptions with nomenclatural synonyms of each species based on the work of Prof. E.A. Schelpe who gave much guidance to Mr Roux who is horticulturist in charge of ferns at the National Botanic Gardens, Kirstenbosch. The book is soft-covered and costs R2,50 a copy (R2,60 inc. GST). It is produced by and obtainable from the National Botanic Gardens, Kirstenbosch, Private Bag X7, Claremont, 7735.

BOOK FOR SALE: A few copies (unused) Dyer's Genera of Southern African Flowering Plants, vol. 2 (Gymnosperms and Monocotyledons) are available at R3,00 each from Kidson's Pharmacy, 44 Voortrekker Rd, Bellville, C.P.

EDITORS/REDAKSIE:

Mr E.G.H. Oliver and Miss W.G. Welman

ADDRESS/ADRES:

Forum Botanicum,
Botanical Research Institute,
Private Bag X 101,
PRETORIA, 0001.