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

BOTANICAL RESEARCH INSTITUTE; REVIEW OF THE WORK FOR 1982/1983: The aftermath of the very successful 1982 AETFAT Congress was still felt during the past year. It can confidently be said that the Congress was a stimulus to co-operation between botanists in South Africa and their overseas couterparts. For the Botanical Research Institute an improvement of relations overall was noted. The mammoth-sized Proceedings (699 pages), which occupied the energies of many of the staff during the year, will serve as a confirmation of the success of this meeting.

The proposed creation of three national working groups namely, the National Working Groups for 'Vegetation Ecology', for 'Phytosociological Nomenclature' and for the 'Flora of Southern Africa', is a development which could stimulate botanical research in the Department. With the aid of these working groups it is intended to broaden research in the appropriate field by full use of all available manpower in South Africa and elsewhere.

The great success achieved by mobilizing a large proportion of manpower available in the Institute, as well as nationally and internationally, for the preparation of the Flora of Southern Africa, suggests that a similar approach to ecological research could have great advantages.

The Flora of Southern Africa is making steady progress in spite of continuing acute manpower shortages. Much additional work stimulated by the BRI with the support of the Department is being undertaken in this country and overseas. Taxonomic research is thus advancing on a broad front and publications on the flowering plants, the ferns, the mosses and the green- and marine algae are being finalized for the printer. Work on the lichens is ongoing and expanding. The magnitude of the task of writing the 'Flora' makes it imperative that the manpower for flora research within the BRI be expanded. Limited funds were granted for this purpose for 1983 but more is urgently needed. Except for check-lists which have appeared or are in preparation, it is regrettable that very little taxonomic research is being undertaken on the fungi and algae (with the exception of the

diatoms), groups which are no longer the responsibility of the BRI. Their inclusion in the FSA in the near future can therefore not be anticipated.

Ecological research is progressing steadily but at insufficient pace to keep up with demands. The effect of the expansion of the research team responsible for collecting vegetation information for the National Resources Data Bank is not yet being fully experienced, due to the lack of suitable ecologists to fill the posts. Prospects for filling the posts are nevertheless improving now that it is known that vacancies exist. The staff position on the whole remained fairly good. Only Ecology and Plant Exploration showed any vacancies in the professional ranks, and the other ranks were also practically all filled towards the end of the review period.

In spite of the severe loading of particularly senior professional staff with a diversity of tasks which has caused severe stresses, the publication record of the Institute has remained constant at about 90 individual papers per annum. The institute journals have maintained an extremely high standard.

HERBARIUM SERVICES SECTION. The four herbaria of the Institute continued to identify plants and provide information for a wide range of people including officers of the Institute, various State and Provincial Departments, universities and the public both in the Republic of South Africa and its neighbouring states.

National Herbarium, Pretoria (PRE)

The herbarium section continued to be administered in an acting capacity by Mrs. E. van Hoepen as curator and Miss W.G. Welman (finances).

A total of 17 153 specimens was named and about 750 visitors were dealt with. During the year 55 loans (11 056 specimens) were sent to other Institutes, and 29 loans (2 930 specimens) were received. PRE received 2 184 specimens in exchange, but did not send out duplicates during the year.

Several collecting expeditions were undertaken during the year, namely to northern Natal, including the Ingwavuma area, South West Africa/Namibia (mainly around Windhoek), the north-western Cape as far as Aughrabies, the north-western and north-eastern Transvaal and the Reitz-Frankfort area of the Orange Free State, which is poorly represented in the National Herbarium. Numerous one-day excursions closer to Pretoria for the purpose of collecting specific taxa were also undertaken. Because of the drought, conditions for collecting were generally poor and collecting later in the summer was confined to areas which had received some rain.

The replacement of old herbarium cabinets by new modular steel cabinets continued. None of the old cabinets has been sent to Durban or Stellenbosch this year, but three cabinets have been given to the Plant Structure and Function and four to the Plant Exploration sections, to house specimens presently being investigated by these sections. Very few vacant spaces remain in the four main herbarium wings, but 205 units still need replacing. The lichen collection, which is at present housed in the basement light well, will be moved to B16 and modular steel cabinets installed. This is, however, being held up until an alteration to B16 has been completed. A further major alteration to take place in the near future will be the installation of air conditioning in the four herbarium wings for easier control of insects and protection of the collection, as well as reducing the fire hazard. This involves subdividing each herbarium wing by a north-south wall across the centre.

The number of visitors was about 750, some coming from overseas and neighbouring states. Dr. Juliet Prior from the Imperial College, University of London, paid one of periodic visits, as did Dr. Peter Goldblatt from St. Louis, Missouri, Mr. and Mrs. K. Coates Palgrave, Mr. R.B. Drummond and Mr. D.C.H. Plowes were among visitors from Zimbabwe. Dr. C.G. Vosa from Oxford and Dr. J.H. Ross from Australia were other old acquaintances. Mr. P. Halliwell from Kew, together with Mrs. Sally Walker from the U.S.A. spent some time collecting in Lesotho and Natal and brought their specimens to PRE for identification.

Wing A: Miss C. Reid who is responsible for identification of Pteridophytes and all Monocotyledons with the exception of Poaceae, is continuing her studies on Cyperaceae and worked on a review of Cyrtanthus for Herbertia as well as a guide to the plants of the Magaliesberg.

Miss L. Smook, who identifies Poaceae, worked on her 'collecting' project, filling in gaps in our collections from under-collected areas, and was able to go on several collecting expeditions and one-day trips for this purpose. Work on her booklet on Transvaal grasses continues, as does her recording of common names of grasses.

Wing B: Mr. G. Germishuizen has completed his work on the Polygonaceae, which has been accepted for an M.Sc. degree at the University of Pretoria. He supplied the text for Mrs. A. Fabian's Transvaal wild flowers and the plant descriptions for Dr. F.W. Fox and Mrs. M.E. Norwood Young's Food from the veld, both books having been published during the year. Mr. Germishuizen is responsible for the identification of mainly Leguminosae in Wing B and for curating the spirit collection.

Mrs. P.M. Olivier helped with identification of early families of Dicotyledons and was responsible for research on a number of problems which cropped up during her work, as well as an article on Tylecodon grandiflorus.

Wing C: Miss E. Retief is in control of this wing. She is a member of the Seminar Committee, which has promoted a number of very interesting talks and slide shows. During the past year she described two new species namely Raphionacme dyeri and Euclea dewinteri, and gave a talk on Cyphostemma at the 1983 SAAB Congress. She assists with identifications in this wing.

Mr. P.P.J. Herman rounded off his work on Pavetta for his M.Sc. thesis, which has been accepted hy the University of Pretoria. He organized a course on plant collecting, helped with numerous translations and the moving and instal= lation of new herbarium cabinets - in addition to his normal work of identifi= cation of specimens.

During the year Mr. L.C. Leach worked at PRE and gave a great deal of valuable assistance in the identification of Euphorbia and Stapelieae. Mr. E.G.H. Oliver visited PRE from Stellenbosch for a fortnight to give much-needed assistance in the identification of Erica specimens.

Wind D: Miss W.G. Welman who is in charge of this wing, continues as regional abstractor for Excerpta Botanica (Taxonomica). In addition to identifications of mainly Asteraceae, Miss Welman has given assistance to a large number of visitors and colleagues on various problems, ranging from identifications, descriptions, training of new staff, and French translations.

Mrs. M.J.A.W. Crosby assists with identifications in this wing and in addition, administers the Staff Gift Fund and helps organize social functions.

Cryptogams: Mr. J. van Rooy, who is acting as curator of the moss herbarium, has been granted study leave and is working for his B.Sc. Hons. degree, spending his spare time and university holidays at the herbarium, where he is ably assisted by Mrs. S.M. Perold. Mrs. Perold is working on Ricciaceae, in addition to being in charge of the SEM. She has given much valuable aid to various taxonomists and during the past year has produced 4 327 SEM micrographs for Institute staff.

Mr. F.A. Brusse continues to build up the lichen collection. During the year he identified more than 900 specimens and spent much of his time keeping up with the literature. Loans of all lichen material from other South African herbaria were requested for future study. The move of the lichen specimens to room B16

is anticipated in the near future, but is dependent on certain building alterations.

Service Room: The Herbarium Service Room, which may be regarded as the nerve centre of identification services, continues to be ably administered by Mrs. M. Dednam, through whose hands thousands of specimens pass monthly.

Natal Herbarium, Durban (NH)

A total of 3 438 specimens was identified, 375 visitors were dealt with plus five student groups. Accessions to the herbarium numbered 1 108, and 412 specimens were sent out on loan.

Mr. B.D. Schrire, the officer in charge of the unit, has continued his work on Desmodieae, in addition to his administrative duties. Mrs. M. Jordaan has been responsible for most of the identifications of specimens. Mr. A. Ngwenya started work as additional herbarium assistant on the retirement in December of Mr. J. Nzuza after 22 years as gardener at the unit.

Renovations to all the buildings have been carried out, including complete repainting, sanding of floors, replacement of rotten timber and broek roof panels. This involved the complete evacuation of each building in turn, but was accomplished with the minimum of disorganization.

Albany Museum Grahamstown (GRA)

2 593 specimens were identified, 991 visitors and 5 groups of students, were dealt with. There were 844 accessions and 15 loans totalling 518 specimens were sent out. 680 donations of specimens were received.

Mrs. E. Brink is the officer in charge of the herbarium and is assisted by Dr. A.F.M.G. Jacot Guillarmod. Much of the work of this unit is involved with the Museum and various educational institutions in Grahamstown.

Nine displays were arranged in the Museum foyer and a number of lectures were given at schools and to students. Special attention was given to threatened plants and weeds.

Miss G.V. Britten was away on sick leave for three months, but has fortunately recoverd sufficiently to return to duty.

A great deal of time has been spent preparing for the move to temporary quarters while extensions are being made to the Museum building. The herbarium has been cleared of many odds and ends and the garden has been completely cleared

with the help of workers from the 1820 Settlers Garden. This historic glass-house has been taken down and stored for re-erection once building operations are completed. Valuable living plant specimens will in the mean= time be housed in the 1820 Settlers Garden. A volunteer worker, Mr. Neil Abrahams, has given much help in checking old, valuable collections in the herbarium prior to packing. This is much appreciated.

Government Herbarium, Stellenbosch (STE)

A total of 4 654 specimens was identified, 354 visitors were dealt with, accessions to the herbarium numbered 4 286 and 1 193 specimens were sent on loan.

Miss L. Hugo, curatrix of the herbarium, married during the year and is now Mrs. Van Zyl. She is assisted in the herbarium by Mrs. C.M. van Wyk and Mrs A.C. Fellingham.

Mrs. R. Wikner, who resigned at the end of December, was replaced by Miss. J. Fourie and Jan Ambraal was replaced by Claude Paulse in November.

A number of interesting collecting trips was undertaken and some valuable material collected, among others a new genus in Proteaceae and a new species of Cliffortia.

FLORA RESEARCH SECTION

Flora of Southern Africa (FSA): On the recommendation of the Advisory Committee for Botanical Research to the Minister of Agriculture and with the support of the South African Association of Botanists (SAAB) an Advisory Committee for the FSA is being created. This Committee will contribute towards the more efficient production of this important work. During a special session on the FSA held during the SAAB Congress in January 1983 it was decided to make such sessions a regular feature of future annual congresses. It was also decided to issue a FSA newsletter.

Two fascicles are in press and will be published during 1983: (1) Vol. 7,2,2 dealing with the genera Syringodea and Romulea of the Iridaceae which were con= tributed by Prof. M.P. de Vos of the University of Stellenbosch, and (2) Vol. 33,7,2 dealing with part of the Gnaphaliinae (Asteraceae) which comprises Helichrysum, one of the largest and most difficult genera of the South African flora. This fascicle was written by Prof. O.M. Hilliard of the University of Natal.

Manuscripts of four volumes or fascicles covering a total of about 860 species

are at an advanced stage of preparation and editing and should go to press during 1983 or early 1984. They include the volume on Pteridophyta, written under contract to the Department by Prof. E.A. Schelpe of the University of Cape Town, and Vol. 14 on Crassulaceae, contributed by Dr. H.R. Tölken, a former staff member, now attached to the State Herbarium of South Australia in Adelaide.

A catalogue of South African green, brown and red marine algae, compiled by Prof. S.C. Seagrief of Rhodes University in Grahamstown has been composed at the Institute and will be sent to the printer during 1983.

Members of the Institute reported as follows on progress with research fascicles on volumes of the Flora:

Vol. 2: Register of names and types for Poaceae. Since the register was com= pleted in 1982 some 1 200 original descriptions of species have been photo= copied and added to the index. Comparing this register to a similar one com= piled for Mesembryanthemaceae has led to the conclusion that a register of all southern African plants should be compiled in two steps: (1) All relevant names should be drawn from certain works of great general importance, such as the Flora Capensis and Kew Bulletin; (2) Complete registers should then be compiled for each family when it is revised.

Meliceae: As this group is too small for publication as an independent fascicle it was re-written and published in Bothalia.

Oryzoideae, Centostecoideae and Bambusoideae: Work was devoted largely to the genus Ehrharta. Twenty species, including a new one, and 12 infraspecific taxa are recognized. A key and descriptions to most species were compiled.

Key to Southern African grasses: Keys to a further 7 genera and 15 species were drawn up. Certain vegetative characteristics were correlated with evolutionary history, flowering phenology, veld type and successional class.

Vol. 4: Restionaceae. Continued work on the checklist showed that there are about 320 species in Africa of which 40 are undescribed. Numerous species complexes were noted. The survey indicated possible problems with apomixis, where species are only known from female plants or where male plants may be absent from certain areas of the distribution range. Collection of data towards a generic revision was almost completed. Pollen morphology, culm anatomy and seedcoat morphology all provided taxonomically valuable characteristics.

Vol. 5: Liliaceae - Asparagoideae. Twelve of the species hitherto placed under Asparagus have been put in Myrsiphyllum, a genus largely confined to the

southern Cape. The other species were placed into Protasparagus with two sub= genera: Protasparagus in which the spines represent modified branches and Asparagopsis in which the spines are modified leaves. The subgenus Asparagopsis comprises about 50 species.

Vol. 8: Orchidaceae. The family is written up in Flora format by Prof. E.A. Schelpe of the Bolus Herbarium under contract, but Dr. H.P. Linder, the present Liaison Officer at Kew, has made a major contribution to the publica= tion Wild orchids of southern Africa, which deals with all species known from the region.

Vol. 11: Mesembryanthemaceae - Ruschiinae. Some 25 000 items of data were gathered by Dr. H. Glen from herbarium specimens and SEM photographs of seed surfaces. This brings the total amount of numerical data obtained to over 52 000 items of a desired 65 098, or slightly over 80% A dendrogram calcula= ted from such a matrix was shown to be reliable at the 95% confidence level. Provided that this work is controlled vigorously by fieldwork the matrix is considered adequate for the purpose. Distribution records were mapped using a computer programme developed by Dr. H. Glen.

Vol. 21: Tiliaceae. Dr. L.E. Codd updated the account by the late Prof. H. Wild, and it was sent to press.

Vol. 25: Ericaceae. Studies by Mr. E.G.H. Oliver in the 22 South African minor genera continued in two main fields: (1) investigation of inflorescen= ces and bract/bracteole relationships, and (2) revisionary work. The inflorescences of all southern African minor genera so far examined occur on non-innovating branches, probably an advanced condition. The philippioid genera in which the bract is completely recaulescent, with the abaxial sepal reduced or absent, have been placed together as the Salaxideae. A formula expressing inflorescence type and structure and bract/bracteole relationship has been developed. Revisions of Philippia, Ericinella, Coilostigma and Nagelocarpus were largely completed. Pollen and fruit/seed types have proved to be taxonomically useful.

Vol. 28: Lamiaceae. The 67 species of the genera Plectranthus, Solenostemon, Syncolostemon, Orthosiphon and Thorncroftia, which had been previously revised, were written up in Flora format. The following were revised and written up: Tetradenia (= Iboza) with 3 species, Holostylon (1 sp.), Hoslundia (1 sp.), Acrocephalus (1 sp.), Geniosporum (1 sp.), Basilicum (1 sp.), Ocimum (2 spp.) and Becium (4 spp.). The revisionary work in the family is now complete except for the small genus Leonotis, which is being revised overseas.

Vol. 30: Acanthaceae - Justicia. All taxonomic decisions have been taken, descriptions of most species have been completed and a key to species has been drawn up. Of the 25 species recognized from the region only 9 are restricted to southern Africa. The micromorphology of pollen and seed surfaces supports the sections into which Justicia has traditionally been divided. It also indicates that the division of this large genus into segregate genera should be considered.

Ceropegia and related genera

This semi-popular account of Ceropegia, Brachystelma and Riocreuxia written by Dr. R.A. Dyer is at an advanced stage of publication and is expected to appear before the end of 1983.

History of plant collecting: Since the publication in 1981 of the standard reference work on the subject, Plant exploration of southern Africa by Mary Gunn and L.E. Codd, biographical information on a further 50 collectors has been gathered and partly published. A lengthy publication was devoted to Anton Rehmann (1840-1971).

Pretoria Flora: Most of the work was translated into Afrikaans and camera-ready copy of 327 text pages was prepared at the Institute.

Guide to Drakensberg Flora: Mrs. R.C. Holcroft has almost completed the several hundred illustrations and Dr. D.J.B. Killick has started on the text.

Palaeoflora of Southern Africa: Drs. J.M. and H.M. Anderson who are producing this major work have made excellent progress: Camera-ready copy of Volume 1 on the Molteno formation, which deals with the gymnosperm genus Dicroidium, was completed. Publication by A.A. Balkema is being negotiated. Volume 2, which will describe all other gymnosperms of the Molteno formation, is at an advanced stage of preparation. A Prodromus volume, which presents an overview of the megaplant fossils from the late Silurian to Middle Cretaceous, is near to completion.

Freshwater algae: A Catalogue of freshwater Chlorophyceae of southern Africa, which will comprise an estimated 2 000 names, is being compiled by Mrs. R.P. Glen, an ex-staff member.

Liaison officer, Kew: Dr. H.P. Linder, the present incumbent, provided information on taxonomy and nomenclature, as well as related subjects of southern African plants, for the Institute and other research centres in South Africa and overseas. His research was directed mainly towards the Restionaceae, one of the dominant families of the winter rainfall region. (To be continued.)

BRIAN MAGUIRE (2nd February 1922 - 17 August 1983): We were all shocked to hear of Brian's sudden death on the 17th August, 1983. Although he had suffered ill-health for many years, having contracted the respiratory complaint known as 'cave disease', we had all taken it for granted that Brian would always be there - there was so much research that he still had to complete. Had he been given two life-times he would never have been able to finalise all that he had collected, for, with his meticulous desire for perfection and the fact that he had made extensive collections of material in the two disciplines he was engrossed in, Botanical and Palaeontological, an enormous amount of work lay ahead of him.

Brian spent his youth in the Potgietersrust area and even before he came to Wits to study for a degree in Science with Botany as a major subject his know= ledge of the vegetation in that area was vast. One always felt that given even the most depauperate specimen from the mountains around Potgietersrust Brian would immediately be able to put a name to it. After graduating in 1949 he worked at the Compton Herbarium at Kirstenbosch for five years during which time he gained a thorough knowledge of the Cape flora. During that time he was seconded to two expeditions to S.W. Africa to collect plants. The collection and notes made on these trips formed the basis of his monumental M.Sc. thesis on "The food plants of the !Khu Bushmen of the North Eastern area of S.W. Africa". I had the pleasure of supervising his thesis. I say "pleasure" because his work was so well prepared and beautifully illustrated with excellent photographs that one could not fault him except for the fact that a final date of submission of a thesis is required and I despaired of Brian ever being sufficiently satisfied with his work to admit it was complete. When gently asked whether it was really necessary to have yet another key for the identification of the plants, Brian's immediate reply was, "Yes, certainly, think of the poor research worker sitting in the blazing desert with a single Grewia seed in his hand, he must be able to identify it." He never had time to edit this thesis for publication, but it is hoped that it will still be published. He was a meticulous collector of botanical specimens and there are many hundreds of these specimens which bear testimony to his devotion to this field of work. For many years his time was employed in Palaeontological research. There were fossil-rich caves at Makapansgat in the mountains outside Potgieters= rust and on Brian's return from Kirstenbosch, Prof. Dart, realising his interest and careful work, appointed him as Technical assistant in the research at Makapansgat and from that time he worked at the Bernard Price Institute, again carrying out dedicated and fine work on the surface grid which he constructed at the Makapansgat limeworks, recovering large numbers of primitive tools on

which he worked for many years. He wrote a paper on this work which was read at the SASQUA conference in 1979 and was published as a major contribution to the proceedings in 1981. Although so embroiled in the fossil remains at Makapansgat, Brian always retained his botanical interests and kept up to date with taxonomic developments. He was only too delighted to come over to the Herbarium at any time to assist in the tricky identification of an obscure cucurbit or a dried-out twig from the desert. We extend our deep sympathy to his wife Judy and to his two delightful and intelligent little daughters of whom Brian was so proud, but we also grieve our loss, that of a colleague with a fine sense of humour, a pleasant personality and one who had so much scientific know= ledge to add to the two vast fields of research in which he had been occupied. (L.E. Davidson).

SYMPOSIUM ON THE BOT RIVER ESTUARY: A symposium on "The Ecology and Manage= ment of the Bot River Estuary (Caledon District) is being organised by the University of Cape Town under the auspices of the Royal Society of South Africa. It will be held on 16 and 17 November in the Robert Leslie Building, U.C.T. The session on 16 November will be a formal review of scientific information while that on 17th will be a closed workshop on management options open only to invited participants. The botanical aspects of the estuary will be dealt with by Mr. M. O'Callaghan of the Botanical Research Unit, Stellenbosch. Contact address: Prof. G.M. Branch, Zoology Department, U.C.T.

SAVANNA ECOSYTEM PROJECT: ANNUAL RESEARCH MEETING: The Savanna Ecosystem Project's annual research meeting will take place at the Nylsvley Nature Reserve on Monday 21 and Tuesday 22 November 1983. The meeting has the following objectives:

1. to provide researchers in the programme with the opportunity to report back and exchange information on established projects;
2. to give new researchers the opportunity to outline their intended research projects to other participants and to invite comments and criticisms on these; and
3. to establish to what extent the existing information is contributing to an understanding of the functioning of savannas.

The attendance at the meeting of researchers and others interested in savanna ecology, who are not currently participating in the programme, is welcome. Since accommodation at Nylsvley is limited anyone wishing to attend should contact Tisha Greyling, Liaison Officer: Savanna Ecosystem Project, CSP, P.O. Box 395, Pretoria, 0001 (phone (012) 869211 x 3931) as soon as possible.

UNIVERSITY OF THE WITWATERSRAND, BIOTECHNOLOGY: The University will offer an M.Sc. degree by course work and research report in the field of Biotechnology to a limited number of students from 1984 onwards. The course work component will comprise a series of 11 topics and the research report will be based on a short research project undertaken by the candidate. The syllabus will be as follows:

First term:
Basic cellular and molecular techniques, DNA purification and analysis, DNA labelling and hybridization, RNA techniques, Batch and continuous cultures, Antibody technology, Monoclonal antibodies, Gene cloning, Molecular embryology, Protoplast isolation, fusion and culture; anther and tissue culture.

Second term:
Seminars/essays on current topics in Biotechnology, Research report. Additional topics may be substituted if necessary.

The minimum qualification for admission as a candidate will normally be a B.Sc. (Honours) degree or a four-year degree in one or more of the relevant fields, for example, Agriculture, Biochemistry, Botany, Forestry, Genetics, Horticulture, Microbiology, Zoology, or members of the Institute of Biology. The degree will be offered as a full-time degree over one calendar year and as a part-time degree over a minimum period of two, but not exceeding three, calendar years.

Further information is obtainable from the Chairman, School of Biology, Depart= ment of Genetics, University of the Witwatersrand, Johannesburg, 2001, telephone number (011) 716-2134.

ADDRESSES: The SAAB and FORUM address system has been placed on a different computer. Wherever possible the addresses have been corrected and updated to fit in with the new programme with its maximum of 4 lines per address, hence the need for abbreviations. Please check your address for any inaccuracies or delivery problems and inform the Hon. Secretary or the Editor at Box 471, 7600 STELLENBOSCH.

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