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

BOTANICAL RESEARCH INSTITUTE: The Botanical Research Institute is divided into four sections, namely the Flora Research Section, Herbarium Services and Information Section, Botanical Survey Section and the Economic Botany Section. The current activities of the first two sections are reviewed here.

Flora Research Section

Flora of Southern Africa. Six volumes of the Flora are in the course of preparation. Vol. 9: In this volume Myricaceae has been completed by Dr. D.J.B. Killick and a considerable amount of work has been done in Proteaceae viz. *Leucospermum*, *Spatalla* and *Scrocephalus* by Dr. J.P. Rourke, *Leucadendron* by Dr. I. Williams, *Paranonus* by Dr. Levyns and *Protea* by Prof. H. Rycroft and Dr. J.P. Rourke. In Moraceae Dr. G. de Wolf is doing *Ficus*. Vol.14: Mr. H.R. Tölken has almost completed *Crassula*. Vol. 16: Dr. J.H. Ross has practically finished Mimosoideae and has made good progress with the Caesalpinioideae (excluding *Cassia* being revised by Dr. K. Grodon-Gray and *Bauhinia* by Mr. L.A. Coetzer). Vol. 21: The only two outstanding taxa in this volume are *Hermannia* (Sterculiaceae) and Malvaceae. In *Hermannia* Dr. I.C. Verdoorn has completed *Eu-Hermannia* (212 names and 60 species) and Dr. B. de Winter still has to do the *Mahernia* section of 30-40 species. Malvaceae, a joint effort by Mr. A.W. Exell, Prof. A.D.J. Meese, Dr. Bates and Dr. O.A. Leistner, is nearing completion. Vol.22: Mrs. A.A. Mauve has completed Elatinaceae, Frankeniaceae, Tamaricaceae and Violaceae and is presently revising Cactaceae and Turneraceae. Dr. O. Hilliard has completed Begoniaceae, while Dr. W.J.J.O. de Wilde is doing Passifloraceae. Dr. Killick is putting the finishing touches to Flacourtiaceae, Achariaceae and Guttiferae (with Dr. N.K.B. Robson) and is also dealing with the taxonomy of *Oelma* whose morphology and anatomy are being studied

by Mr. P.C.V. du Toit. Vol. 25: Mr. E.G.H. Oliver is working on the minor genera of Ericaceae.

Genera of Southern African Flowering Plants. The first volume dealing with the dicotyledons has been completed by Dr. R.A. Dyer and is in the press. Dr. Dyer is now working on the monocotyledons with the assistance of Mrs. Mauve and other specialists. The Genera will form part of the Flora of Southern Africa series.

Flowering Plants of Africa. This work appears regularly and to date 1 668 plates have been published. The printing is now done by the Government Printer. The present artists are Misses H. March and J. Kimpton.

Flora of Natal. This flora by Dr. J.H. Ross has been published as Mem. Bot. Surv. S. Afr. No. 39, 1973.

A study of the leaf and embryo anatomy of the Gramineae of Southern Africa. The grass anatomy project (Mr. R.P. Ellis) is progressing favourably with 1 500 specimens having been collected and fixed in the field. This has necessitated collecting trips to the S.W. Cape, N.W. Cape and S.W.A., the Northern and Eastern Transvaal, the O.F.S. and the Natal Drakensberg. These 1 500 specimens include a little over 500 of the approximately 1 000 South African grass species and all have been sectioned and photographed. Epidermal preparations are progressing more slowly but 700 have already been scraped. The task of describing and comparing these preparations has just begun. To facilitate describing the anatomical structure of the specimens descriptive schedules, together with definitions and diagrams, have been compiled from the literature incorporating all possible diagnostic characters. 832 characters are included which will be used in computer-generated keys, tables and taxonomic descriptions.

Sitotaksonomiese studie van die *Eragrostis curvula*-kompleks. Mnr. T.B. Vorster. Ten einde enige variasie in kiemsakontwikkeling by die *E. curvula*-kompleks in 'n oorgangsgebied vanaf die laeveld na die hoëveld vas te stel is vyftien versamelpunte op 'n lyn tussen Brits en Johannesburg geneem. Blomme van ten minste drie plante op 'n versamelingspunt is in Navashin gefikseer vir die

mikrotomie tegniek. Herbariummonsters is ook reeds versamel en gemonteer. Al die materiaal is alreeds ingebed in was en sommige daarvan is al gesny en gekleur. Tot dusver is die plante wat reeds gekleur, gesny en ondersoek is oorheersend apomikties en wel van die 4-kernige diplosporiese kiemsaktipes. By een versamelpunt naby Brits is egter 'n hoë persentasie geslagtelike kiemsaktipes gekry en wel van die 8-kernige poligonium tipe. Chromosoom aantal by hierdie versamelpunt het getoon dat hierdie plante tetraploïed is ($2n = 40 = 4x$). By een ander versamelpunt waar die chromosoom aantal bepaal is en waar die plante verpligte apomikte is, is die plante hexaploïede ($2n = 60 = 6x$).

South African botanists' handwriting project. Miss M.D. Gunn has completed about one half of the required biographical information on collectors and authors.

Herbarium services and information section

New building - new herbarium cabinets. In the new building of the Institute the herbarium is housed in four halls, each measuring about 3 m x 15 m. In addition, senior officers have their own offices. The floors of the herbarium halls are covered with a dark green carpet-type floor covering, which is easy on the eye, the ear and the foot.

260 new herbarium cabinets are being installed at present, 65 in each hall. These cabinets were inspired by those in Edinburgh and at Kew and are locally manufactured by a subsidiary of the firm that produced the Edinburgh model. They are made of steel and have two magnetically sealing doors, each of which gives access to twelve pigeonholes arranged into two columns. The cabinets are arranged in double rows, back-to-back. Low rows, one cabinet high, and covered with a work top, alternate with high rows consisting of a double tier. The cabinets are of a modular construction and are relatively cheap to produce.

Computerisation. During 1974 the new computer of the Department will become operative and the Institute will be provided with more than one terminal. Preparations are being made to build up a computerised data bank. The first step will be to gather data provided by the estimated 600 000 herbarium specimens from Southern Africa in PRE. The aim is to record all useful information provided on labels and to give an indication of the state of each specimen.

Such a data bank can provide printed information on the following: all taxa represented, their distribution areas, all taxa recorded from any of the 3 000 - 400 quarter - degree squares, or larger geographical units, in Southern Africa, all recorded type specimens, all collectors represented, the presence of any particular specimen in the herbarium, the number of specimens by which any taxon is represented (which can be a useful indication of whether a taxon is common or rare), ecological and economic data etc. Once a taxon has been recorded in the bank, a host of further data taken from literature and other resources can be linked with it.

Preparations are also being made to produce herbarium labels on a machine which simultaneously feeds the information into the data bank. The standard PRE herbarium label was adapted for computer printing. Basically, it remains unaltered, however.

Kitsgidse (Engl.: quick guides). Beamptes in die seksie wy die grootste deel van hulle werkstyd aan die identifisering van plante. Dit is dus belangrik om hierdie aktiwiteit so ver soos moontlik te rasionaliseer. Aangesien die meeste spesies nog nie deur resente hersienings gedek word nie moet groot-skaals gebruik gemaak word van die vergelyking van monsters met reeds benaamde eksemplare. Om die hantering van eksemplare so ver soos moontlik te beperk, is sogenaamde kitsgidse saangestel waarin elke spesies of infraspesifieke taxon slegs deur een of twee eksemplare verteenwoordig word. Hierdie eksemplare wat sover moontlik met outentieke materiaal vergelyk is, is in plastieksakkies verseël. Die kitsgids vir elke herbariumsaal word in die eerste ry kaste in die saal gehuisves.

Pretoria Flora. Aandag kon weer gegee word aan hierdie projek wat die sowat 1 800 spesies van varings en blomplante in die Pretoriase distrik sal behandel. Dit sal beskrywende sleutels tot families, genera en spesies bevat. Teenoor die gedeelte van 'n sleutel waar 'n bepaalde soort uitgesleutel word, sal 'n lyntekening van die spesies wees wat die onderskeidende kenmerke toon. Die beskrywende gedeelte, is reeds grootliks voltooi maar 'n groot aantal tekeninge is nog uitstaande.

Revision of *Mariscus* in South Arica. Die klassifikasieprobleme verbonde aan die Suid-Afrikaanse *Mariscus*-spesies (fam. Cyperaceae) word tans deur mnr. P. Vorster

ondersoek. Die laaste omvattende behandeling is deur C.B. Clarke in *Flora Capensis* in die jaar 1897 gepubliseer. Hy het meeste van die spesies geskei op grond van die aantal vrugte wat per blompakkie gevorm word. Of dit 'n betroubare kenmerk is, is 'n ope vraag. Die kenmerk is in elke geval onbruikbaar in die geval van jong blomme waar die vrugte nog nie gevorm het nie. In 1936 het Kükenthal die genus in *Das Pflanzenreich* behandel sonder om ingrypende veranderinge te maak. Die huidige studie behels nie alleen die klassieke morfologiese metodes nie, maar sal ook bykomstige hulpmiddels soos anatomie en elektronmikroskoopstudies van stuifmeel- en vrugoppervlaktes insluit.

'n Morfologiese studie van die genus *Bauhinia* L. en verwante genera in Suidelike Afrika. Mnr. L.A. Coetzer, tans verbonde aan die Departement Algemene Plantkunde van die Universiteit van Pretoria, het 'n anatomies-morfologiese ondersoek van die Suider-Afrikaanse verteenwoordigers van die volgende geslagte afgehandel: *Adenolobus* (Harv.) Torre & Hillc., *Bauhinia* L., *Biliostigma* Hochst. en *Tylosema* (Schweinf.) Torre & Hillc. Hy het tot die gevolgtrekking gekom dat hierdie taxa ook wat hulle anatomiese kenmerke betref as aparte genera bestaansreg het. Die anatomiese ondersoek was veral toegespits op die knoopstruktuur van stingels en blare. Taksonomiese aspekte van die genera is ook ondersoek en sal waarskynlik nog hierdie jaar gereed gemaak word, vir die Flora van Suidelike Afrika. Die reeds voltooide werk waarvoor die Universiteit van Pretoria aan mnr. Coetzer 'n M.Sc. toegeken het, behels o.a. vyf uitkenningsleutels: fertiele materiaal, op albei fertiele en steriele materiaal en 'n anatomiese sleutel.

Anatomical and cytological studies in the Hypoxidaceae. Miss M.F. Thompson who is attached to the Botanical Research Unit at Stellenbosch, obtained an M.Sc. degree at the University of Stellenbosch for this project. She investigated the anatomy of leaves, corms and flowers as well as the chromosomes of representatives of the genera *Spiloxene* Salisb., *Pauridia* Harv. and *Curculigo* Gaertn. Two new taxa of *Pauridia* were found and Miss Thompson concludes that *Spiloxene* should be regarded as separate from *Hypoxis*, while *Empodium* is inseparable from *Curculigo*. She includes *Pauridia* in the Hypoxidaceae.

Morfologie en anatomie van *Oclina*-soorte. Hierdie familie word tans voorberei vir volume 22 van die Flora van Suidelike Afrika. Mnr. P.C.V. du Toit, wat

tans vir M.Sc.-studies aan die Universiteit van Pretoria gesekeundeer is, maak 'n morfologies-anatomiese studie van die sowat twaalf spesies van die familie wat in Suid-Afrika voorkom. Hy spits hom toe op die anatomie van stingels, veral die knope, blare en wortels sowel blom morfologie, saadontwikkeling en stuifmeelmorfologie. Hy maak o.a. gebruik van 'n skanderelektronmikroskoop. Geïmprepareerde materiaal van die meeste spesies is reeds versamel.

List of South African plant names. About 90 per cent of the plant names currently used in the herbarium have been put on cards and are being prepared for typing. It is planned to send out complete lists to interested institutes before the end of the year.

South African key grasses. The Institute is preparing a work on about 90 South African grasses. It will provide the scientific name with recent synonyms and one or more common names. A short description consisting mainly of diagnostic features is followed by detailed notes on ecology and distribution. Each species is depicted on two or three photos showing habit, inflorescence and special characteristics. A distribution map is provided with each species. Contributors to this project are Mr. J.P.H. Acocks, Dr. B. de Winter and Mr. A.E. Loxton. Mr. S.R. van Jaarsveld is responsible for the photographic work.

ROYAL BOTANIC GARDENS, KEW: Each year there is an Open Day at Kew when visitors who have applied for invitations can view the research establishments which stage exhibits of their current work and subjects of botanical interest.

For the first time Open Day this year was a two-day event, held on 11-12 May. Of the 4 530 visitors who passed through the reception centre, 2 444 visited the Herbarium where twelve exhibits were staged i.e. Native Australian Flowers (from Canberra Botanic Gardens); the family Asclepiadaceae; Succulent Euphorbias in East Africa; Water Colour Drawings; Pollen Morphology and Systematics; Chorology, the study of Plant Distribution; the Completion of a Flora at Kew (Flora of West Tropical Africa); *Welwitschia*, a unique Gymnosperm; Towards a Fungus Flora of South Africa (Dr. D.A. Reid); The Desolation of Somalia; South African Wild Flowers and Recent Botanical Literature.

Mr. G.L. Lucas of Kew and Dr. J.H. Ross, the South African Liaison Officer, staged an exhibition on *Welwitschia* to commemorate the centenary of the death of the Austrian botanist Friedrich Welwitsch. Included in the exhibition was a large plant from the museum's collection, an original oil painting of *Welwitschia* by Thomas Baines, portraits of Welwitsch and Baines, a small living plant from the gardens, several excellent photographs by courtesy of Mr. W. Giess of Windhoek Herbarium and the Botanical Research Institute, Pretoria and fresh male and female cones from the Hortus Botanicus of the University of Stellenbosch.

Mr. E.G.H. Oliver of the Botanical Research Unit, Stellenbosch sent over a collection of 150 species of Cape flowers covering mainly the families Proteaceae (27 spp. of *Protea*) Ericaceae, Restionaceae, Bruniaceae, Penaeaceae and Grubbiaceae.

Dr. D.A. Reid staged an exhibit showing something of the field study and subsequent taxonomic research arising from two collecting trips to South Africa in 1970 and 1971/72. As a result of this work it is hoped to produce a Fungus Flora of Southern Africa.

SAAB (E. CAPE REGION): At the AGM of the Region held on 12th May at the University of Port Elizabeth the following Committee was elected for 1973/74 - Prof. J.G.C. Small (Chairman), Dr. M.C. Olivier (Sec./Treas.), Mr. D. Ferreira, Dr. A. Jacot-Guillarmod and Miss S. Troughton. Dr. A. Jacot-Guillarmod was elected as the Regional Representative on Council. Among matters discussed was the planned Post S₂A₃ Tour from Grahamstown in July 1974.

The membership of the Section for the last year was 22. The Chairman noted that Dr. D.N. Bishoff had moved to Zululand and congratulated him on his professorship there. Congratulations were also given to Prof. S.C. Seagrief on his professorship at Rhodes University and to Dr. J.P. Jessop on obtaining his doctorate.

During the year attention was given to the possibility of forming a Coordinating Committee for Nature Conservation in the Eastern Cape on the lines of the one in the S.W. Cape.

ROYAL SOCIETY OF SOUTH AFRICA: At the recent June meeting of the Society on 20th at the Athenaeum, Cape Town, Dr. A.V. Hall, Assistant Curator of the Bolus Herbarium, University of Cape Town and Senior Lecturer in Taxonomy, gave a lecture on Computer-based Aids in Classification. Dr. Hall is Honorary General Secretary of the Society.

BOTANICAL SOCIETY OF SOUTH AFRICA: On 19th June Prof. H. Wild of the University of Rhodesia gave a lecture to the Head Office Branch of the Society at the Athenaeum, Cape Town. His subject was the relationship between plant distributions and heavy metals in the soil.

FORTHCOMING VISIT: Prof. F. Bohlmann of the Organisch Chemisches Institut of the Technische Universität in Berlin will be visiting South Africa in September to collect material of Compositae. He will be accompanied by his technical assistants. Two years ago Prof. Bohlman and Prof. Bornowski of the same department spent a month in the S.W. Cape collecting roots of as many genera and species of South African Compositae as possible for their work on the chemistry of the family for the world. The forthcoming visit is planned to fill in the gaps in the survey and to recollect material of species that provided compounds of particular interest. The party will be based at the National Botanic Gardens, Kirstenbosch.

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