

FORUM BOTANICUM

Vol. 11, No. 11

November, 1973

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

NATIONAL BOTANIC GARDENS OF SOUTH AFRICA:

1. Regional Botanic Gardens: The Gardens at present under the control of the National Botanic Gardens of South Africa are:-

Kirstenbosch Botanic Garden - (Head Office)
Karoo Botanic Garden, Worcester
Harold Porter Botanic Garden, Betty's Bay
O.F.S. Botanic Garden, Bloemfontein
Drakensberg Botanic Garden, Harrismith
Natal Botanic Garden, Pietermaritzburg
Lowveld Botanic Garden, Nelspruit.

In addition there are:-

Edith Stephens Cape Flats Flora Reserve, Philippi
Tinie Versfeld Flora Reserve, Darling.

Negotiations are now taking place for the establishment of the following new Gardens:-

Eastern Cape Botanic Garden, Port Elizabeth
Kaffraria Coast Botanic Garden, East London
Southern Cape Botanic Garden, Oudtshoorn
Transvaal Botanic Garden, Krugersdorp
Griqualand West Botanic Garden, Kimberley
Natal Mistbelt Botanic Garden, Pietermaritzburg
Mangrove Botanic Garden, Beachwood, Durban
KwaZulu Botanic Garden, Mtunzini.

No definite decision has yet been taken on the actual designation of these proposed Gardens. Lancaster Hill at Vryheid has been inspected as a possible site for a Northern Natal Botanic Garden.

2. Compton Herbarium A concerted effort is being made to clear the enormous backlog of unmounted (and in many cases unnamed) specimens which were inherited when the South Africa Museum Herbarium was transferred to Kirstenbosch in 1956. Many bundles of unmounted material collected by Dieterlen, Galpin, Schlechter, Pearson, Marloth, Pegler, Dinter, Medley Wood, Dümmer, Leipoldt, Phillips and numerous others, have been worked through to date. Specimens are checked against existing material in the collection; if absent, they are retained, mounted and incorporated; if already present, they are distributed as duplicates. The first set of these duplicates is sent to the Botanical Research Institute, Pretoria, the remainder to various local and overseas herbaria. Since October 1972, 14 000 duplicate specimens have been distributed. Once this backlog has been dealt with, it is not anticipated that the herbarium will expand very greatly. Any further additions will be mainly special collections made by monographers working on specific genera. The registration of all existing sheets in the collection was commenced some years ago by Miss W.F. Barker. This procedure is continuing together with the compilation of a list of all the collectors represented in the herbarium. At present the number of registered sheets is 211 000, although the final count will be considerably higher.

Research. Prof. R.H. Compton, Director of the National Botanic Gardens of South Africa from 1919 to 1953, and who recently celebrated his 87th birthday, still visits the herbarium from time to time to consult the material in connection with his work on a "Flora of Swaziland". Since the publication of his "Annotated Check List of the Flora of Swaziland" in 1966, Prof. Compton has been actively engaged in writing this "Flora". It is intended as a guide to the spermatophyta of Swaziland, especially for students and those whose occupation or interests bring them into contact with the vegetation of the country. Habitats, flowering periods and full citations are given for reference to herbarium material, chiefly at the Botanical Research Institute, Pretoria, and the Compton Herbarium, Kirstenbosch. The MS. has had its third revision and is now being typed in preparation for printing.

Miss W.F. Barker, who retired at the end of September 1972 as Curator of the Herbarium, is now devoting all her spare time to research on *Lachenalia*. Her revision of the genus will be largely based on an extensive collection of meticulously assembled material, built up over many years and supplemented with colour photographs and a large collection of living specimens.

Dr. J.P. Rourke, who succeeded Miss Barker as Curator of the Herbarium, is continuing his taxonomic research on the genera of the South African Proteaceae for the "Flora of Southern Africa". Revisions of *Diastella* and *Aulax* are almost complete. *Protea* remains the largest genus to be revised. While most of the nomenclatural problems in *Protea* have been cleared up; there are still several very complex groups of species which will require careful taxonomic evaluation before a revision of the genus can be written up.

Dr. Ion Williams of Hermanus, a regular visitor to the Herbarium, is presently revising *Euchaetis*, *Macrostylis* and *Acmadensis* (Rutaceae, tribe Diosmeae). His study embraces a re-appraisal of the delimitation of the genera within this tribe. During September and October, Dr. Williams visited several herbaria in Britain and Europe to study type material.

3. Garden Activities. The actual layout and planting up of the Proteaceae section of the Garden on the slope above the Dell and below the main storage dam, has now practically reached its final stages. The collection is made up of the following: *Protea*, *Leucadendron*, *Leucospermum*, *Mimetes*, *Aulax* and *Serruria*. All plant material originated from the wild. The layout in which a collection of Ericaceae is to be planted is also progressing well. Paths are being laid out to demarcate the area. All paths in these two areas are planted up to *Stenotaphrum secundatum* to prevent erosion and facilitate maintenance. A start has been made with clearing the site below the new car park, which will be developed into a water garden.

DR. L.E.W. CODD retired at the end of September as the Director of the Botanical Research Institute.

Leslie Edward Wostall Codd was born in Natal, 16/9/1908 and matriculated from

the Boy's High School, Dundee, Natal. He attended the University College of Pietermaritzburg from 1925 to 1928, attaining an M.Sc. degree with first class in Botany. He was awarded the Webb Research Scholarship and proceeded to Cambridge where he studied genetics under Prof. Engeldow. A Colonial Agriculture Scholarship took him to the Imperial College of Agriculture, Trinidad, where he worked on the genetics of cotton.

He was appointed to the Colonial Agriculture Service, British Guiana in 1932. Five years were spent in this territory as plant breeder in charge of experiment stations dealing with breeding and genetics of rice, legumes, cover crops and tropical fruits. While in British Guiana he published a number of papers on rice breeding. It was in British Guiana that he met and married his wife Cynthia.

In January 1937 he was appointed as Pasture Research Officer in the Division of Plant Industry, Department of Agriculture, Pretoria and in 1939 was appointed as Officer in Charge of the Prinzhof Grass Breeding Station, Pretoria.

In 1941 he was awarded the D.Sc. degree by the University of South Africa. The thesis presented was on Rice Breeding.

In 1945 Dr. Codd was appointed as Officer in Charge of the Botanical Survey Section of the Division of Botany. In 1956 he was appointed as Assistant Chief and in 1963 became Chief of the Division of Botany - now the Botanical Research Institute.

During his term of office, the Institute has expanded with two new sections: the Flora Research Section and the Economic Botany Section being formed, and has achieved a great ambition by moving into its fine new building.

Dr. Codd's contributions to botany include plant collections numbering nearly 11 000 with many new records and new species among them. His collecting has always been meticulous, particularly his labelling, and colleagues boast that his collection notes have often enabled them to return to the exact spot in the veld to find the plants from which he has collected.

Dr. Codd has also collected a great deal of living plant material for the garden, particularly in its early days. His constant support and encouragement, his interest and his collections have contributed immensely to the development of the garden, of which we are all so proud.

His scientific papers number of 90 and include works on *Kniphofia* and on Labiatae, groups on whose taxonomy he is the acknowledged expert. He has also written the text for many plates in the Flowering Plants of Africa series, and his association with this series has been particularly close and rewarding.

Another great contribution to Botany in South Africa is as editor of the journals of the Botanical Research Institute. He is an expert on taxonomic nomenclature as well as being a fluent writer, with a critical eye, who by example has set a high standard for the Institute.

He has given freely of his time encouraging and helping botanical and horticultural societies and private research outside the Institute.

The authors of many of the beautiful, popular books on South African plants that are now available, owe much to him. He has performed a great service in helping to popularise a knowledge of our flora - beginning with his own well-known work on "The Trees and Shrubs of the Kruger National Park".

His genuine love of plants, as well as his scientific ability, have resulted in his making a great contribution to the botanical scene in South Africa. After his retirement as director, he will be returning to continue his botanical researches at the Institute.

FIRST INTERNATIONAL CONGRESS OF SYSTEMATIC AND EVOLUTIONARY BIOLOGY:

ICSEB-1 was held at the University of Colorado, Boulder, USA, from the 4th to the 11th August, 1973. A total of 1 453 biologists (including 328 students), from all parts of the world, attended. Six South Africans, 4 botanists (Dr. F.M. Getliffe, Mr. H.F. Glen, Dr. A.V. Hall and Dr. J.P. Jessop) and 2 zoologists (R.A.C. Jensen and D.J. Strydom) were there.

Each day was divided into three. In the mornings, three parallel sessions of

contributed papers and up to ten society meetings, research film shows and special interest groups were held concurrently. Each afternoon one had the choice of three major symposia. Evenings were given over to Social Occasions, National Geographic Society films, society meetings or general socialising.

In the course of a week, 218 contributed papers were read. The number of papers read in the special interest groups and symposia, would have been about half and one-third this number respectively. Titles of contributed papers included such topics as "Floral diversification in the genus *Geranium*", "Phylogenetic models and the origin of higher taxa", "Up the hierarchy", "On the advisability of midsummer meetings of systematic zoologists", "A taxonomic study of *Brassica juncea*, using the techniques of electrophoresis, gas-liquid chromatography and serology" and "The role of satellite imagery in evolutionary studies".

Special Interest Groups included a Conference on Numerical Taxonomy; museum curating; weed taxonomy; community ecology; bryophyta; bryozoa; origin and early evolution of angiosperms; bio-geography and many other topics of current interest.

Symposium topics were circulated about a year ago (as an Ref. insert in Taxon), and a search of titles of symposia also yielded some gems, like "Homage to the Loch Ness Monster" or "Why there are so few niches". Major problem with the symposia was that the largest lecture theatre at Boulder holds some 520 people, which complicates matters when an audience of some 700 is trying to be present. If it was a good paper, they were hanging from the chandeliers and overflowing into the square.

Among the 1 453 present were most of the great names that one sees on papers and textbooks, and so it was possible without much effort (for example), to hear Stebbins speak on no less than three occasions in a week. The calibre of a "do" that has Stebbins and Ernst Mayr as after-dinner speakers, may be imagined.

Saturday 4th was mostly spent in arriving and settling in, and to some extent finding one's way around. The morning of Sunday 5th was much the same,

though some souls found a chance to botanise in the "Flatirons" - the foothills of the Rockies, which start right at the edge of the town, about 20 minutes' walk from the residences.

The Congress was opened with a remarkable address by the Ambassador of Sri Lanka (Ceylon) to the USA, Dr. N. Kanakarathne. Problems of the serious decline in the richness of biota in the Third World were noted. The Third World was seen as being invited along the same path of heavy industrialisation and environmental over-use as the West. In the context of excessively large human populations, many were asking whether indeed the quality of life was, in the long run, to be enriched by this. Cases of important, rare and endangered plants, animals and communities such as wet-lands and forests, were noted. Their value was seen as very great when summed over large periods in the future; it should be considered criminal to prejudice such benefits for relatively short-term aims. A firm plea was made for biologists to institutionalise their advice on environmental problems to governments.

Monday and Tuesday were the normal round of papers, groups and sessions outlined above. Wednesday 8th was set aside for field excursions. Dr. Hall and Dr. Getliffe went to the Florissant Fossil beds, while Dr. Jessop and Mr. Glen went botanising to Brainard, Long and Isabelle lakes, between 10 000 and 11 000 feet up in the Rockies, in the local equivalent of a forest reserve.

According to the guide, the traffic problem in national forests is now so bad that they have to limit the number of cars allowed in at weekends, while entry into National Parks is even more chronic. I was fortunate in having Richard Pankhurst of Cambridge as my mentor on this outing - at least he has seen Northern Hemisphere plants before!

Thursday to Saturday (11th) were more Congress work; Sunday 12th was free, with a botanical ramble in the Flatirons for those who were still in Boulder and had enough energy - I do not think South Africa was represented! Monday was a one-day post-Congress tour to the Rocky Mountain National Park, over the highest through road in the continental U.S. (12 183 feet above sea-level) thence to Golden, Colo. and back home - some 500 km in one day! Highlights of the day were seeing *Koenigia*, the only true tundra annual, at over 12 000

feet, seeing *Linnaea borealis* at our lunch stop, looking for cacti in the sagebrush west of the Continental Divide and finding them, and (non-botanically) trying to catch up with Prof. Faegri on top of the pass - and finding out what thin mountain air is all about!

The final meeting of the Congress was a business meeting at which a number of resolutions were taken, committees elected and preliminary arrangements made for ICSEB-2.

The Resolutions of the Congress included a major plea to all governing bodies throughout the World "to support and actively implement as a matter of great urgency, policies which will preserve and maintain the diversity of the ecosystems of the land, the sea and the inland waters", and to "co-operate in the provision of material aid, wherever needed, for biological conservation and for the scientific assessment and management of biological resources". This resolution, with another urging the use of recycled paper for all major scientific meetings, is to be forwarded to the International Union of Biological Sciences for distribution. It has been recommended that the next Congress be held in Central Europe in 1979.

No special volume of Congress papers will be published. It is believed that many of the papers will be published in Systematic Zoology and Taxon. (H.F. Glen).

MR. FRANK WHITE of Forest Herbarium University of Oxford, made an extensive tour of Southern and East Africa earlier this year to study all Ebenaceae indigenous to the areas visited especially for population structure and variation, evidence for hybridisation, effect of environment on the phenotype, seedlings and development; pollination ecology and fruit dispersal. All the 33 known species were studied in the field. Not all, however, were found in flower and fruit. Seed of most of the species and of selected provenances of widespread and variable species was collected for cytological and experimental work in Oxford.

Several populations of *Euclea linearis* and *E. crispa* were analysed. Herbarium studies had indicated that the former has undergone introgressive hybridisation

with the latter in two (Rhodesia and Transvaal) of its three highly disjunct areas of distribution. In the third area (Western Cape), where *E. crispa* does not occur, some environmental modifications simulate the putative hybrids occurring in Rhodesia and the Transvaal.

Of the four subspecies of *Diospyros lycioides*, subsp. *guerkei* is diploid and subsp. *sericea* tetraploid. Counts are not available for the other two. Morphological and field evidence has suggested that subsp. *sericea* might be an amphiploid with subsp. *lycioides* and *guerkei* as parents and that it may have arisen more than once. Mr. White was able to study these in detail and to collect seed for working out this complex.

MR. LARRY LEACH is continuing his systematic investigation of euphorbias and stapeliads in Southern Africa. He is based in Nelspruit but attached to the Government Herbarium in Salisbury.

Recently accompanied by Mr. and Mrs. Ian Cannell, (his companions on many previous expeditions), he set out to investigate the position of some South West African euphorbias and the relationship between some of these and others from Southern Angola. He was particularly interested in the *Euphorbia subsalsa* and *E. gregaria* complexes. As a result of their trip there is at least one new species from Angola to be described and another from South West Africa. They were fortunate enough to obtain adequate material of these.

Epupa Falls and Otjipemba in the extreme north of the Kaokoveld were visited, also various localities in Damaraland as well as Lüderitz area, Aus and other 'euphorbia' localities as far south as Vioolsdrift.

One of the floral highlights of the trip was seeing *Hoodia parviflora* in large numbers and in full flower in association with *Pachypodium lealii* near the hot springs at Otjingangasemo. *Euphorbia virosa* was found to be far more common and widespread than the herbarium records appear to indicate (a by no means unusual story where succulent spiny euphorbias are concerned).

ETHEL MAY DIXIE died in Cape Town last month at the age of 97. Miss Dixie started botanical painting last century and was commissioned by Rudolf Marloth

to illustrate species for the first volume of his Flora of South Africa, published in 1913. She continued painting for Marloth until his death. Miss Dixie was wellknown in Cape Town for her work which was eagerly sought after each year at the annual fête of the old age home she lived in at Rondebosch.

OUR GREEN HERITAGE - a book about indigenous and exotic trees in South Africa. This book is published by Tafelberg to mark the promotional campaign for trees and wood, Our Green Heritage/Ons Groen Erfenis 1973 under the aegis of the Minister of Water Affairs and Forestry. It is edited by W.F.E. Immelman (Chief Director of Timber Industry in the Dept. of Forestry), Prof. C.L. Wicht (Prof. of Silviculture in the Faculty of Forestry, University of Stellenbosch) and D.P. Ackerman (Chief Director of Forest Industry in the Dept. of Forestry). The book is divided into 7 main sections covering natural resources, trees in South African history, wood in our culture, scientific forestry, trees in South Africa, man and forests and the timber industry today. Altogether there are 20 chapters written by a panel of 17 experts. Chapter 11 contains keys to, notes and drawings of 2 000 selected indigenous and exotic trees and how to recognise and grow them by Mr. R.J. Poynton, Asst. Director of Research in the Dept. of Forestry.

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