OBITUARIES

JOHN PHILLIP HARISON ACOCKS (1911-1979)

John Acocks (originally Acock) was born in Cape Town on 7th April 1911 (Fig. 1). He received most of his schooling at the South African College School (SACS) and then entered the University of Cape Town, where he graduated with B.A. & B.Sc. in 1932, majoring in Botany, Physics, Chemistry and Latin, In botany he studied under Professors R.S. Adamson, R. H. Compton, Dr M. R. B. Levyns and Miss E. L. Stephens. In 1933 he was awarded the M.Sc. degree for a thesis entitled "Vegetation of portion of the Cape Flats" . Subsequently he worked for two years towards a Ph.D. degree on the effect of burning, resting, clearing and cultivation of the humid fynbos of Kirstenbosch and the more arid fynbos of Tierbos, Hout Bay. This work was undertaken at the instigation of Dr I. B. Pole Evans, then head of the Division of Plant Industry, who was looking around for suitable pasture research officers. Owing to lack of essential apparatus apparently not supplied in time by the Department of Agriculture, Acocks was unable to finish his project. It was about this time that Acocks (letter to Mr L. S. Richfield of 1976-12-03), while looking at fynbos on Sir Lowry's Pass, observed that there "were a lot of species that one already knew at sight with certainty, there were a lot more in collectable condition and the remainder would sooner or later become collectable. Eventually one would know them all and would simply list them, collecting specimens only when in doubt." Thus was evolved his well-known listing method of plant survey.

In January 1936 Acocks joined the Division of Plant Industry in Pretoria and worked under Dr



FIG. 1.-Mr J. P. H. Acocks.

J. W. Rowland. Within a few months he was sent to Kimberley to make a survey of the Grigualand West area (Fig. 2) in connection with the vermeerbos problem and to establish a research station there. He chose a suitable site for a research station (at Koopmansfontein), but was relieved of the task of establishing it. Based at the McGregor Museum in Kimberley, Acocks carried on with his survey of vermeerbos and took the opportunity of applying his listing method. He widened his horizons by surveys of farms in other parts e.g. Carnarvon, Petrusburg and Middelburg, Cape. He had a break of four months when he was assigned to the Swedish plant collector, Adolf Häfstrom; from 17th September-15th November 1938 they undertook a plant collecting expedition "by devious routes from Cape Town to Victoria Falls and back", travelling in an enormous black Chrysler sedan (Fig. 3). The joint collection amounted to 2 340 specimens.

In 1939 Acocks returned to Pretoria, where he became involved in the botanical analysis of pastures, at Rietvlei Pasture Research Station just outside Pretoria and Leeuwkuil Pasture Research Station near Vereeniging. He applied his estimated frequency listing method and devised two new methods of pasture analysis, namely the ring and rod method (Fig. 4) and the basal cover calipers method, all of which were significant enough to be fully described in the Commonwealth Agricultural Bureaux Bulletin No. 42 (1954). He studied the vegetation of the Kakamas Veld Reserve in the northern Cape and accompanied Dr Pole Evans and others on several trips to the Transvaal Bushveld to take photographs illustrating good and bad farming practices.

During 1941–1942 he was stationed at Towoomba Pasture Research Station near Warmbaths. There he made detailed surveys of the pastures on the station involving four or five successive stages in 16 veld types and sub-types (see Diagram 1, p. 2 in Veld Types of South Africa, 1975.). Together with Mr L. O. F. Irvine O/C of the Station, he travelled widely in the northern Transvaal examining the effects of various grazing systems on pastures. At this time Acocks contributed to Professor J. M. Hector's "premature" attempt to compile a detailed vegetation map of South Africa to replace the rather oversimplified vegetation map produced by Pole Evans in 1935. However, as Acocks pointed out (letter to author, 1969–02–26), "we found we could distinguish 140 vegetation types, but none of us concerned with it could draw the boundaries except in the few regions we happened to know well, e.g. parts of the Trans-vaal in the case of Hector, Irvine and others, Natal in the case of Pentz, and Griqualand West in the case of myself. This meant that somebody would have to undertake a survey of most of the country, and he (Hector) wanted the Department to second me to him to do the job.'

In 1942 Acocks was based at Dohne Research Station near Stutterheim in the eastern Cape, where he carried out point quadrat analyses of pastures and collected generally in the region.

1943 saw Acocks at Estcourt Pasture Research Station in Natal. As on the previous stations, he was occupied with botanical analyses of pastures. In addition, he did much collecting and most important of all, conceived the idea of the veld type. To quote Acocks (letter to author, *l.c.*), "The idea of the Veld



FIG. 2.—Acocks's camp under Acacia erioloba at Witsand, south-west of Postmasburg in Griqualand West.



FIG. 3.—The two Swedish collectors, Adolf Häfstrom & Erik Wahl, who Acocks joined on an expedition from Cape Town to the Victoria Falls in 1938. Photograph taken at Buisvlei north-west of Prieska.



FIG. 4.—The ring and rod method of pasture analysis being used in the Kakamas Veld Reserve (1939).

Type was developed, while I was stationed at Estcourt, under the influence of Pentz with his idea that the vegetation, being an indicator of the whole ecological environment, is also an indicator of correct land use." Acocks defined the veld type as "a unit of vegetation whose range of variation is small enough to permit the whole of it to have the same farming potential." In July 1945, while still at Estcourt, Acocks was transferred to the newly-created Botanical Survey Section of the Division of Botany and Plant Pathology. Largely at his own insistence, he was given the huge task of preparing a comprehensive vegetation map of South Africa which, according to Acocks (letter to M: Richfield, *l.c.*), "was what all the previous work appeared to be calculated to lead up to."

Acocks remained at Estcourt and surveyed the eastern part of the country. In the survey Acocks employed his relative abundance listing method and used as his unit of vegetation, the veld type. In 1948 the western part had to be surveyed "in less detail as the need for the map became more urgent", and consequently Acocks was transferred to Middelburg in the Cape, where he was based at Grootfontein College of Agriculture. In 1948 and 1949 Acocks travelled all over the country as a member of the Desert Invasion Committee.

Acocks's mapping method proved so successful that within eight years he had sufficient data to prepare a vegetation map and accompanying text, which was published as "Veld types of South Africa, *Mem, bot. Surv. S. Afr.* No. 28, 192 pp. (1953). An accomplished artist, Acocks did all the colour work of the original map. During his survey Acocks examined 1533 stands and collected over 25 000 specimens (i.e. numbers). In "Veld types" Acocks recognized 70 veld types and 75 variations. These were described in varying detail,

the veld types in the eastern half of South Africa (as explained earlier), receiving greater attention than those in the western half. Considerable accent was placed on the spread of Karoo as a result of incorrect veld management. Included in the memoir was a series of maps showing the vegetation of South Africa in AD 1400, 1950, 2050? (showing the possible spread of karoo eastwards almost as far as Vereeniging and of desert almost to Bloemfontein) and a map showing what the vegetation would be like if scientifically managed. The memoir was updated in 1975, the second edition containing 104 photographs illustrating the veld types. "Veld types of South Africa" is a classic work in the field of South African botany and the information contained therein has been used by scientists of many disciplines. The map has stood the test of time and even after 26 years does not require radical revision. The map has been described by some as essentially a land use map and this is one of the reasons for its great value.

Since 1953 Acocks attempted to equalize his treatments of the veld types. He concentrated chiefly on the karoo and karroid types and had examined an additional 2 467 stands involving some 177 000 species records (Figs 5, 6 & 7). The revision of these veld types will be published in the Institute's journals.

During the course of his survey, Acocks collected over 25 000 numbers of beautifully pressed specimens (with the labels written in his copper-plate handwriting), which have enriched herbaria both here and overseas. At the same time he added much to our knowledge of the South African flora (Fig. 8): many new species were discovered and new distribution records made. Acocks had an exceptionally good "eye" for plants and was able to recognize plant species in all their various growth and ecological forms. He often corrected herbarium identifications and was frequently consulted by taxonomists with problems concerning species limits.

Acocks amassed a tremendous amount of data on plant distribution and frequency and this is all meticulously indexed on cards. The Department of Agricultural Technical Services considered his data so valuable, that all his field note books were microfilmed several years ago. The possibility of computerizing his data is being explored.

Apart from botanical work, Acocks played a significant rôle in pasture science in South Africa. Mention has already been made of his contributions to pasture analysis. As early as 1945 Acocks came to the conclusion that what the veld needed was nonselective grazing with short, heavy gazing followed by long rests. This, he felt, would help to restore the climax vegetation in many parts of the country. After the publication of "Veld types", he was able to devote more time to the subject and eventually in 1965 he formulated his principle of non-selective grazing (NSG) which formed the basis of the Acocks-Howell method of grazing management. A document setting out Acocks's views in detail was sent to all pasture research workers in South Africa in August 1965 and comments were invited. Pasture scientists, on the whole, opposed the method, some suggesting that there was nothing new in the method while others doubted that it would work in all types of grassland. The extra cost of fencing and provision of watering points was also mentioned. However, a considerable number of farmers, particularly in the Karoo, supported the method, some even testing it and refining it and achieving apparently successful results. The method received considerable publicity and was even



FIG. 5.—Map showing Acocks's listing sites up to September 1967.



FIG. 6.—Map showing roads traversed by Acocks from 1934–1965.



FIG. 7.—Acocks listing plants in Coastal Macchia at Danger Point in 1962.



FIG. 8.—Acocks viewing Aloe falcata in Namaqualand in 1963.

exported, modified and applied with success in Zimbabwe. The well-known wagon-wheel method of grazing management devised by the Zimbabwe ecologist, Alan Savory, is derived from the Acocks-Howell method. It is true to say that the Acocks-Howell method, while to-day not generally accepted in its original form, led to the acceptance of the feasibility of multi-camp systems; it led to the reappraisal of existing systems of grazing management and provided a stimulus to the development of new systems.

Acocks retired from the Department of Ag-icultural Technical Services in April 1976, but was re-employed to complete his revision of "Veld types of South Africa".

Mention must be made of Acocks's guidance to a long line of ecologists at the Botanical Research Institute and elsewhere. He gave freely of his knowledge and experience and this has benefited South African ecology immensely. Acocks did not receive the recognition he deserved, partly because he was stationed in Middelburg in the Cape, far from the main scientific centres and partly because he was by nature, a quiet, solitary and individualistic worker. He repeatedly refused promotion, because he wished to carry on with research.

Acocks's publications, though few (list appended) represent extremely valuable contributions to South African botany, especially "Veld types of South Africa". Clearly reflected in Acocks's papers were his chief attributes as a scientist, namely a capacity for painstaking collection and synthesis of data and a capacity for original thinking.

Honours came to Acocks in his twilight years. In 1975 he was awarded a gold medal by the Fertilizer Society of South Africa for his outstanding contributions to agriculture. In 1976 he was awarded three medals: the medal of the Wildlife Society of Southern Africa for notable contributions to conservation; the South African Medal for Botany awarded by the South African Association of Botanists and the Senior Captain Scott Memorial Medal by the South African Biological Society for outstanding scientific research.

Acocks died at Middelburg in the Cape on 20th May 1979.

In conclusion, I would like to quote Dr R. A. Dyer, one of his previous directors, who wrote: "In his specialized field of plant geography, Acocks is without peer amongst botanists both past and present". We salute a brilliant botanist and a good friend.

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D. J. B. KILLICK

ADOLF JOSEPH WILHELM BAYER (1900-1978)

Born at Hermannsburg, Natal, on the 8th January 1900, Adolf Bayer, except for vacations and a study tour in America, spent his life in the province of his birth. His school days were at Durban Boy's High and his university career was completed at the then Natal University College, Pietermaritzburg. He majored in botany and obtained his D.Sc. degree under the world renowned plant ecologist, J. W. Bews. He was appointed lecturer under Bews in 1925 and in 1939 succeeded him in the professorial chair, which he occupied with distinction until his retirement in 1967. At this juncture, he was awarded the title of Emeritus Professor of Botany.

It was not surprising that Adolf Bayer's scientific leaning was to plant ecology to which aspect of botany he specialized as a background for his wellillustrated university lectures. In addition to his professorial duties, he served on the Senate and University Council and performed the duties of Dean of the Faculty of Science on several occasions. In 1970 he was appointed acting Vice Principal of the University of Natal in Pietermaritzburg and awarded the degree of Doctor of Science Honoris Causa.

Apart from his strictly university duties, Adolf Bayer (Fig. 9) took an active part in the affairs of a number of outside societies, served on numerous commissions and many advisory bodies. He was Sectional President of the South African Association for the Advancement of Science $(S_2 A_3)$ in 1942 when he delivered an address on "Thornveld trees (Natal): a note on plant adaptation", and was President of the



FIG. 9.-Professor A. W. Bayer.

Society in 1971, when his address was entitled, "Aspects of Natal's botanical history."

In recognition of his contributions to botanical science he was elected a Fellow of the Royal Society of South Africa and Volume 36 (1970) of the Journal of South African Botany was dedicated to him in eulogistic terms.

It has been said of Adolf Bayer that in spite of his personal contributions to science he preferred to be recognized for the many distinctions gained by his students. The Botanical Research Instituted has over the years boasted a strong contingent of staff who qualified under his tutelage.

As a contemporary student, lifelong colleague in botanical science and personal friend, I can testify to his unassuming kindly nature, staunchness, dedication and absolute integrity. In these times when old age often presents social problems, one cannot mourn the peaceful passing of one who has had a long and fruitful life to the end. In a letter written in the week of his death he wrote: "Daphne and I have had a better year healthwise than any since 1973. I have finished my contribution to the book on Katharine Saunders's flower paintings and the printer hopes to send proofs during the month. Anyway I can relax awhile. Yours Adolf."

He died at his home in Kloof on Friday, 8th December 1978.

R. A. DYER

ROBERT HAROLD COMPTON (1886–1979)

Professor R. H. Compton, former Director of the National Botanic Gardens, Kirstenbosch, died in his 92nd year in Cape Town on 11 July 1979 after a career devoted almost entirely to studying the South African flora (Fig. 10).

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FIG. 10.—Professor R. H. Compton.

He was born at Tewkesbury, Gloucestershire, on 6 August 1886 and was educated at Mill Hill School, London, entering Gonville and Caius College, Cambridge in 1905. In 1909 he graduated with a double first class and distinction in botany, later taking the M.A. degree. From 1911–13 he was Demonstrator in Botany at Cambridge University and during 1914 participated in a field expedition to New Caledonia, collecting about 2 500 specimens of the rich flora, including new genera and a number of new species. In 1915 he married Kathleen Askin Sealy of Sydney, Australia, and they had two children, a daughter and a son.

After some years of war service from 1915–18, he came to South Africa in March 1919 to become Director of the National Botanic Gardens at Kirstenbosch and Harold Pearson Professor of Botany at the University of Cape Town, posts which he held for the next 34 years. While at Cambridge his main contributions to botanical literature dealt with anatomy and morphology of Gymnosperms, Pteridophytes and Angiosperm seedlings but, from his arrival in South Africa, his interests turned to the taxonomy of the South African flora. Most of his papers were published in the Journal of South African Botany which he initiated in 1935 and edited until his retirement.

In 1921 he established the first subsidiary garden of the National Botanic Gardens when he acquired a site at Whitehill near Matjiesfontein to cater for the rich succulent flora and, in 1931, he published a paper on the flora of the Whitehill District in Trans. Roy. Soc. S. Afr. 19: 269–329 in which two new genera and many new species were described. In 1945 the Karoo Garden was moved to a more convenient location near Worcester. He collaborated with the artist Elsie Garrett Rice in her production of Wild Flowers of the Cape of Good Hope, Cape Town, 1951, and in 1965 published a history of the first 50 years of the National Botanic Gardens under the title Kirstenbosch, Garden for a Nation.

On his retirement in 1953 he settled in Swaziland and, at the request of the Swaziland Government, supported by the British Colonial Development and Welfare Fund, he undertook a botanical survey of the territory. Preliminary results were published as "An annotated checklist of the flora of Swaziland" in Jl S. Afr. Bot. Suppl. 6 (1966). After his return to Cape Town in 1971, he enlarged this to a full scale "Flora of Swaziland" which appeared as Jl S. Afr. Bot. Suppl. 11 (1976) on his 90th birthday.

Many honours were conferred upon him. He was elected F.R.S.S. Afr.; was President of the S. African Association for the Advancement of Science in 1957 and received their medal and grant; an Honorary fellow and medalist of the Royal Horticultural Society; twice President of the South African Museums Association; President of the Mountain Club of South Africa for eleven years and was awarded an honorary D.Sc. by the University of Cape Town in 1968.

He was one of the most prolific collectors in South Africa, his numbers exceeding 35 000, of which about 8 000 were collected in Swaziland. As may be expected, these contained many novelties and two genera are named after him: *Comptonella* Bak. f. from New Caledonia and *Comptonanthus* B. Nord. from South Africa. In addition, he is commemorated in the names of about 20 species. When it was decided to remove the Bolus Herbarium from Kirstenbosch to the University of Cape Town in 1938, he vigorously set about building up a new herbarium at Kirstenbosch which, appropriately, is named the Compton Herbarium in his honour.

L. E. CODD