

## Celebration of a Life in Botany

### Dr John Stanley Beard – on the occasion of his 90th Birthday

John Beard was born on February 15th 1916 at Gerrards Cross, a dormitory suburb on the west side of London. Initially studying architecture at University College, London, to follow in his father's footsteps, John later changed to the School of Forestry at Oxford. After graduating in 1937, he applied to the Colonial Office for an appointment as a colonial forest officer, and was sent to Trinidad in the West Indies as Assistant Conservator of Forests. In 1940, John returned to Oxford for a postgraduate course which was customary in the Colonial Service. There, the late Dr Burt Davy kindled his interest in forest ecology, suggesting work in Trinidad as the basis for higher degrees.

Following his marriage to Pamela Davey in England in 1940, John returned to Trinidad as Research Officer to the Forest Department, with the task of using aerial photographs to prepare land-use maps of the alienated land and vegetation maps of the Crown Land. He was able to use this work as a basis for his theses on the natural vegetation of Trinidad and Tobago. These were submitted first for his BSc at Oxford, and later for his doctorate which was conferred in 1945 (this work was published as Oxford Forestry Memoir No 20 in 1946). In 1943, John was seconded to the Colonial Development and Welfare Organisation for work in the adjoining Windward and Leeward Islands and Barbados where he was to advise the 10 governments concerned on the foundation of forest services. He wrote reports and forest laws, recruited staff, endeavoured to secure forest reservation, made land-use and vegetation maps, compiled a herbarium of trees and shrubs, and conducted surveys of forest resources. Later, this led in 1949 to the publication of *The Natural Vegetation of the Windward and Leeward Islands*. Three months leave in Venezuela in 1945 included an expedition to the Guiana Plateau to study the savanna vegetation. John's work on vegetation in the American tropics culminated in the drafting of a physiognomic system of classification of climax communities. While now outdated, this work was considered classic for a time and was outlined in textbooks, e.g., Cain and Castro's *Manual of Vegetation Analysis* 1959, and P W Richards' *The Tropical Rainforest* 1952.

After the war, John secured an appointment in South Africa as silviculturist with the Natal Tanning Extract Company working on crop improvement in the wattle industry. The company had 100,000 acres of plantations in Natal and the Eastern Transvaal, as well as associated enterprises in Rhodesia, Tanzania, Kenya and Morocco which were visited from time to time. As a hobby, assisted by grants from the South African CSIR, John took up the study of the genus *Protea*. Much later he was able to publish *The Proteas of Tropical Africa* illustrated by Lura Ripley, a South African botanical artist. John also developed an interest in the botanic gardens of Pietermaritzburg, which had been established by the

Botanic Society of Natal in 1874. John became President of the Society in 1955, and became directly responsible for the Gardens which at that time were in a moribund condition and starved of funds. The interests aroused by this honorary work led him to apply for the post of Director for the as yet to be established botanic garden at Kings Park, Perth, taking up the position in September 1961.

The new Garden at Kings Park was to specialize in the study, cultivation, and display of Western Australian native plants. However, there were problems in establishing the Garden, as there was a lack of basic information about native plants, e.g., edaphic issues associated with the specialized habitats in which many of the most beautiful species grew. There was also a lack of basic information about native plants – how many species existed in Western Australia, and their phytogeography. Additionally, there were difficulties



In academic dress for "Final Schools" at Oxford University in 1937.



Addressing a field day for wattle growers, Natal, South Africa, in the 1950s.

procuring suitably experienced local staff, as at that time there was no formal training in horticulture in Western Australia (later there were to be evening classes at Kings Park, until the coursework was taken up by the Education Department), so the first gardeners and nurserymen were horticulturists from overseas institutions. Also, to ensure the best possible opportunity for establishing the botanic garden along international principles, the Park Superintendent, Arthur Fairall, was recruited from his post as Director of Parks in

Pietermaritzburg. The first Nurseryman was Ernst Wittwer, a Swiss who had also trained at Kew Gardens. An Australian, Fred Lullfitz, who had been operating a wildflower nursery at Cannington, filled the post of Seed Collector, making many important collecting trips between processing the seed for the nursery. A nursery was established during the first year (1962), with six hundred seed lots sown; the first plantings in the Botanic Garden were made in 1963. The Botanic Garden was officially opened in 1965.

However, the lack of basic information on native flora continued to be a problem. In order to advance Western Australian botanical science, John initiated an inventory of plant species and an inventory of plant communities (vegetation types). A list of plant species classified into genera and families had been drawn up some years before by the then Government Botanist, Charles Gardner, but this provided names only. "The Beard catalogue", as it became popularly known, indicated for each species what kind of plant it was, height, flower colour, flowering time and what district in the State it was found – in other words, the basic information needed by the horticulturist. Published by the Society for Growing Australian Plants in Sydney in 1965, it remained a 'best seller' for many years.

The task of cataloguing of plant communities (*i.e.*, vegetation mapping) was difficult and required considerable effort, in fact 17 years, but it must be remembered that in the 1960s even publication of basic topographic maps had barely commenced, and although aerial photography was available, access tracks into remote areas were still in the progress of being made.



Talking to the Honourable David Brand and his wife after the official opening of the Kings Park Botanic Garden in October 4<sup>th</sup> 1965.



An attempt to reach an oil camp in the Great Sandy Desert, in the 1970s, after freak rains.

The vegetation mapping necessitated field work to record plant species, soil associations and vegetation types, codifying this information and translating it onto aerial photographs to be later transferred to 1:250,000 topographic maps. Fieldwork for this project started in 1963, initially carried out by John accompanying Fred Lullfitz on his seed-collecting expeditions. As the publication stage approached, political problems were unfortunately encountered. This was the period of almost unlimited farming expansion in the wheatbelt and the government did not wish prior knowledge of vegetation to be broadcast in case there was popular demand for conservation reserves. After nine years as Director of Kings Park, this impasse led John to take up the Directorship of the Royal Botanic Gardens in Sydney in late 1970. During his time at Kings Park, in addition to botanical work, there was design and construction of the spiral tower (now known as the 'DNA Tower'), construction of the lake at the bottom end of the park (Western Power Parkland) and of the longwalk or vista joining the two.

John retired in 1973 from the Directorship at Sydney, and on returning to Perth continued on with the task of completing the vegetation maps of Western Australia. On his return to Perth, there also was a fortunate meeting with Professor Martin Webb who had newly arrived as head of the Geography Department at the University of W.A., and shared an interest with John in promoting vegetation mapping. The two collaborated in producing the Vegetation Survey of Western Australia. Two map series were undertaken: one at a scale of 1,000,000 with seven sheets in colour covering the whole State,

published by the University of Western Australia Press with support from the ABRS, and the other with 24 sheets at 1:250,000 covering the southwest only where there would be interest in more detail available at the larger scale. These maps could only be printed in black and white and were published initially by the University Geography Department. Maps were accompanied by an explanatory booklet. Fieldwork was aided by the generosity of Dr Jack Sunderman, who loaned John his personal Land Rover and caravan.

The Vegetation Survey was completed in 1981 in time for a map display at the International Botanical Congress in Sydney. To produce the maps, it is estimated to have involved road traverses totaling some 150,000 km, recorded in 1100 pages of longhand notes. Some 6870 botanical specimens were collected and about 1000 photographs taken. The area mapped amounts to the western third of Australia, about 2,500,000 square kilometres and must be a record for an area mapped in this way by one person. Subsequently, John continued to be active in ways that satiated his botanical interests. A single vegetation map of the State at 1:3,000,000 was produced by the Forests Department, and one at 1:10,000,000 was included in the sesquicentenary publication *An Atlas of Human Endeavour*. John himself published a book *Plant Life of Western Australia* in 1990 to illustrate some 500 of the photographs taken on fieldwork.

In 1983, John was awarded the Royal Society of Western Australia medal "for distinguished work in science", and later became President of the Society for the year 1986–87. John continued publication of scientific papers. The last botanical paper, *Species richness and endemism in the West Australian flora*, written in conjunction with A R Chapman and P Gioia, from the Western Australian Herbarium, was published in 2000. Interested in geomorphology, John investigated the evolution of drainage systems in successive parts of the State, with papers in 1998, 1999, 2000, 2003 and 2005. The latest publication is in press. This continued an earlier interest in palaeodrainage, a map and booklet having been published in 1973. In 2003 John was appointed a Member of the Order of Australia (AM) in recognition of his services to science.

A bibliography of Dr John Beard's work is included herein.

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