

B. P. Pal

(1906 - 1989)

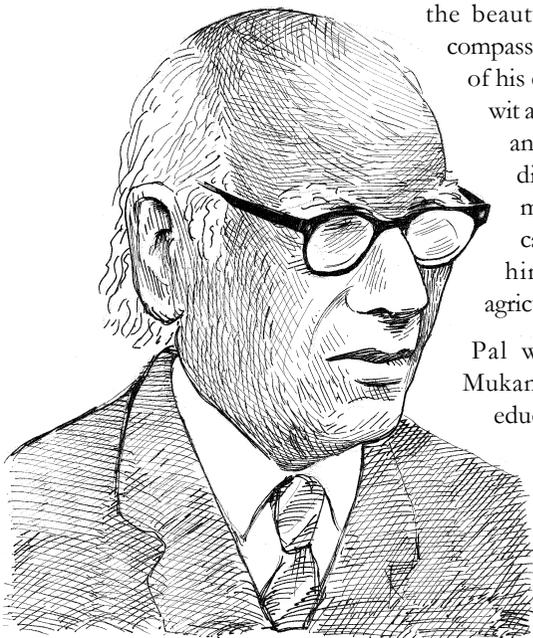
"It was during Dr Pal's leadership that the agronomic research on wheat in India equalled the best in the world. He was truly the architect of India's Green Revolution."

- Dr Norman Borlaug, Nobel Laureate

Benjamin Peary Pal was not only a gifted plant breeder and geneticist but was endowed with amazing human qualities. As a bright scientist he grasped the critical issues which hampered Indian agriculture. He was deeply sensitive to the beauty and harmony in nature. As a

compassionate warm person he was a darling of his colleagues and a profound store of wit and wisdom. His interests were wide and varied. He was a painter of rare distinction and a lover of classical music, both Indian and Western. His catholicity of interests certainly made him the *Homi Bhabha* of Indian agriculture.

Pal was born on 26 May 1906 in Mukandpur, Punjab. He had his early education in Burma where his father worked as a Medical Officer. There he attended the St. Michael's School, where he developed his love for roses and painting. His school had a beautiful rose garden and many of his teachers were



fond of gardening and painting. He always stood first in the class and once won a paint box as a prize. This perhaps led to a life long passion with painting.



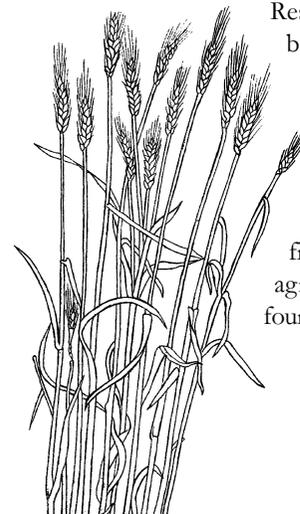
He finished MSc Botany in 1929 winning the Matthew Hunter Prize for topping all science streams in the University. He then proceeded to Cambridge, UK, where he did a PhD in 1933. His PhD thesis under the guidance of Sir Roland Biffen and Sir Frank Engledow is still a classic - amongst the first to exploit the potential of wheat hybrids. He joined the Indian (then Imperial) Agricultural Research Institute (IARI) in Pusa, Bihar in 1933 and rose to become the Imperial Economic Botanist in 1937. In 1936 after an earthquake severely damaged the Pusa institute it was shifted and Pal came to New Delhi.

Dr. Pal's enormous contributions to Indian agriculture can only be gauged by recalling the grim food scenario of the late 1960s. India faced a major food crisis and was viewed as a country of starving people. Millions of our people survived on food gifted by the USA under the PL-480 plan. The Green Revolution conceptualised and launched under Pal's leadership radically transformed India from a starving to a surplus nation.

Pal's contributions can be classified into five major categories – research, education, extension, institution building and international cooperation. In all these areas his work was marked by tireless striving for relevance and excellence.

Pal's contribution to research relates to the breeding of multiple-resistant varieties of wheat. He understood that agricultural productivity could only be advanced in a sustainable manner through biological diversity. To systematically search for new genes he established the Plant Introduction Division which subsequently became the National Bureau of Plant Genetic Resources (NBPGR). He introduced modern technology to breed new varieties of potato, tomato and tobacco. For this he scouted for the best scientific talents in different institutes and actively collaborated with them.

He realized that a country the size of India with agriculture as its mainstay would require a huge army of high quality scholars in this field. This was the only way to uplift Indian agriculture. To achieve this end in 1958, he founded the Post-Graduate School at IARI, which



was soon conferred the status of a deemed university by the UGC. The contributions of over 4000 MSc and PhD scholars from this institute have fed India's billions and made the country self-sufficient in food.

Pal realized that only outstanding basic research could drive and sustain applied research. For this he established the School of Fundamental Genetics in IARI. He also set up mechanisms to foster multidisciplinary, multi-institutional research to solve problems of applied research. As Director of the IARI he made distinguished contributions to research, education and extension.

He served as the Director General of the Indian Council for Agricultural Research ICAR (1965-72). It is during this period that high-yielding varieties of wheat, rice, sorghum and maize became available for wide spread cultivation. To give further boost to the Green Revolution he strengthened research in the areas of animal husbandry and fisheries. This was also the phase when India collaborated with the best in the world to increase its farm productivity - with Mexico for wheat and Philippines for rice. Pal's efforts raised the stature of agriculture both nationally and internationally.



"Solve problems in the field" was his mantra for applied research workers. "From the lab to the field," was another motto for which Pal strove hard. He was convinced that in the final analysis it was the farmer who was the ultimate judge of applied research. To enable the students to appreciate the complexities of Indian society Pal introduced many social science courses in both IARI and ICAR. The reorganised ICAR model was soon emulated by several developing countries like Pakistan, Bangladesh, Philippines and Nigeria.

After retirement from the ICAR, Pal concentrated his energies on protecting the environment and became the first chairperson of the National Committee on Environmental Protection and Coordination. Pal was a rose breeder of distinction and created several new varieties. He was founder President of the *Rose Society* and *Bougainvillea Society*. With M. S. Randhawa he set up the



Chandigarh Rose Garden. His home was always open to all and he was a friend, philosopher and guide to both young and old research workers.

He founded the *Indian Society of Genetics and Plant Breeding* and edited the *Indian Journal of Genetics and Plant Breeding* for 25 years. He wrote many books to popularize his love for flowers. Notable amongst them are *The Rose in India*, *Beautiful Climbers of India*, *Flowering Shrubs* and *Environmental Conservation and Development*.

Pal was a trustee of several international research institutes and spent time strengthening agricultural research in many developing countries. The scientific respect he commanded is evident from his election not only as a Fellow of the Royal Society of London, but also of the science academies of France, Japan and the USSR, and of the Third World Academy of Sciences. In 1987, the Government of India conferred on him the Padma Vibhushan. In 2007, the Department of Posts printed a commemoration stamp of Pal with his beloved roses.



Pal was a gentle person and deep humanist. Many of the exquisite roses varieties bred by him were named to honour scientist like Sir C. V. Raman and Homi Bhabha. His first loved remained the IARI and towards the end he willed all his property including the two houses in New Delhi and Shimla, and his rare collection of roses and other articles to the IARI. Dr. Pal passed away in 1989.

