

2-m aperture remotely operated telescope as a first step.

Opportunities for research in astronomy and astrophysics were extremely limited in the country before 1980. JCB devoted considerable efforts to establish graduate schools. In addition to guiding students working in the areas of astronomical techniques, Sun and solar system astronomy, JCB assumed the responsibility of supervision of Bappu's students. The Joint Astronomy Programme of the Indian Institute of Science, involving several astronomy institutions, was initiated during his tenure, where he taught a course on astronomical techniques for several years. He went on to lay a firm foundation of IIA's graduate school and encouraged younger colleagues to teach as also to supervise projects. As the President of the Astronomical Society of India (1986–1988), he energized its programme on popularization of astronomy, especially to train students and teachers in astrophysics. His popular articles in Bengali and English magazines, which were written from 1977 onwards, inspired many students to take up astronomy as a career.

The structure of IIA, as it exists today, owes itself fully to JCB. He had initiated the new campus of IIA in Bangalore, leading a small group and setting up an electronics laboratory in the space provided by the Raman Research Institute during the early 1970s. The Institute moved to its present Koramangala campus in 1975 and the infrastructure development continued for nearly a decade. With JCB taking the reins in 1982, one

witnessed his skill in institution-building: setting up of the academic faculty, of departments named as Group Committees, instrumentation division, administrative structure, various benefits to the employees – such as career development opportunities, medical scheme and arrangements for residential accommodation. He fostered an atmosphere of academic discussions, involved scientists in the management of the Institute, and provided adequate administrative support to the academic staff. He set an example of personal integrity in public service, understood and followed rules and regulations of the government in the spirit of promoting discipline, transparency and accountability. Though some of the activities and organizational structure he established at IIA have undergone changes with time, the Institute stands firmly on the foundation he had laid.

Those who worked with JCB, or only just met him, would remember his smiling face which he wore even while working on difficult problems of management. At home and elsewhere, he was a perfect host, entertaining his guests through his culinary skills, sense of humour, and his interest in music, history and literature. Though he conducted himself in appropriate reserve in matters personal to staff members, he was always ready to provide sincere advice if called upon.

Following superannuation, JCB continued to be associated with IIA, as CSIR Emeritus Scientist (1990–1993), Emeritus Professor (1993–1995), Honorary Professor (1995–1997) and Member of Governing Council (1997–2007). He

served on many advisory committees and working groups at both national and international level over the last two decades of his tenure. He was associated with the Jawaharlal Nehru Planetarium for over two decades. He was Editor of the *Journal of Astrophysics and Astronomy* published by the Indian Academy of Sciences from 1988 to 1991. He was elected Fellow of all the three national science academies, the Institution of Electronics and Telecommunication Engineers, and was President of the IAU Commission 9 on Instruments and Techniques (1992–1995). The honours and awards he received include the M.N. Saha 30th Memorial Lecture Award of SINP (1983), P.A. Pandya Memorial Lecture Award of the IPA (1985), UGC–Hari Om Trust–Sir C.V. Raman Award for Research in Physical Sciences (1986), S.V.C. Aiya Lecture Award of the IETE (1986), ISOI Lifetime Achievement Award (1993) and S. K. Mitra Birth Centenary Award of the Indian Science Congress Association (2005). With his passing away, India has lost one of its founding fathers of modern experimental optical astronomy and an exemplary head of a scientific organization. He leaves behind his wife, daughter and son.

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M. Anantaswamy Rau (1916–2012)

With the passing away of M. Anantaswamy Rau on 6 June 2012 in Mysore, the Indian scientific community has lost a senior, highly accomplished and enlightened botanist with multiple interests. Rau was born in Mysore on 15 August 1916 to Rukminamma and T. R. Krishna Rau. His maternal grandfather, was the eminent scholar M. Hiriyanna, who taught Indian philosophy and Sanskrit at Maharaja's College.

Rau received his education up to the intermediate level in Mysore. Later, he received the subject scholarship and

moved to Central College, Bangalore to do B Sc (Hons.) (1936) and M Sc (1938) in botany. He was appointed Lecturer in botany at the Intermediate College, Bangalore (1938). The Department of Botany at Central College was headed by M. A. Sampathkumaran, who had his doctoral degree from the University of Chicago, under the guidance of J. Chamberlain.

Rau started studying the embryology of Leguminosae (pea family) on the suggestion of B. G. L. Swamy, who later carved for himself a unique place among world botanists. His early publications in

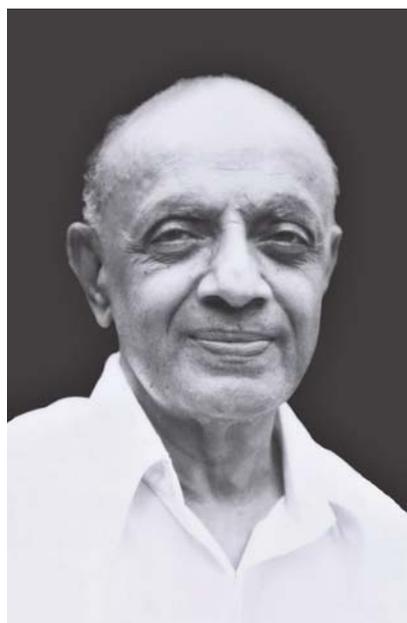
the 1940s appeared in the *Proceedings of the Indian Academy of Sciences Section B* and *Current Science*. He was transferred to the Intermediate College, Mysore in 1941. The same year he married Vijayalakshmi, who bore him a daughter and two sons. He made extensive collections of leguminous plants. It was during his long stay in Mysore that I became his student (1946–48) and accompanied him on bicycle all over the city and its surroundings. L. N. Rao, C. V. K. Iyengar, P. Maheshwari (Delhi) and René Souèges (from France) gave him encouragement

and reference materials. While dissecting the seed of *Cassia tora*, a roadside weed, Rau found a worm-like structure moving inside. On closer examination, he discovered that it was indeed the lower part of the free nuclear endosperm in an elongated pouch, whereas the upper part had become cellular, compact and surrounded the embryo. Rau conveyed this observation to P. Maheshwari. As such a structure was unusual, Maheshwari asked him to report it to *Nature* (London). This work was published under Letters to *Nature* in 1950 (166, 157). He has published a large number of research papers on different aspects of embryology of Leguminosae in esteemed journals, which have been cited in reviews and books.

Rau put together all his research work under the title 'Embryological Studies in Leguminosae' and submitted it to the University of Mysore in 1952. Due to the carelessness of the University Office, a bundle containing three copies of his thesis ended up nearly two years later at the Bhadravati Paper Mills (presently The Mysore Paper Mills Ltd) along with marked answer books for recycling! Providentially, an alert mill worker noticed it and handed over the parcel to his supervisor, who promptly mailed it to the University Office. In the meantime, Rau had received a Postdoctoral Award (Mary S. Muellhaupt Scholar) from Ohio State University at Columbus, Ohio, USA. Before his departure, P. Maheshwari advised him to select a problem in experimental or physiological morphology and continue the work in India. Historians of botany should note that Rau brought back with him the technique of plant tissue culture from USA and wrote the first paper on the application of tissue culture in plant embryology titled 'Studies in growth *in vitro* of excised ovaries – I. Influence of colchicine on the embryo and endosperm in *Phlox drummondii* Hook.' (*Phytomorphology*, 1956). This work was supported by the award of a Senior Fellowship by the National Institute of Sciences of India (presently Indian National Science Academy, New Delhi). The ovary and ovule culture work was subsequently continued in the University of Delhi.

The Government of India reorganized the Botanical Survey of India (BSI) in 1954 with Calcutta as the headquarters and with four circles one each in the south, east, west and north. Three emi-

nent teachers of botany from Central College, Bangalore were selected for senior positions. Rau was posted as Regional Botanist to the Northern Circle (established on 1 August 1956) at Dehra Dun as the first officer-in-charge. Disciplined upbringing, broad educational background, organizational skills, high integrity, astute judgement of the staff, enabled Rau to utilize the limited human



and material resources available at the hired premises on Lakshmi Road, Dalanwala to start a herbarium, museum, garden and library. Today, the Northern Regional Centre of BSI has its own 16-acre office-cum-residential complex at Kaulagarh Road in Dehra Dun. The Raus spent 18 years in Dehra Dun and provided good education to their children. They looked after the families of the staff as well and built up lasting friendships. Vijayalakshmi was an excellent cook and a wonderful host.

Rau joined the Indian Air Force mountaineering expedition (1959) to Garhwal Himalaya (Chaukhamba and Nilkanth) as a scientist. Other notable expeditions in which he participated or organized include the Indo-Soviet expedition (1960), Neelkanth expedition (1962), Valley of Flowers–Hemkund expedition (1965), Trishul expedition (1965) and Kedarnath Dome expedition (1967). His travels gave him first-hand knowledge of the vegetation and phytogeography of the Himalaya, on which subject he wrote a chapter in M. S. Mani's well-known book *Ecology and Biogeography in India*

(1974). Being a good photographer, Rau was able to collect pictures of rare plants, vegetation types, botanical gardens, and family members and friends. He published two books: *Illustrations of Western Himalayan Flowering Plants* (1963) and *High Altitude Flowering Plants of Western Himalaya* (1975), both issued by BSI. Rau had a remarkable memory for names of plants and people.

After retirement from BSI as Deputy Director in 1974, Rau returned to Mysore to settle down in his ancestral house. He was appointed as Retired UGC Professor in Mysore University from 1974 to 1976. This was most beneficial and stimulating to the students, research scholars and teachers. UGC selected him as National Lecturer in 1979–80, when he travelled to various universities and gave illustrated lectures. As Rau was a lucid, impressive and fascinating speaker, he was in much demand by educational institutions. He was invited to give a series of talks at Madras University during the Golden Jubilee (1980). Among the numerous other lectures Rau delivered, mention may be made of the Seward Memorial Lecture at the Birbal Sahni Institute, Lucknow; Bombay Natural History Society, Mumbai; Louisiana State University, USA and Arnold Arboretum at Harvard University, USA. The Indian Botanical Society honoured Rau with the Panchanan Maheshwari Medal in 1986 during the Annual Conference (Patna). He valued this very much as he always regarded P. Maheshwari as his mentor. Rau's award lecture was 'Taxonomy – Why?', setting out clearly its role in biology.

The close contact that Rau had established with the University of Delhi continued long after P. Maheshwari's demise. One highly valuable contribution of Rau is the historical account he has compiled on plant exploration in India and floras in Volume 1 of *Botany in India: History and Progress* (1994, pp. 17–41) edited by B. M. Johri. Natesh and Rau (1984) wrote a critical chapter on the embryo in the book edited by Johri on the *Embryology of Angiosperms*. Rau was appointed as a member of the Advisory Committee for the Centre of Advanced Study in Botany at the University of Delhi. He visited the department frequently for examining Ph D theses and conducting seminars.

What was unique to Rau was his love for sports – cricket, tennis, football and

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hockey. A keen student of the game of cricket from age of 10 onwards, he had mastered the rules and watched the players closely. He was one of the founder-members of the Mysore Gymkhana and obtained a high rank in the umpire's examination of the Karnataka State Cricket Association (KSCA). He was appointed a member of the First All-India Panel of Twelve Cricket Umpires in 1946 by the Board of Control for Cricket in India (BCCI). Between 1946 and 1956, Rau umpired eight Ranji Trophy matches and two of visiting teams, Marylebone Cricket Club – Maharashtra (1951) at Poona and New Zealand – South zone (1955) at Bangalore. He had umpired the top Indian cricket players of his time, and had won their admiration and respect. KSCA elected Rau as an Honorary

Life Member during the Golden Jubilee in 1984. He also gave a valedictory speech.

Rau wrote numerous articles and obituary notes on cricket players of Mysore (later Karnataka). He resigned from the BCCI panel of umpires after he joined to serve the Government of India. If this had not happened, Rau would have certainly been on the elite panel of umpires of the International Cricket Council. Cricket is a gentleman's game and it refined Rau's dignity and equanimity.

Rau was a walking encyclopedia and had systematically built an excellent library and maintained the family archive. Every time I visited Mysore, I made it a point to meet him. He always saw the guests off, walking up to the

gate. During the past two years he had lost his eyesight. His sense of hearing was good. He repeatedly asked to hear Ratan Mohan Sharma's recording of raga Yaman, which I had introduced to him. Although he could not tell what was being fed to him, he retained the taste of coffee till the end. When he was told the common names of the vegetables fed to him, he would whisper their scientific names (Latin names). He was a botanist till the end.

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Erratum

Elinor Ostrom (1933–2012)

Harini Nagendra

[*Curr. Sci.*, 2012, **103**, 433–434]

The first sentence in the first para should read: Elinor Ostrom, the only woman to receive a Nobel Prize in Economics (in 2009), passed away on 12 June 2012, after a short and intense battle with 'pancreatic' cancer *instead of* 'prostate' cancer. We thank Dr S. Ramanan and Dr Vikas Jain for bringing the error to our notice.