

Prof. Shankar Agharkar's Contribution to Maharashtra Association for Cultivation of Science (1946-1960)

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Abstract: *The history of the Agharkar Research Institute (ARI) is intertwined with the life of its founder, Professor Shankar Purushottam Agharkar, whose dedication and vision shaped the future of scientific research in Pune and India. Post-independence, India faced the monumental task of advancing scientific research amidst scarce resources and infrastructure. Professor Agharkar returned from Kolkata with vast experience and became the first director of the then Maharashtra Association for the Cultivation of Science (MACS). His selfless dedication and foresight guided the institute through its formative years, securing resources, inspiring scientific pursuits, and mentoring future researchers. Established under challenging conditions, MACS became an essential hub for scientific research, eventually evolving into the ARI, a leading institution. The institute's growth and success continue to honor Agharkar's legacy of resilience, scientific passion, and community support.*

Keywords: Agharkar Research Institute, Indian scientific research, Professor Agharkar, MACS, post-independence

India became independent in 1947 and a long period of an alien power ended. There is no doubt that India wanted its independence at any cost but the cost could even be a struggle to keep itself up with the challenges in the fields traditionally headed by the existing British regime. Major technological and scientific innovations were introduced by the British prior to independence and with independence came the responsibility of keeping India up-to-date with the changing needs of Science.

Science needs constant experimentation and innovative minds to carry out experiments. At the same time it also needs facilities where the experimentation can be done. In 2014, with several government supported laboratories and private laboratories in place, we may not understand the depth of the efforts some Indians took around the time of India's independence. As a result of these efforts India's independence in the field of Science and technology has been maintained in the post-independence years.

Professor Agharkar's life is a spirited odyssey. Pune city is fortunate to have the institute that stands with this great scientist's name. Agharkar research institute today is a leading science research institute in the country but it would not have been what it is today had it not been the sheer innovation, dedication, selflessness and a survivalist attitude of one man, Shankar Purushottam Agharkar, that saw the institute through in its new-born stage. Professor Agharkar has the distinction of becoming the first Director of the erstwhile MACS (Maharashtra Association for Cultivation of Science now Agharkar Research Institute, Pune) and justified his selection by the committee that resolved to form MACS as Pune's first Science research institute. Agharkar dedicated his Tan, Man and Dhan (body, mind and wealth) to the institute for the last fourteen years of his life (the last four of them while battling cancer).

A meeting was convened on October 7th, 1944 in Pune to discuss the possibility of establishment of University at Pune as the burden on Bombay University was overwhelming. Pune had a repute as the Meccah of education and its central location in western part of Maharashtra was most conducive to have a University there. Barrister Jayakar presided over the

meeting which was convened by the prime mover behind I.L.S. Law College Principal J. R. Gharpure. The need for a scientific research institute was also discussed in this meeting and it was resolved that a research institute was to be formed under the auspices of Indian Law Society (ILS) which would be known as Maharashtra Science Institute. A committee was formed to execute the resolution that had following members: Barrister Mukundrao Jayakar, Principal J.R.Gharpure, Narsopant alias Tatyasaheb Kelkar, Dr. R. G. Bhandarkar and Mahamahopadhyaya Datto Vaman Potdar. All the five were great educators in their own right.

The committee was further expanded and it co-opted members such as Prof. Agharkar (who later became MACS first director), Prof. S. L. Ajrekar, Dr. D. B. Limaye, Prof. N. V. Joshi, Prof. P. R. Awati, Prof. P. J. Deoras, Prof. D. L. Dixit, Dr. K. C. Gharpure, Dr. K. V. Joshi, Dr. N. V. Kanitkar, Prof. G. R. Paranjape, Prof. H. P. Paranjpye, Prof. G. B. Patwardhan, Prof. D. L. Sahasrabuddhe and others. A small room in the basement of the Law College was allotted to the proposed institute.

Prof. Agharkar was to return to Maharashtra after spending 33 years at the University of Kolkata. His position at the time of retiring from University of Kolkata was 'Ghosh Professor' and Head of the Botany department. Agharkar was very closely associated with the 'Indian association for the advancement of Science', Kolkata. On the lines of this institute he wanted to develop the newly found institute in Pune. So as an independent identity 'Maharashtra Science Institute' was renamed on the instance of Agharkar as 'Maharashtra Association for the Cultivation of Science' (MACS). It was registered as an educational trust on 1st October 1946.

The aims and objectives of MACS were as follows:

- 1) The promotion of Science including its practical application to problems of national welfare.
- 2) Maintaining an institute (or institutes) for scientific research.
- 3) Establishing a Science library.

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- 4) Spreading the knowledge of pure and applied sciences by means of lectures, publications, demonstrations, exhibitions, etc.

At the beginning, the institute was housed in two rooms in the basement of Law College.

Most interestingly it shared one of the two rooms with its sibling institute, none other than the University of Poona (Pune as we call it today). Agharkar had two challenges at this stage, one was the new-born institute needed qualified people and second and perhaps the most challenging, need for funds. The institute required a director capable of handling both these challenges. Agharkar had brought with him an immense experience from his Kolkata days and by nature he was a selfless visionary, an excellent administrator, a great human being and an expert scientist. He thus embarked on building a capable team and made a trust of his life's earnings and handed it over to the association to give it a financial jump-start. We may observe the gravity of Prof. Agharkar's dedication to the institute he so badly wanted to see grow and dedicate to the service of mankind.

In the beginning four departments were made which would undertake research in those respective fields. The departments were Botany, Mycology, Microbiology as well as Genetics and Plant breeding. The Department of Zoology was established in 1947 after the induction of Dr. Deoras and in the same year Dr. D. B. Limaye established the department of Chemistry. Prof. Agharkar's team was thus gradually becoming strong and all round.

Projects with Prof. Agharkar's direct involvement (1946-1960) were as under:

Cytogenetics of Mango and Banana, 1949-1951 which was sponsored by ICAR, New Delhi and was investigated by Prof. Agharkar.

Introduction and trials of the West African Oil Palm {*Elaeis guineensis* (Red Oil Palm)} in India, 1954-1956 was sponsored by ICOSC, Hyderabad and was investigated by Prof. Agharkar.

Band Disease of Coconut Palm in Bombay state, 1955-1962 was sponsored by ICCA, Ernakulam and was co-investigated by Prof. Agharkar along with N.V. Joshi and N. Narayana.

With the aid received from projects mentioned above it became possible for the Institute to procure equipment and cut paychecks to its employees.

In 1949 MACS's sibling University Of Poona was born and MACS got affiliated to it as its recognized centre for post graduate research leading to M.Sc. and Ph.D. degrees in various disciplines of the life Sciences.

Prof. Agharkar in 1952 wrote two papers, the first being "Vegetation of semi-arid tracts of the Deccan" in National Institute of Sciences of India's Symposium on semi-arid tracts of Peninsular India and their development. The second one was written in collaboration with his student B.A. Razi,

"Some aspects of embryology of *Lawia zeylanica* and *Zeylanidium olivaceum*", in Indian science congress.

Institute's first Ph.D. student under the guideship of Prof. Agharkar was S. Govindaswamy in 1952 (Poona University) and the first D.Sc. student was B. A. Razi in 1953 (University of Mysore) Razi had received his fellowship on Plant Taxonomy for a period 1950-1952 from National Institute of Sciences.

Prof Agharkar guided Mrs. Usha R. Patwardhan (1949-1950) for her M.Sc. and later he guided G. T. Tonapi for his Ph.D. (1957-1959)

At the instance of the Bombay Government, he undertook a revision of the Bombay volume of the Bombay Gazetteer. The first part dealing with medicinal plants was published in 1953 this part gave a brief account of the principal wild and cultivated species of medicinal plants found in the British Pharmacopoeia and in the Ayurvedic and Unani systems of medicine, together with those used as popular village remedies. An effort was made to bring together in one place the scattered information regarding the medicinal plants of the Bombay state. The other one was one on Timber and the woody plants was published in 1957. Research students came to Poona and worked under his supervision at MACS and completed their theses for the doctorate degrees, At MACS after the sad demise of Prof. Ajrekar and Prof. N. V. Joshi some departments were adversely affected but under the able leadership of Prof. Agharkar who inducted Prof. G. B. Deodikar and Prof. M. N. Kamat to take the cause ahead, that too in honorary positions. Prof. Agharkar embarked on a new scheme on intergeneric and interspecific hybridization of wheats which received financial aid from Indian Council of Agricultural Research, New Delhi. Professor Agharkar's selfless devotion to work induced spontaneous response from Mr. H.P. Paranjpye and Mr. E. B. Rajderkar who donated liberally and an Insect breeding station was constructed attached to the main laboratory.

Prof. Agharkar joined the high altitude research expedition in the Himalayas at the age of 65 and reached the starting station of the expedition two days in advance of the remaining party. He did not hesitate to brave the hardships of mountaineering and proved to be the most enthusiastic member of the party. This explains the multifaceted personality of Agharkar, the resourceful man and the scientists.

As a token of their high regard and esteem to Professor Agharkar, professors, research workers, students and prominent citizens of Poona held a meeting on December 11th 1958 at Law College premises to felicitate him on the occasion of his 75th birthday. The meeting was presided over by Dr. Sir Raghunath Paranjpye, then the vice-chancellor of University of Poona. He and several other prominent personalities praised Prof. Agharkar's contribution to the field of Science, especially Botany. In August 1956, Prof. Agharkar was operated for Cancer however he continued to work with a great energy for his beloved institute MACS and kept contributing to the field of Science. Prof. Agharkar passed away on September 2nd 1960 rather suddenly. At the time of his death he was working with Mr. A. K. Ghosh, Chief Palynologist, Oil and fuel commission, DehraDun. A day

prior to his demise, against medical advice Prof. Agharkar had visited the laboratories of MACS. This Institute is in all senses Agharkar's baby who he brought up through years of its infancy when its health was rather delicate. He left the child to the care of others in its teens when it had gained substantial strength. MAC's new guardians were well trained under Prof. Agharkar and had the ability and training to give shape to Agharkar's dreams.

More than his scientific prowess, Agharkar's contribution to Maharashtra Association For Cultivation Of Science lies in the great administrative and organizational skills he displayed in running the Institute between 1946 and 1960 as the founder-director. The MACS renamed its research institute as 'Agharkar Research Institute' on September 10th, 1992 in honour and memory of the late scientist who had nursed it so fondly.

Prof. Agharkar derived his strength from certain people who selflessly believed in Agharkar and supported him with extreme faith. One was his wife and the other was Dr. Deodikar. His wife completely co-operated in his social as well as scientific endeavours. Mrs. Agharkar adapted to a frugal lifestyle post retirement of her husband from University of Kolkata as he had joined MACS in a completely honorary capacity. They were not only going to get paid a salary but rather would have to shell out from their own pocket as and when required by the infant institute. Mrs. Agharkar donated to the institute proceeds from selling her ornaments. Mr. Agharkar's cause was synergised by Mrs. Agharkar's belief in her husband's dream and vision. Mrs. Agharkar passed away in 1981.

Dr. Govind Deodikar succeeded Prof. Agharkar as the director of MACS after the latter's demise. But it was Prof. Agharkar's encouragement that made Dr. Deodikar join MACS in 1951 as honorary Professor of cytogenetics and economic botany. In 1954 Deodikar received an ad-hoc A. P. Cess fund project from ICAR on "Interspecific and Intergeneric hybridization in tetraploid wheats." This project continued till 1963 and proved a landmark project in MACS' history. Prof. Agharkar groomed Dr. Deodikar to be his successor at MACS and Deodikar continued to nurture Prof. Agharkar's dream of making a prominent research institute in India. Dr. Deodikar retired as MACS' director in 1980.

The beautiful structure of Agharkar Research Institute in Pune stands majestically on Gopal Ganesh Agarkar road but Prof. Agharkar never had the opportunity to work there. The piece of land was allotted by Government of Maharashtra and the construction was complete in 1966. The Indian Law Society permitted the erstwhile MACS to use its basement for 20 years from 1946-66 which is in itself great gesture of goodwill and management's encouragement towards Poona's first Scientific research institute. When the MACS decided to move to its new building they decided to permanently etch their gratitude in stone. The plaque has been placed at the entrance of basement of Indian Law Society that reads:

"The Maharashtra Association For Cultivation Of Science records its gratitude to the Indian Law Society and to the Late Prin. J. R. Gharpure for facilitating its foundation as also for

providing free accommodation for laboratories of the association from 1946-1966."

It is best left to the imagination of the readers how Prof. Agharkar built the foundations of a Science research institute at a loaned place for fourteen years during his lifetime and the Institute continued to progress in the same place for another six years.

The visit to the Institute and especially taking a look at Prof. Agharkar's personal bookcases was a delight. The Library houses thousands of books, journals and papers that give evidence of work done in the field of Botany and related sciences. The culture set by Prof. Agharkar back then is still evident and one can see researchers engrossed in their work in various departments. However, even upon a mere mention of Prof. Agharkar's name evokes respect from the institute's current staff members. Everyone there seems to have an idea about the sacrifices Prof. Agharkar made for their institute and they possess a total respect for their founding father.

I also had an opportunity to interview a research fellow, Mr. V. M. Date who had worked with Prof. Agharkar as a CSIR fellow. He later joined "Plant diuretics" in 1961. He described Prof. Agharkar as a man who was very considerate. Mr. Date said that "Prof. Agharkar would approach a problem considering all its angles and had a soft personality." In Date's opinion Agharkar was a good fundraiser which is evident as without his able fund raising abilities the institute would not have survived its nascent years.

Abbreviations: MACS: Maharashtra Association For The Cultivation of Science

Prof.: Professor

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