

# ANANT GOPAL JHINGRAN

(1908–1977)

Elected F.N.I. 1954

## BIRTH AND CHILDHOOD

ANANT GOPAL JHINGRAN was born on August 12, 1908, at Amroha in Uttar Pradesh. His parents were, Lal Gopal Jhingran, a leading lawyer of the district and Radha Rani. Lal Gopal Jhingran was Secretary of the Local School where Anant Gopal commenced his primary education at the age of five. His childhood was marred by the sudden and unfortunate demise of his father, who became a victim of the 'Flu' epidemic of 1918 at the young age of 45. His father left besides Anant Gopal, two other sons and three daughters. Anant Gopal Jhingran was the fourth child of his parents.

At the time of his father's death, Anant Gopal Jhingran's elder brother, the late Vansh Gopal Jhingran, formerly Principal, D. S. College, Aligarh, was only eleven years old and his younger brother, Vishwa Gopal Jhingran (retired as Director, Central Inland Fisheries Research Institute, Barrackpore) was still to be born, posthumously. The untimely tragedy caused by the father's death deprived the family of the only source of support and the burden fell on the mother. The family later migrated to Lucknow to reside with their grand uncle and subsequently to Calcutta, where the mother earned a modest living, by teaching sewing and embroidery in a girls' school to support herself and the family.

## EDUCATION

Anant Gopal Jhingran passed the School Leaving Certificate Examination in 1924, in the first division with distinction in Mathematics. In recognition of his brilliant performance, he was awarded a merit scholarship by the U. P. Government. The scholarship, supplemented by earnings from private tutitions, enabled him to carry out his studies at the Intermediate Science level. His boyhood dream was to become a medical graduate so as to ameliorate human sufferings and accordingly, he selected the Biology group for studies. However, after passing the Intermediate examination, he had to reconsider his earlier decision because of the financial position of the family, which could ill afford the comparatively expensive and time-consuming medical education. He finally gave up the idea of becoming a medical graduate and decided to take up studies in the comparatively new field of Geology, for which he developed a liking through his American teacher of Chemistry, Mr Tweedie,





*H.S. Ghisingra*



at the Lucknow Christian College. The crystals and minerals which Mr Tweedie showed made a deep impression on his mind and inspired him to study them professionally in an intensive manner.

There was no facility for the study of Geology at the Lucknow University at that time. In fact, there were only two centres, Calcutta and Banaras, for study of Geology in North India. He accordingly decided to move to Banaras. The Banaras Hindu University was a great national institution and enjoyed international reputation. Students from all parts of the country thronged to this University, but only the most talented and meritorious could hope to get admission there. His going to Banaras involved further financial commitments which young Jhingran met through merit scholarships, private tuitions as well as through odd part-time clerical jobs.

Jhingran passed his B.Sc. examination in 1928 and M.Sc. in 1930, securing a first division in both and also the first rank in the latter. At this stage, he appears briefly to have entertained the idea of joining the Indian Civil Service. He, however, gave it up, having been influenced by the intensely nationalist outlook prevailing at that time in the country.

### PROFESSIONAL CAREER

Based on Anant Gopal's outstanding academic record, he was offered, soon after obtaining his M.Sc. degree, the post of Demonstrator in Geology in the then Mining and Metallurgy Department of the Banaras Hindu University. This was the beginning of a career of distinction, as a teacher, researcher, explorer, writer and scholar. He was also keenly interested in extra-curricular activities and had considerable histrionic talent; he was closely associated with the Drama Society of the Banaras Hindu University, of which he was also the Secretary. His creative mind manifested itself in several ways. His new year greeting cards depicting sketches on the life, work and aspirations of earth scientists are remembered by all. He was honoured many times by the T. B. Associations of West Bengal and Delhi for helping in their annual T. B. Seal sales campaign.

In 1936, Professor Jhingran decided to seek admission for his doctoral work at the Imperial College of Science and Technology, London. Though he did not get a firm commitment for admission, he took the grave risk of reaching London before the session was to commence. For this he had to arrange personal loans from various sources. However, he could not obtain admission in the Imperial College. Meanwhile, he went to the late Professor Arthur Holmes of Durham University, who advised him to get himself admitted at New Castle-on-Tyne as a Ph.D. student to work under Professor S. I. Tomkeieff.

He paddled a bicycle as a field transport, since there was no transport facility in his research area and enrolled himself as member of Youth Hostel Association and International Cycle Association. After completing his doctoral work, on his way back home in 1938, young Jhingran decided to pedal through Europe. He crossed the North Sea from New Castle-on-Tyne to Oslo in Norway in a steamer and



travelled across Europe to Munich on a bicycle in two and a half months, cycling on an average of 80 miles a day—indeed a feat of determination, stamina and perseverance.

### *At the Geological Survey of India*

On his return from England in 1938, he resumed his position in the Banaras Hindu University. Subsequently in 1939, promoted by an urge for investigating the vast unexplored mineral resources of the country, he joined the Geological Survey of India as an Assistant Geologist, where he served with great ability and dedication for 27 years and occupied various positions and shouldered many responsibilities. He rose to a high position and finally retired in August 1966, on attaining the age of 58 years, as its Director-General.

### *At the Delhi University*

When Professor Jhingran was about to reach the age of superannuation in the Central Government service, the University of Delhi decided to organise a Department of Geology in its Faculty of Science. Dr C. D. Deshmukh, the then Vice-Chancellor of the University, invited him to establish the new Department. Thus, he joined the University as the founder Professor and Head of the Department of Geology on the November 2, 1966. This brought him back into the academic field, which he had given up in the late thirties (1939) when he left the Banaras Hindu University to join the Geological Survey of India. Although, while in the Geological Survey of India, he had delivered a series of lectures on Geology for about a month in the Forest College, Dehradun, in 1942, and occasionally taught, as a part-time, teacher in 1947–48, at the Presidency College, Calcutta, his return to teaching on a full-time academic assignment at the Delhi University was a matter of great personal satisfaction to him.

The Department of Geology at the University of Delhi, officially started functioning from the November 2, 1966, the date on which Professor Jhingran joined the University. However, it required a great deal of preparation and planning. Space had to be found for setting up the laboratories and classrooms, equipment had to be procured, staff had to be appointed and syllabi formulated. By dint of imaginative but realistic planning, Professor Jhingran assisted by V. K. Verma (the senior author), then the only other member of the teaching staff and his immediate successor, carried out the initial preparations within a period of 8 1/2 months. It enabled the University to admit the first batch of students for the three year B.Sc. Honours course in July 1967. The Department, under the stewardship of Professor Jhingran, grew within a period of seven years to notable proportions and became an established centre for teaching and research in the country. Professor Jhingran, retired from active University service on August 12, 1973, the second retirement of his life. As Professor F. J. Pettijohn (John Hopkins University, U.S.A.) put it : *“I salute you on the occasion of your retirement—a second retirement—this one from academic life, the first one from the Government service. May you have many*



more retirements.” Even after his retirement, he continued his association with the Department of Geology and was later appointed as the Honorary Professor in Geology by the University of Delhi.

### *At the Wadia Institute of Himalayan Geology*

Along with the creation and development of the new teaching and research Department of Geology in the University of Delhi, Professor Jhingran also fostered another new institution devoted to research in Himalayan Geology—the Wadia Institute of Himalayan Geology—initiated by the late Dr D. N. Wadia with support from the Ministry of Education, Government of India. Professor Jhingran and a few others established the Institute. Utilising some rooms lent by the University of Delhi, the Institute started functioning in August 1968. Dr Wadia, however, died soon after and Professor Jhingran filled in the gap by acceding to the persuasion of the Government to work as its Honorary Director, in addition to being Head of the Department of Geology of the University of Delhi. Later, with the approval of the Government, he renamed the Institute as Wadia Institute of Himalayan Geology, after the late Dr D. N. Wadia. About a year later, i.e., after the death of Dr M. S. Krishnan who was the President of the Institute, Professor Jhingran became the President of the Institute.

The Institute organised seminars and symposia devoted to work on Himalayan Geology by Indian and foreign scientists. Gifted as Professor Jhingran was in organizational functioning, he raised the level of these seminars to international standards. The deliberations attracted Himalayan geologists in India and abroad. Despite initial difficulties, he was able to establish a tradition that has helped foster the cause of Himalayan Geology. He personally edited the proceedings of the first seven seminars and published them as the *Himalayan Geology*, volumes 1 to 7. He, however, was not able to see the press copy of the volume 7, which the Institute dedicated to his memory after his demise.

On the advice of Professor Jhingran, the Government appointed a full time Director of the Institute in early 1976, and he relinquished charge as Honorary Director, but continued to be the President of the society until July, 1977. The Wadia Institute of Himalayan Geology and the Department of Geology, University of Delhi, thus remain monuments to the cause of teaching and research in Geology in the country.

## GEOLOGICAL LITERATURE IN HINDI

Professor Jhingran had an intense love for Hindi, his mother tongue. He worked unsparingly for the development of Geological literature in Hindi. As member, and later as convener of the Committee for Geology and Geography under the Scientific and Technical Terminology Commission, he did much sustained work and helped in evolving a scientific terminology in Hindi, which has been accepted by many scientists. He also started a Hindi section in *Indian Minerals*, a publication of the Geological Survey of India, and was its Editor for several years. He translated



a well-known English text book on Geology to Hindi, which was later published by Madhya Pradesh Hindi Grantha Academy.

In 1968, he initiated and helped to develop an all-India body, the *Bhuvigyan Parishad*, with the objective of generating geological literature in Hindi. The Parishad published a quarterly journal devoted to Geology and allied sciences. The progress in this direction was entirely due to Professor Jhingran's untiring personal efforts. In early 1977, he was honoured by Delhi Hindi Sahitya Sammelan for his interest in the development of scientific Literature in Hindi.

## FAMILY

In 1931, Anant Gopal married Sharda Devi, daughter of a leading Ayurvedic practitioner of Delhi at that time. They had a happy family life and were blessed with two daughters and four sons. The eldest daughter, Indira, is married to Shri L. R. Sharma, who is now working as Vice-President (operations) in Indag Rubber Ltd. Bhiwadi, Rajasthan, since deceased Parwanu (H. P.). The second daughter, Aruna (the fifth child), is married to Shri J. S. Jaitly, an engineer in U.P. Instruments Ltd. Lucknow. His first son, Anand (the second child), is a textile engineer and is presently working in Aditya Mills in Kishangarh. The second son, Anadi, is a mechanical engineer and is working in Bharat Refractories Plant at Ramgarh in Bihar. The third son, Vinaya (the junior author) followed the footsteps of his father and took up Geology as his career. He is today on the faculty of the University of Delhi. His fourth son, Achyut, the youngest child, did a course in Automobile Engineering and is now running his own business. Professor Jhingran had a closely knit family. He was a benevolent father and was greatly loved and respected by his children and grand children. The father and children used to discuss many a matter like friends. Whether they agreed or differed, he had forged a unique sense of understanding in the entire family. Professor Jhingran possessed a forward, dynamic and optimistic outlook. He encouraged his children, his younger brother, and dependent widowed sisters to attain professional, intellectual and academic heights according to their respective aptitudes and abilities. He gave them a free hand in the choice of their careers. This was responsible for the wide variety of avocations that his family members chose for themselves.

## SCIENTIFIC WORK

Professor Jhingran had the rare gift of blending and synthesising into a composite work in the professional career experiences of teaching, research and field work. He dominated the scene of Indian Geology for almost five decades, a distinction available to few.

His collaboration with the late Professor K. K. Mathur in the discovery of a new variety of amphibole—Girnarite, from Mount Girnar in Kathiawar is well known.

As a research student in the United Kingdom, he made a very intensive study of the Cheviot Granite, North Cumberland, which were penetrating and thorough,



and whose results were new and revealing. When he was awarded the Ph.D. degree, his Professor commended his achievements and observed "*although this area had recently been mapped by the Geological Survey, Dr Jhingran was able to add very materially to our previous knowledge.*"

In the Geological Survey of India, Dr Jhingran carried out systematic mapping of extensive areas in parts of Orissa and Madhya Pradesh, and investigated several metallic and non-metallic deposits in the country as also in Bhutan and Nepal. He directed teams of the Geological Survey of India to locate additional resources of flux-grade limestone for the steel industry. He also participated in an expedition to the Spiti Valley with three Danish Geologists from June to August, 1950.

His work on Bundelkhand granite-gneiss is an example of thoroughness and attention to detail. While on this problem, he located the now famous pipe-rock, which later proved to bear diamonds.

In 1959, Professor Jhingran was assigned to organize the Base Metal Unit in the Geological Survey of India, and to identify and develop new resources of copper, lead and zinc, in which the country was deficient. The pains he took in this connection bore fruitful results in the location of large resources of copper ore in Roam-Siddheswar block in the Singhbhum Copper Belt in Bihar, the Agnigundala block in Andhra Pradesh; Mamandur field in Tamil Nadu and Kalyadi in Mysore; of zinc ore in Rajpur-Dariba Block in Rajasthan. He also successfully guided the exploration for phosphorite in Rajasthan and Uttar Pradesh and for pyrite, in Rajasthan and in Bihar.

Professor Jhingran headed, in his time, the project of the preparation of modern geological maps entrusted to the Geological Survey of India by the Economic Commission for Asia and Far East, as part of its policy for assisting the development of the constituent countries including Japan, China, Phillipines, Indonesia, Ceylon, Burma, Pakistan etc. The other maps brought out under this series related to mineral distribution, and the project was handled in joint collaboration with Japan. Professor Jhingran also guided the revision of the 1932 edition of the Geological Map of India. He also supervised several students for their doctoral theses on various aspects of Himalayan Geology.

## DISTINCTIONS

Distinctions came to Professor Jhingran throughout his life. The University of Delhi, Geology Department, celebrated his sixtieth birthday in 1968 and sixtyfifth birthday in 1973 with great enthusiasm. On these occasions, tributes were paid to him for his achievements in Geology. Sir Kingsley Dunham (Director, Institute of Geological Sciences, London) wrote : "*Your services to Geology, both as a member and eventually as Director-General of the Geological Survey, and in academic life have been considerable. I am sure that you will be remembered particularly for your work in the Himalayas.*" Professor W. C. Krumbein and Professor Michael F. Dacey (Northwestern University, Evanston, USA) said "*..thus in your long and fruitful career you have accomplished the work of two lifetimes. We have no doubt*



that your present retirement from the University will be merely the beginning of a third equally successful career." Dr B. Shamakin (Institute of Geology, Moscow) wrote : "My contacts and conversations with you in the time of my being in India, your kind letters to me after—will be the brightest parts of my Indian impressions." Professor E. K. Walton (University of St. Andrews, Scotland) said : "I wish to pay tributes to him as an outstanding geologist who has made significant contributions in many areas and topics in Geology. . . . I would like to greet him as a fellow graduate of the University of Durham and share with him kind memories of Professor S. I. Tomkeieff who guided each of us in our early research work."

His name appeared in "Famous India—Nation's Who's who (1975)", "Reference Asia" Volume I (1975), and also in the volume IV of the "Men of Achievement" (1977) of the International Biographical Centre, Cambridge.

He led and participated in Indian delegations to many international meetings : Soviet-India Symposium, Tbilisi, USSR (1975); International Geological Congress, Australia (1976); Economic Commission for Asia and Far East in Japan (1956).

He was elected President of the Geology and Geography Section of the Indian Science Congress (1958). He was also invited to deliver special lectures by various scientific organisations, viz., Birbal Sahni Institute of Palaeobotany for the *Seward Memorial Lecture* (1967), Oil and Natural Gas Commission for *A. M. N. Ghosh Memorial Lecture* (1974). He was active in the fields of education and science in the country and guided the activities of many scientific bodies and Universities in various capacities.

## ASSOCIATION WITH LEARNED BODIES AND ACADEMIES

Professor Jhingran's work brought for him many distinctions, earning for him recognition in various ways. Some of these are mentioned below :—

1. Elected Fellow of the National Academy of Sciences of India, Allahabad, 1952.
2. Elected Fellow of the National Institute of Sciences of India (Now Indian National Science Academy), 1954; Member of the Council 1966–68, Foreign Secretary, 1968–72.
3. President, Geology and Geography Section, Indian Science Congress, 1958.
4. President, Biological Science Section of the National Academy of Sciences, 1962.
5. President, Mining, Geological and Metallurgical Institute of India, 1964.
6. President, Association of Indian Geohydrologists, 1966.
7. Editor, *Transactions of Mining, Geological and Metallurgical Institute of India*, for several years.
8. Editor, Hindi Section of *Indian Minerals*, GSI, for several years.
9. Convener, Vigyan Vikas Samiti, New Delhi.
10. Organising Secretary, International Geographical Congress, New Delhi, 1967.
11. Chairman, Geology Committee of India for International Union of Geological Sciences, 1970–75.





12. President, Indian Geologists Association, 1970-72.
13. President, Geochemical Society of India, 1971-72.
14. President, Bhuvigyan Parishad, 1968-till death.
15. President, Indian Geological Congress, 1975-77.
16. President, Indian Association of Sedimentologists, 1976-77.
17. President, Wadia Institute of Himalayan Geology, 1970-77.
18. Editor, *Himalayan Geology*, 1971-77.
19. Member, Steering Committee, International Seminar on Himalayan Geology, 1976.

### LAST DAYS

On October 4, 1977, Professor Anant Gopal Jhingran handed over a manuscript to his stenographer, checked the diagrams with the draughtsman, and slowly rose from his chair. This was the text of his lecture he would deliver 10 days later under the auspices of the Indian National Science Academy. The academy would present him its coveted award—the first *D. N. Wadia Medal* (1977) for his contributions to Earth Sciences. He stepped out of his Delhi University Office in pain. He had a sore ankle which would be operated the next day.

After the operation, his doctor put the leg in plaster and advised him complete bed rest. The immobility prevented him physically from delivering his lecture on schedule at the Indian National Science Academy. It was a serious psychological setback to him. While confined to the bed, he suffered a stroke of myocardial infarction and had to be moved to the G. B. Pant Hospital, New Delhi. The end came on December 11, 1977, at about 1215 hrs following cardiac arrest.

V. K. VERMA

VINAYA JHINGRAN

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