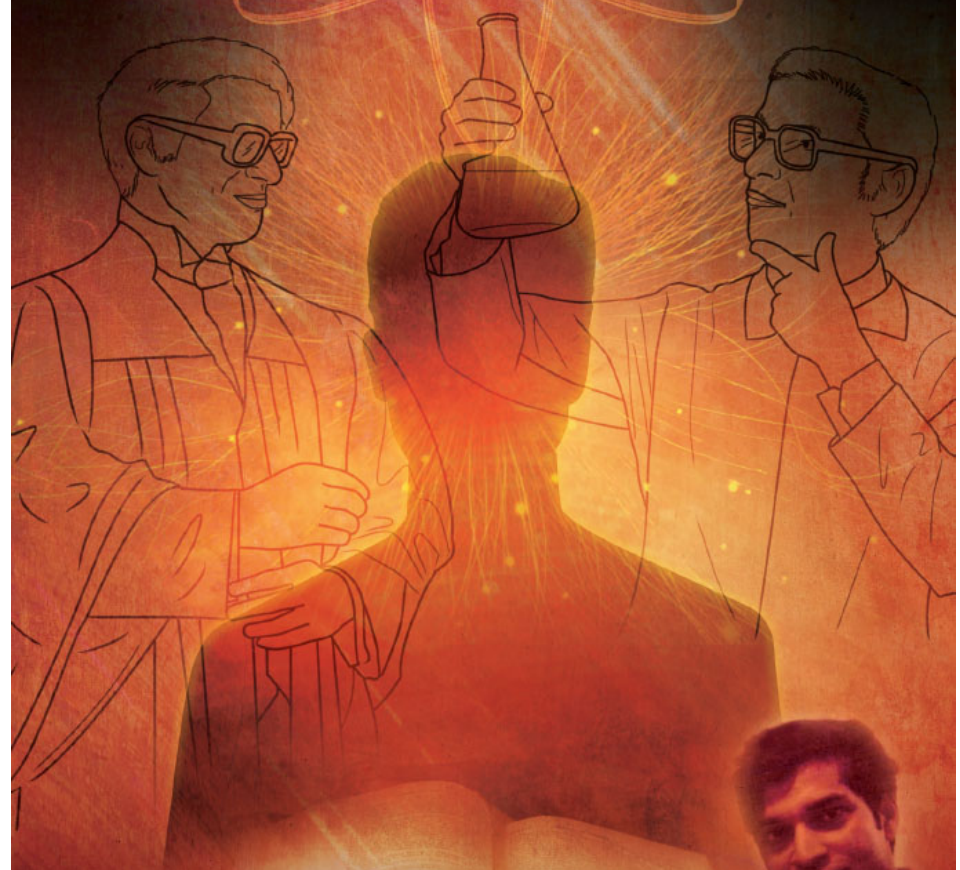


# MEMOIRS OF A GYPSY ACADEMIC



*Dr. B. B. Singh*



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# **BEFORE MEMORY FADES – I**

## **Journey from Physics to Biology**

During my IPR lectures to University teaching staff and research scholars I have been invariably asked why and how I changed from Physics to Biology. My short answer to a long story has always been “I was crazy”.

I now narrate the story to my innumerable friends before dementia sets-in.

Originally I was very keen to do research in theoretical physics. I was a not a bad student—having secured 1<sup>st</sup> Class with second rank in B.Sc. (Physics, Mathematics and Mathematical Statistics) and a 1<sup>st</sup> Class with 1<sup>st</sup> rank in M.Sc. (Physics with Electronics specialization). Both of these were earned at the University of Lucknow. There I was very much influenced by my theoretical physics teacher Prof. Vachaspati who was working in the field of non-linear optics. Later he became and retired as the Vice-Chancellor of Allahabad University. I was to work with him after M.Sc. but I got selected in the Atomic Energy Establishment Trombay (AEET) Training School. Prof. Vachaspati advised me to join AEET and work with Prof. B.M. Udgaonkar (a distinguished theoretical physicist of the time) working at Tata Institute of Fundamental

Research (TIFR) and for which he had already sent a recommendatory letter to him.

Before reporting to the Training School, I met Prof. Udgaonkar. He advised me to join the Training School and then after that opt for research with him. He had convinced me about the better career prospects ahead that way. But he was also right away prepared to accept me as a Research Assistant at TIFR.

I met Dr. K.K. Damodaran who was then the Head of the Training School and enquired how can I do research in theoretical physics after completion of the training period. He explained that during their year-long training and performance only the first three in the merit will be given their choice and remaining students shall be allotted to various programmes as per requirements of the individual divisions of the institute.

My love for theoretical physics made me work very hard in the Training School. For the first two semesters I was holding the first rank but in the final I missed it by 2 marks. I was however not disappointed since even with the second rank I was entitled to get my choice of theoretical physics. Even otherwise the first rank holder Tapan Bhattacharya from IIT Kharagpur was keen on electronics and that made it sure that I would get my choice.

The final allotment Committee met and I was handed over a slip asking me to report to Prof. B. M. Udgaonkar at TIFR. I was disappointed and expressed my desire to the Committee work only in AEET and not in TIFR. The Committee told me that the theoretical physics activity was shifted from AEET to TIFR with Prof. Udgaonkar and Prof L.S. Kothari and I could work with either of them. True, there was then no separate theoretical physics Division in AEET in 1960.

Since I insisted on my choice of AEET and theoretical physics, the Committee was helpless. I was offered Nuclear Physics which I declined. The Committee asked my second choice and in utter disgust I said “BIOLOGY”. The Committee was shocked hearing my choice from a highly intellect based theoretical physics to a descriptive subject of biology which then it was just a mix of botany and zoology. The helical structure of DNA was proposed only a few years earlier.

I think it was Dr. Raja Ramanna who was serving as the Chairman of the Committee. He said “You will have to answer two questions and then we will decide”.

“Why do you refuse to work in TIFR?”

True, as I have mentioned above, it was my attempt and desire to work with Prof. Udgaonkar but when offered, I was adamantly refusing to accept it. I narrated my reason as follows:

“Sir, I come from a small town. When I applied for this job, I had to get some of my documents attested by a Gazetted Officer. Sir, the only authority in the town with attestation powers was the District Collector and I had to stand in the hot sun in “Q” for over an hour to get his signature. Sir, I want to be a Gazetted Officer which I will be in AEET but won’t be if I joined TIFR.”

I could see constipated smiles on the face of Committee members.

Dr. Ramanna asked “Why Biology when your 1<sup>st</sup> choice is theoretical physics?”

My reply was “Sir, I love theoretical physics and for the whole year I have worked very hard for it. The one year training period was torturous. Every Saturday

was an examination day and all such examinations were considered “FINAL”. Sir, I have worked very hard and have not seen even a single movie in the Cinema Hall. (That was the only entertainment in those days) But Sir, when the Biology teacher came to give 6 lectures he first announced that there would not be any examination in this subject. Sir, I was relaxed and enjoyed the subject. Now when I have a choice, I want to work in this subject.”

The Committee now had an uninhibited laugh and I was handed over the slip to report to Biology Division of AEET.

Next morning I was on the 5<sup>th</sup> Floor of Richardson & Cruddas Building at Byculla Bombay (now named Mumbai) where the office of the Biology Division was situated. The scientist Dr. K.C. Bora who had taken the lectures in the Training School was abroad. Hence I was directed to meet the Head of the Division Dr. A.R. Gopal-Ayengar. He seems to have been remote handling the researches of his Division from 10 kms away sitting in the Indian Cancer Research Centre (ICRC) building annexed to the Tata Memorial Hospital at Parel.

I was taken into his room by his Secretary. I was very impressed. He was a man in his early fifties, handsome and fair skinned, heavy eye-brows with traces of grey and a partly balding head. He was wearing a spotless white lab-apron with his name embroidered on its left pocket as “Dr. A.R. Gopal-Ayengar”. He was a chain-smoker and was holding his smoking pipe between his lips. He looked at me and said with askance.

“Yes, ??????”

I introduced myself as a physics trainee coming from the Training School and told him that I was allotted to his Division.

He said: “I have not asked for any person from the Training School. There is no vacancy”.

I was bold. I informed him that being a merit scholar I have the privilege to work in any subject of my choice in AEET and I have opted for Biology.

He looked a little amazed with my confidence and asked me to sit down.



*A.R. Gopal-Ayengar*

Dr. A.R. Gopal-Ayengar  
(01 Jan. 1909–09 Sept. 1992)

He said: “OK, tell me what is your background in biology?”

Without any fear or hesitation I replied “Sir, in my 10<sup>th</sup> Standard in the School, I had a subject GENERAL SCIENCE and also a paper in the final examination

where biology formed a part of it with physics and chemistry.”

He was visibly shaken and his smoking pipe almost falling down from his mouth. Adjusting the pipe at its original place and re-composing himself he had said:

“With this background in the subject how do you imagine to do research?”

My reply was simple and straight. I said:

“Sir, give me a chance for a year and if I fail, I have the privilege to go back to nuclear physics”.

He was amused and said: “OK, but young man! You are digging your own grave.”

He signed the papers and I came back to Byculla laboratories where I was allotted a sitting place. I was the only trainee physicist there. The other scientists were botanists and biochemists and a few organic chemists. For about a year, they did not know what to do with me and I did not know what to do in the grave that I had dug for myself.

With my hard work and a bit of luck during the course of time the same man who warned me that I was digging my grave became my god-father. I never went back to physics and never repented about my crazy choice that I had made 38 year before my retirement as Head of Radiation Biology & Biochemistry Divisions of Bhabha Atomic Research Center that was earlier known as AEET.

*If you want to shine like a sun, first burn like the sun.*

**–A. P. J. Abdul Kalam**

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