O. Siddiqi: Acceptance Speech

Bombay Hospital

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Your Excellency, Shri S.P. Jain, ~~Justice Bhagwati~~, members of the Jury, Ladies and gentlemen.

I would like to express my gratitude to the Trustees of the R.D. Birla Samarak Kosh for giving me the Rameshwardas Birla National Award. Despite the time honoured injunction that "work is its own reward", scientists, just as writers and artists, derive a great deal of pleasure and satisfaction from knowing that others think well of their work. The pleasure is doubly enhanced when this appreciation is accompanied by such a handsome gift as I have just received.

I must first acknowledge my debts. In the first place I am indebted to several of my teachers in school and college who drew me to science. I was attracted to biology mainly because of my uncle, Mr. Akhtar Hasan who was a botanist. Later when I took up research as a profession, I was fortunate to join the Department of Genetics at Glasgow to work with Prof. G. Pontecorvo. My years in Glasgow introduced me to the intellectual revolution in Genetics that took place in the fifties and brought me, scientifically speaking, into an entirely new world. It was through Pontecorvo that I made the acquaitence of Alan Garen, Maurice Fox and Seymour Benzer with whom I worked closely in later years. These men helped to shape my taste and judgement for what it is worth. From Pontecorvo and Benzer I learnt, not just how to do science, but something of the value of pure science, and what science is about.

Secondly I am indebted to my students and associates. In experimental biology, one greatly depends on one's students. As one grows old, it is, increasingly, they who do the work. One of the charming features of our profession is the fact that it saves one from ageing too fast. Our students keep us thinking and learning. I have been extraordinarily fortunate in having worked with a number of highly talented and dedicated young men and women. Some of them are in this room. I have learnt more from them than I have taught them.

I was fortunate that, at a fairly early stage in my career, Dr. Homi Bhabha gave me a position at the Tata Institute of Fundamental Research. At the Tata Institute I have enjoyed a great deal of support, freedom and latitude to pursue my ideas.

It has been said that a writer writes one book and keeps writing it again and again. In the same way a scientist often discovers a problem and keeps working at it, on and on. I entered biology at a time when the molecular nature of the gene and the genetic code came to be unravelled. I have since been fascinated by the central part genes play in the development and behaviour of living creatures. ~~I and~~ My colleagues and I are interested in genes that control the brains of animals. We work with the fruitfly Drosophila specially on the genetics and molecular biology of its chemical senses, smel and taste. This field of research is called neurogenetics.

I am often asked what is the use of this kind of work - how does it benefit ~~the~~ humankind. The sense of smell and taste in ~~the~~

fruit flies is not very different from our own. Even more remarkably, the machinery of the brain that detects and analyses the chemical signals, appears to be fundamentally similar in humans and insects. At present we do not fully understand how this machinery works. I believe that in understanding the chemical senses of flies, we will come closer to understanding ourselves.

But will this be of any practical use? I think it will. The utility of scientific knowledge often lies not in straight and predictable paths; it comes in surprising and unsuspected ways. I might give you an example from the kind of research we are doing. In humans there are many congenital deficiencies of the chemical senses. The causes of many of these are poorly understood. The genetic syndrome pseudohypoparathyroidism (PHP) is accompanied by a loss of odour perception. It has recently been found that ~~the~~ patients suffering from PHP lack a protein called G. protein which is involved in the regulation of several growth hormones. The same protein seems to be involved in chemosensorry transduction. The study of PHP patients has provided an insight into the molecular mechanism of odour perception in insects. Likewise, I believe, a study of the neurological mutants of Drosophila might give us new insights into human neurological and metabolic disorders. All sound knowledge ultimately finds useful practical applications and the field of neurogenetics is no exception to this rule.

I am grateful to Rameshwardas Birla Samarak Kosh for considering me worthy of the Birla National Award. I thank them once again.