

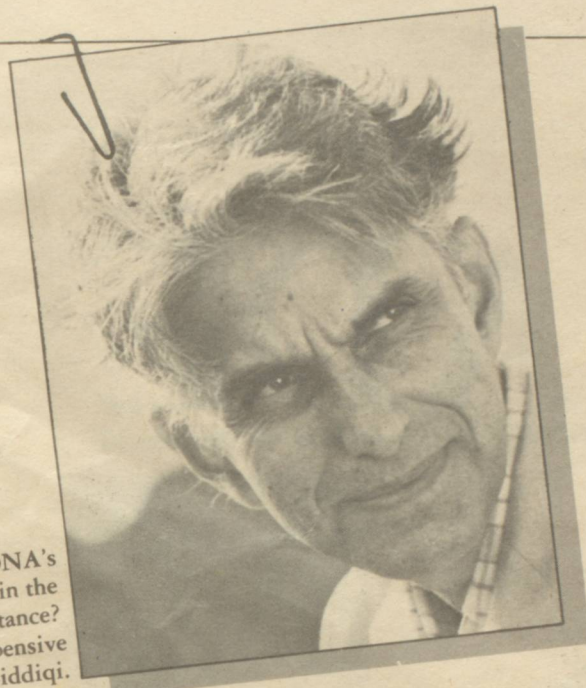
Dear Prof. Siddiqi,

This for you Sir
in case if you have not
seen it.

It has appeared in
"Society" July 1988.

Regards,

Moksha



Are the DNA's
dancing in the
distance?
A pensive
Prof Siddiqi.

India's Real Gene-us Discovered

He's received so many awards he doesn't even remember. Actually, Prof. Obaid Siddiqi has better things to do, like deciding that India could do with a bit of genius even though he was offered a post at the MIT. He even practices a little bit of socialism, rather unusual for a scientist. But mostly, Prof Siddiqi is busy promoting the tradition of scientific temper which our country so desperately needs.

He is tall and lean with a craggy, distinguished look. A gentle stoop and abundant silvering hair only add to the muted personality of the 56-year-old biologist. Padma Bhushan winner (1984) Prof. Obaid Siddiqi is the founder-head of the Department of Microbiology at the Tata Institute of Fundamental Research (TIFR). A fellow of the Royal Society, London, he was singled out for his early promise by Dr Zakir Hussain and later by many of the world's top-notch scientists and science-associated bodies. Yet when asked if he had received any distinction in his college days, he laughs softly, "No, I did not distinguish myself in anyway." He clearly believes that. Which is not to say that he

underestimates himself. But nor does he overestimate. Superlatives just don't sit well with him. Perhaps that is what gives him balance in his search for the whys and hows of all things living. Incidentally, he has forgotten the names and years of some of the awards he has received even though he respects the thought behind them. One wonders what wife, Prof. Asiya Siddiqi, the historian, has to say about that!

Prof. Siddiqi is one of the early discoverers of suppressors of 'nonsense mutations', which led to the elucidation of stop signals in the genetic code. Colleagues at TIFR, and around India respect him and refer to him as a leading intellectual of our times. Not surprisingly, he is the current president of the Indian Academy of

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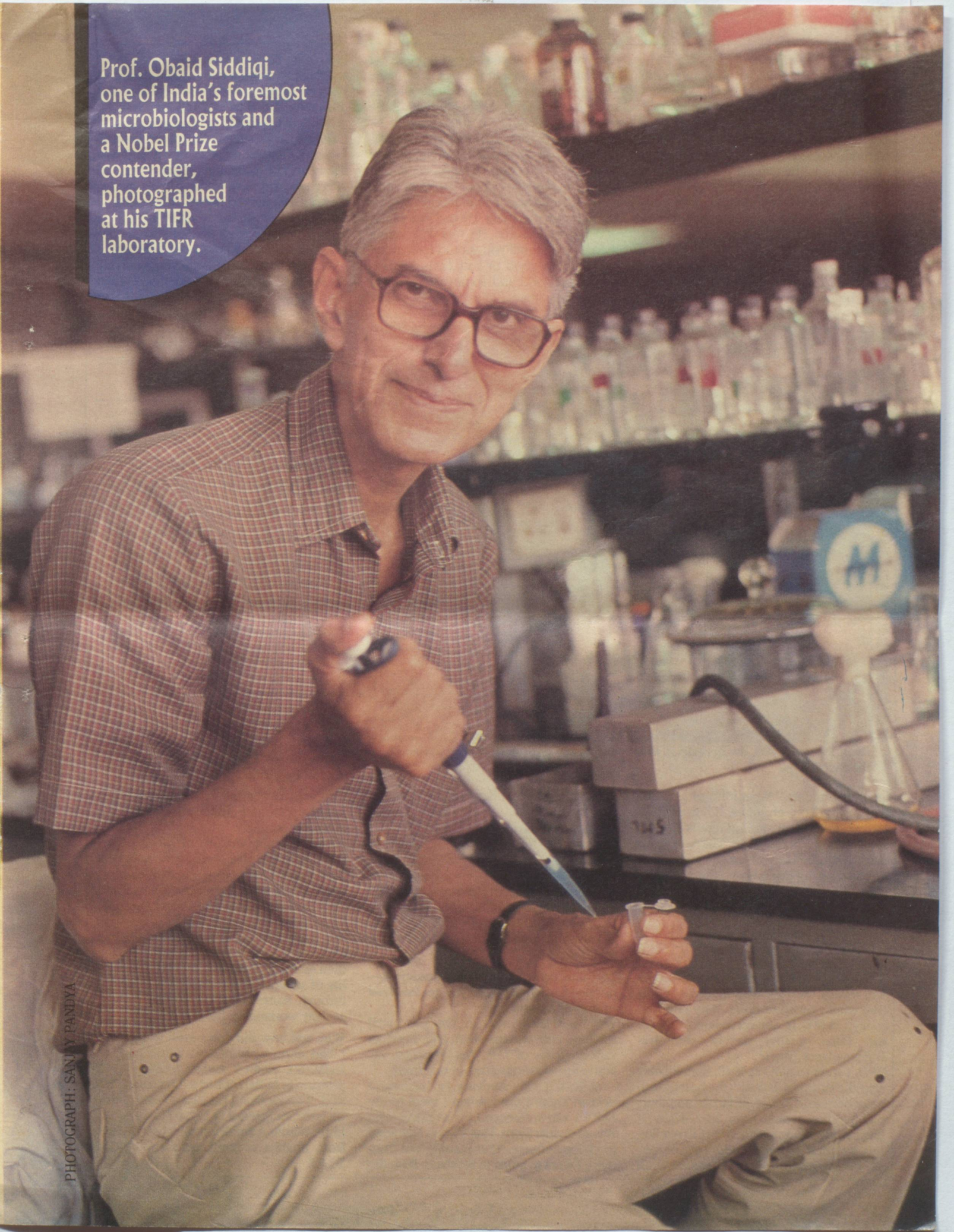
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of the International Scene.

Prof. Obaid Siddiqi, one of India's foremost microbiologists and a Nobel Prize contender, photographed at his TIFR laboratory.

PHOTOGRAPH: SANJAY PANDYA



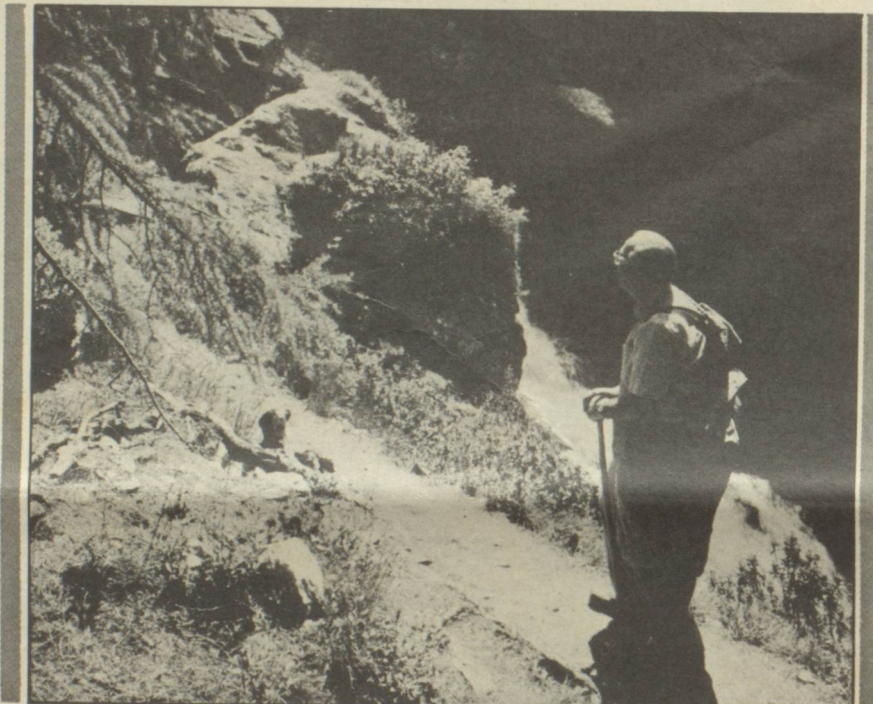
Sciences.

Predictably, Prof. Siddiqi shares his room only with large cupboards full of books. A fan as large as his palm keeps him cool. (Though keeping his cool certainly does not seem to be a problem for him). While he reminisces his story, with eyes focussed to one side, he occasionally allows a perfect smile for the memories. Then, if the question strikes him as important he pulls himself up and zeroes in spiritedly. If you contradict him, he considers it in his unusually corrigible way.

Talking about himself is certainly not in Prof. Siddiqi's genes. Once the interview is over he almost 'jumps' on the photo-

times when a lot was happening there. I was quite involved in politics. Like many young people I had leftist inclinations. Yes, I was a communist. I thought that all the world's evils could be taken care of by socialism. We saw economic problems as the root of all other problems. But as time passes your thinking changes. Several of today's well-known people were at AMU then. Who all can I remember? Yes, Dr Nurul Hasan was there. He had just joined as a history lecturer. He was very young then. I don't think you should look at the university as good or bad. Some departments are good and some bad, in most universities. It was always like that. For

help of Dr. Zakir Hussain, I received a small scholarship, from a private foundation in Bhopal. Together with what I got from the university the total amount was £350 a year. I had heard of a famous geneticist in Glasgow, an Italian named Pontecorvo and I went to Glasgow to work with him. It was a very good experience. Students from all over the world were working in his laboratory. I also enjoyed myself. I travelled to Europe every summer. After three and a half years of work there, I started considering whether to return to a lecturer's job in AMU which had been kept open for me. Around that time I also received offers from other universities in the U.S., in particular M.I.T., to go and work there because the laboratory where I had been was a well known one. I chose to go to the U.S. for post doctoral research where



Prof. Ponte Corvo, the geneticist who trained Prof Siddiqi, photographed in the Swiss Alps.

grapher's camera. "What kind of lens are you using?" he enquires. Photography, Indian classical music, and tennis are just some of his other interests. That is why he considers time (other than research time) say, time for entertainment, equally important.

INTERVIEW:

You are a product of the Aligarh Muslim University (AMU). Tell us what it was like when you went there. Why is it that today's AMU is not considered to have the same quality as in the pre-Independence times?

Well, I went to AMU in 1948, immediately after the Partition. It wasn't the best time to enter because many of the faculty members had left the country. Then, later, when Dr Zakir Hussain became the Vice Chancellor, he brought in new staff and got the university back to its earlier level. Those were still

instance, the history department of AMU is still good.

Are you still a socialist?

I'd have to highly qualify my answer, certainly not the kind of socialist that I was when I was twenty. But I still believe that there are problems which can be solved by socialism rather than by free enterprise solutions. But then again free enterprise can also take care of some problems which socialism can't.

Did you come from a very academic-minded family? How did you get involved in microbiology?

Well, my father was in the provincial services and we travelled and lived in various parts of U.P. Yes, you can say academics was important in our family.

At first, I was studying to become a doctor. Then, I think when I went to the AMU, I was influenced by an uncle who was a botanist there. That's when I decided to change course. After passing out from there I went to study in Scotland. With the

"I don't think of brain drain as such a big problem. For the number of good people who leave, an equal number (perhaps more) of good people stay here. In fact, some who stay back are even better. The problem is that those who stay often get lost."

I worked for a year and a half. After that I went to Cambridge for a while before returning to India.

You were in the U.S. in the sixties, what was the scientific community like in the U.S. at that time?

Those were very vibrant times for biology, DNA had been discovered and a lot was happening. I came to know many well-known biologists, including Watson and Crick and also many molecular biologists. Then there was the physicist Szilard, who was very interested in biology. Szilard along with Einstein, had first written to the then American President about the possibility of an atom bomb. When I met Szilard through some common friends he was actively working against the cold war.

Why and how did you return to India?

I had always planned to come back to India. So, when I started looking for a position in India, I talked to Leo Szilard. He said, 'I know Homi Bhabha, I believe that he is the Mr.Science of India. I can write to him'. Within a week's time I had a letter from Bhabha offering me a position at T.I.F.R.

Were people here interested in genes then?

People had known about the existence of genes for a long time. The idea had been put forth by Mendel a hundred years ago. But scientific work on the nature of gene started comparatively recently. When I came to India, molecular biology and genetics were fairly unexplored subjects. People were just beginning to get interested. At about the same time Prof. P.C. Mahalanobis also offered me a job at the Indian Statistical Institute. He too wanted me to start a department of molecular biology. I chose to come to T.I.F.R. Bhabha left us in T.I.F.R. to pursue our work just as we

For what work did you first receive recognition? By whom? You are a member of several scientific advisory bodies, what's been your contribution to them? Well, on looking back I should say that I am rather pleased, that perhaps after Bhabha, Sir C.V. Raman was the first to recognise me. Soon after coming back I received a letter from him saying that I had been elected to the Indian Academy of Sciences of which he was the President. Bhabha must have told him because he had no reason to know me or my work. This was much before I received any other recognition. Much later were other signs of recognition. As far as science goes, before coming back to India

problem?

I don't think of brain drain as such a big problem. For the number of good people who leave, an equal number (perhaps more) of good people stay here. In fact, some who stay back are even better. The problem is that those who stay often get lost. They go unnoticed. There is a real difference between conditions here and conditions elsewhere. I don't mean so much in terms of living conditions. When you compare a scientist's living conditions here to that of a business man's, the scientist's is far poorer. The same is true of scientists in Europe or America though not the Soviet Union. But a businessman's lifestyle is different. So in that sense we are okay here. But the working environment here could be much better. There is red tape, and lack of scientific atmosphere and support. Above all there are not enough good places to work. Of course, there are



Prof Siddiqi's family. Historian wife Asiya with three of their four children.

liked. I recruited a few young colleagues interested in the area and gave them enough leeway to work on their own interests. So we came to have a Molecular Biology Unit in T.I.F.R. which until then was a physics institute.

How would today's scientists compare to the scientists you knew then. Say for instance Bhabha, Raman, Saha and Bose? Today also there are many good scientists but not of the same calibre. These men were strong, single-minded, and unbendable by politics or by any other kinds of pressures. Dr. Homi Bhabha as I remember him was a very clear-sighted and dynamic person. In his earlier years he had done some remarkable scientific work. Later he started the Atomic Energy Commission and was wholly involved in managing it. He was very strong, self-willed and disciplined. C.V. Raman was definitely the most impressive scientist I met and I don't mean just scientifically. He was totally independent, uncompromising and single-minded.

I had done some work on the genetic codes which was considered interesting. Yes, I have been a member of the Prime Minister's scientific advisory committee. But I don't think I really contributed much by being on such boards. You go, say something and come back. All this eats too much of one's time. It's not that I toe any line or cow down, or do not say what I should say but whether what I say makes any difference is another matter. True, these boards and committees do have their functions—to keep things going, to give an impression of direction—and they are a necessary part of any system.

Is TIFR a showpiece? Or are you actually doing productive work here?

It is also a showpiece. Why not? But a lot of good and hard work goes on here. We have become a very large institute so the quality of work has to be mixed now. However, I can say that there are some very good people in the institute and some, not so good.

Are you concerned about the brain-drain

“Nobody's cloning babies—it's mostly the newspapers which blow it up. There are some social questions that arise but unless there is a totally crazy political system, I don't expect sensible people to do crazy things”

some good institutions here too, like the Indian Institute of Science and Raman Institute, and there are others which are coming up. Then the other problem is that in India we give too much importance to age. Younger people don't get the same kind of independence and recognition that they do in the West. The government alone cannot be blamed. It is the entire society around us that is not aware of the importance of science. And how can they be made aware? If scientists were to go out and speak up, become more political it might be good but then it will take their time and energy away from science.

As a geneticist what do you think of Darwin's theory?

I believe Darwin's theory is the correct theory. It's a corner stone of biology.

How is it connected with Molecular Biology?

Darwin's theory makes certain predictions about how genes change during evolution. Molecular biology allows us to study these changes. There is a new subject called molecular evolution and in a deep way it proves the ideas of Darwin.

Now that it's possible to clone babies etc., what problems do you anticipate?

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Nobody's cloning babies—it's mostly the newspapers which blow it up. More fiction, than reality. Yes, it's become technically possible. The truth is that animal cloning has potential application in animal breeding. There are some social questions that arise but unless there is a totally crazy political system, I don't expect sensible people to do crazy things.

There is a lot of controversy about gene banks, concerning advanced countries surreptitiously taking out plant genes from Third World countries?

There is some concern about the collection of all kinds of available genetic material in a bank. But it is no different from making worldwide collections of plants and animals. In a way it's been happening all

is likely to happen by accident. It is unfortunate that some good things can also be put to bad use. Such dangers can be controlled only by sensible political leaders. But we need an enlightened population to elect an enlightened government.

Do you believe that one race can be superior to another?

There's no genetic superiority. Clearly there are behavioural traits which might be different. Like Africans are very ebullient people, good in sports and in music. The Brahmins—some say—are superior as a group. But they have prized scholarship for generations, so in that way you can say they are intelligent by upbringing. But genetically it is a much harder question. When two races are actually compared there is no

atrocious. In just a few years it seems we are going back to the medieval times. We must stand up against it. It's inherent in our political system to incite one group of people against another and gain support. As a biologist, I might say there is a natural instinct to herd together. It's an easy, vote-getting method, the easiest way to rise in our society and in politics, and incidentally also the easy way to make money. I was delighted to see 'Tamas'. Govind Nihlani had the courage to say this. People don't want to see it. The fact that members of both sects of the concerned audience were upset about it only proves that it was just right.

Tell us about your latest work with fruit-flies (drosophila)?
Well, twelve years ago I decided to change



Prof Siddiqi with Nobel Laureate Watson (second from right) at a Japanese scientific convention. Watson had discovered the DNA.

the time. I don't think it deprives any country of anything. You bring Chinese Pandas and keep them, it doesn't harm anyone. The fear comes from a feeling that advanced countries will use these genes in a way that we cannot. The real answer is to develop our own science, become independent and acquire our own banks. After the Russian revolution in the twenties, geneticist Vavilov, collected cereals from all over the world and he built the largest such collection. We can do that too. That we haven't only shows that we are lagging behind. We may have difficulty in catching up with America in nuclear energy because of the difficulty of enriching Uranium. But in collecting plant genes there is no great problem!

There are theories that AIDS is actually born of biological warfare. Is it true? Doesn't the possibility of that bother you?

I doubt it. I think AIDS was always there but the disease has flared up and spread recently. I don't think that biological warfare

strong evidence to prove one race is superior or inferior. In some such experiments with intelligence tests, the difference is found to be negligible. Each community has a range. Genetic differences might be important in small groups but not between whole races or nations. Your photographer was asking about Aryans and Dravidians. You can't say that Dravidians are less intelligent than Aryans. Ninety percent of the mathematicians in this institute are Tamilians. Now, certainly I am not saying that Tamilians are more intelligent. I think people make conclusions based on a few impressions.

What about the man-woman superiority-inferiority issue?

Even among men and women there is not much difference. There are arguments that females may be stronger because of two 'X' chromosomes. And at birth the survivability of females is better.

What do you have to say about the rising fundamentalism around us?

What is there to say? I don't like it. It's

“I think AIDS was always there but the disease has flared up and spread. I don't think that biological warfare is likely to happen by accident. Such dangers can be controlled only by sensible political leaders. But we need an enlightened population to elect an enlightened government.”

my interest from Molecular Biology to Neuro-genetics. This subject developed after some people began to see that you can use molecular biology to see how brain works. I work with fruit-flies, because a fruit-fly's genetics is very well-known. Geneticist Morgan started working with fruit flies sixty years ago. First, we study a part of a fly's behaviour that is based on taste and smell. Then we produce mutant flies which have the ability to taste and others with the ability to smell certain chemicals. After this we try and find out what genes are affected, what the function of those genes must have been and their relationship with the brain.

How will all this help?

I am trying to understand gene functions. One cannot always say how it will help. Usually knowledge helps. Genetic engineering has helped in curing diseases. Molecular Biology has helped to synthesize hormones used for cures. Now, don't ask me how this will be used but if what we find is true it will help.

Vibha Vasi



The Witch Who Turned Human

There is no mumbo-jumbo about her, just plain ole witching. She takes herself as a witch very seriously and has enough occult scientific facts in her 'witchy' brain to convince you that witch-craft is no hocus-pocus nonsense. She could have swept the world under her broom, but she prefers to help clean up your troubles. The perfect friendly neighbourhood housewife so far, Ipsita Chakravarti is actually India's Super Witch who has finally come out of her hiding.

She's a witch. A bewitching witch. With the broom nowhere in sight. You wouldn't tell your three-year-old scary stories about her, Ipsita auntie, to put him to sleep. He would probably laugh at you. Ipsita (Auntie) Chakravarti is hardly the kind who has a visage to put terror into your heart. Why, she looks just like your friendly neighbourhood Mrs So and So who could just as well be a typist in a decent company. But, Ipsita Chakravarti, make no mistake, is a witch. A thorough witch, with enough witchcraft in her to douse the flames under the boiling cauldron of Macbeth's famous three witches.

A calm, endearing housewife living in a posh colony in Central Calcutta, Ipsita Chakravarti would have continued her mumbo-jumbo (effective stuff of course) in her typical low-key fashion, had not Jyoti Basu, Bengal's inveterate CM made some

disparaging remarks about witches in general. Actually, what he had said was that he liked the idea of a lot of witches being killed in a remote village of Bengal.

The broom bristled, and Ipsita Roy Chakravarti took off. "It has been a stigma down the years," she fumes calmly; "witches mean ugly women with their black magic, waving wands and meowing black cats behind them. This misconception has been carried down the years through old literature and folklore. But that's not right. I am a witch, and I used my talent in witchcraft towards the benefit of mankind." Her shimmering black silk glowed in the glitter of her gold adorning her bewitching image to perfection.

The ilk of Ms Ipsita Chakravarti consists in a society with its headquarters at Montreal. "We've got only 75 members scattered all over the world. Our Society has main-

tained a very low profile down the years, and that's because we hated publicity and wanted to keep the size of our coven to as small a size as possible. But now we have decided to come out, for the sake of womanhood. There has been a growing tendency of inflicting torture on women who claim to be witches. We want to break the hoodoo and this wrong notion which surrounds witchcraft. I should know because I have been in this business for quite some time." She doesn't tell you how long just as she doesn't reveal her age. At least not for the first half an hour! "We do not go by the time or the years. To us the calendar means nothing," she says, her earnestness heightened by the occult paintings, hanging in her drawing room. "We go by the events, the time since we were first initiated into the society. And we do not need to keep age in mind either as we have means of stopping the rate of catabolism within our body. The rate of ageing slows down."

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