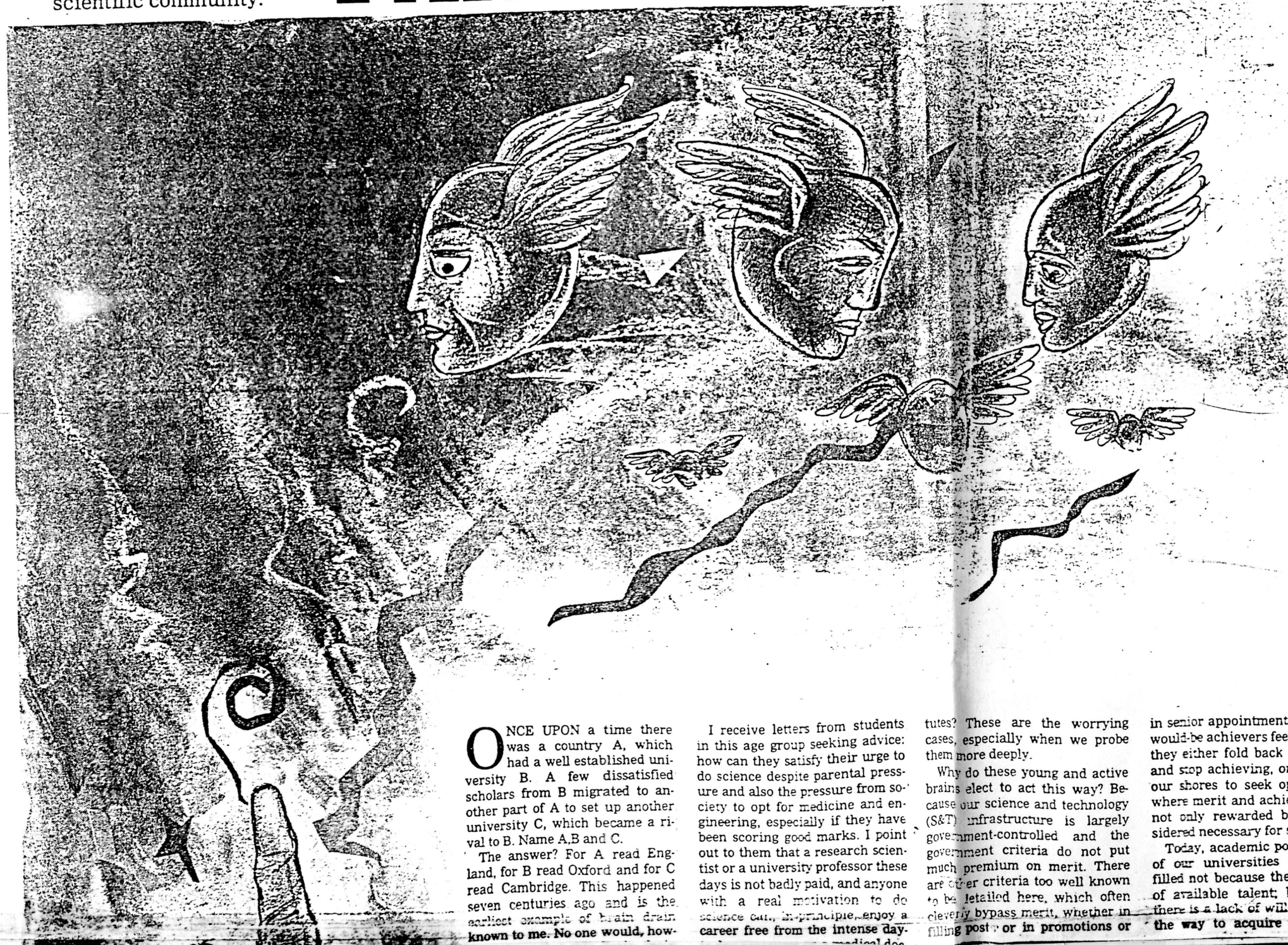


JAYANT NARLIKAR
assesses the reasons for the
brain drain from the Indian
scientific community.

FAREWELL TO MERIT



ONCE UPON a time there was a country A, which had a well established university B. A few dissatisfied scholars from B migrated to another part of A to set up another university C, which became a rival to B. Name A, B and C.

The answer? For A read England, for B read Oxford and for C read Cambridge. This happened seven centuries ago and is the earliest example of brain drain known to me. No one would, how-

I receive letters from students in this age group seeking advice: how can they satisfy their urge to do science despite parental pressure and also the pressure from society to opt for medicine and engineering, especially if they have been scoring good marks. I point out to them that a research scientist or a university professor these days is not badly paid, and anyone with a real motivation to do science can, in principle, enjoy a career free from the intense day-

tutes? These are the worrying cases, especially when we probe them more deeply.

Why do these young and active brains elect to act this way? Because our science and technology (S&T) infrastructure is largely government-controlled and the government criteria do not put much premium on merit. There are other criteria too well known to be detailed here, which often cleverly bypass merit, whether in filling posts or in promotions or

in senior appointments. Thus, the would-be achievers feel frustrated; they either fold back their wings and stop achieving, or they leave our shores to seek opportunities where merit and achievement are not only rewarded but are considered necessary for survival.

Today, academic posts in many of our universities remain unfilled not because there is a lack of available talent, but because there is a lack of will to go out of the way to acquire it. No vice-

chancellor wishes to take the risk with the spectre of *dharnas* and court cases staring him / her in the face. Contrast this with the situation prevailing seven decades ago when Mahamana Madan Mohan Malaviyaji was setting up the Banaras Hindu University (BHU). He needed money for his budding university, for which he went round seeking help from the maharajas and other wealthy donors, for the British *raj* did not look kindly on the institution. But even more zealously, the Mahamana went talent scouting, going not only beyond the provincial boundaries, but also casting his net for talented Indians abroad. He recruited several promising young academics and entrusted them with positions of responsibility, enjoining them to nurture excellence in their respective fields. Today's self-inflicted bureaucratic rules would have frowned on this procedure; but look at the distinction the BHU achieved in the Thirties and the Forties.

We should learn from this example and try to retain these achievers of today in our midst by creating conditions that present challenging tasks before them, with big rewards and incentives if they succeed in executing them. At the same time, clear signals must go to everyone that there is no bailing out of the lazy and the non-achievers.

Although the constitutions of most countries decree that all citizens are equal, nature itself goes for variety. Amongst any population group the abilities of individuals vary, be it in science, mathematics, literature, the fine arts, music, what have you. This has always been the case as the history of any culture will show. History also tells us that behind the lasting effects of any civilisation were these select individuals, who produced excellence. Nobody remembers the mediocrity.

Yet, in today's ambience in the country, the talk of nurturing excellence is viewed with suspicion as undemocratic, elitist or anti-social. The emphasis is on uniform treatment being meted out to one and all. Today's framework in a scientific institution would allow

an Albert Einstein, with the *Theory of Relativity* under his belt the same normal increment that is given to an average Tom, Dick or Harry just for being on the payroll. From the point of view of social justice, this is the safest procedure because apparently it guarantees that nothing will go wrong. But it also guarantees that nothing will go right either, so far as excellent science is concerned. It is a pity that even our best centres of excellence in science are guided by the same books of Muthuswamy that spell out the rules and regulations of any bureaucratic government department.

How inappropriate this is can be seen by contrasting administration from science. In the former, increasing age brings wider experience, broader perspective and greater confidence in the job, and the rules set out for advancement in the administrative service reflect this. In science originality, daring and freshness of outlook are crucial for achievement, and these are found at the beginning of a career, rather than towards its end. It is in the early stages of the career that the scientist needs greater encouragement and greater incentives. By following the administrative pattern for career advancement in science, we fail to recognise and reward merit when it is staring us in the face.

Those who have heard the story of Emperor Aurangzeb and music may like the following parody, applicable to the modern Aurangzebs:

Emperor Aurangzeb was looking out of his window, when he saw a procession with several persons weeping.

"What is the matter?" he asked.

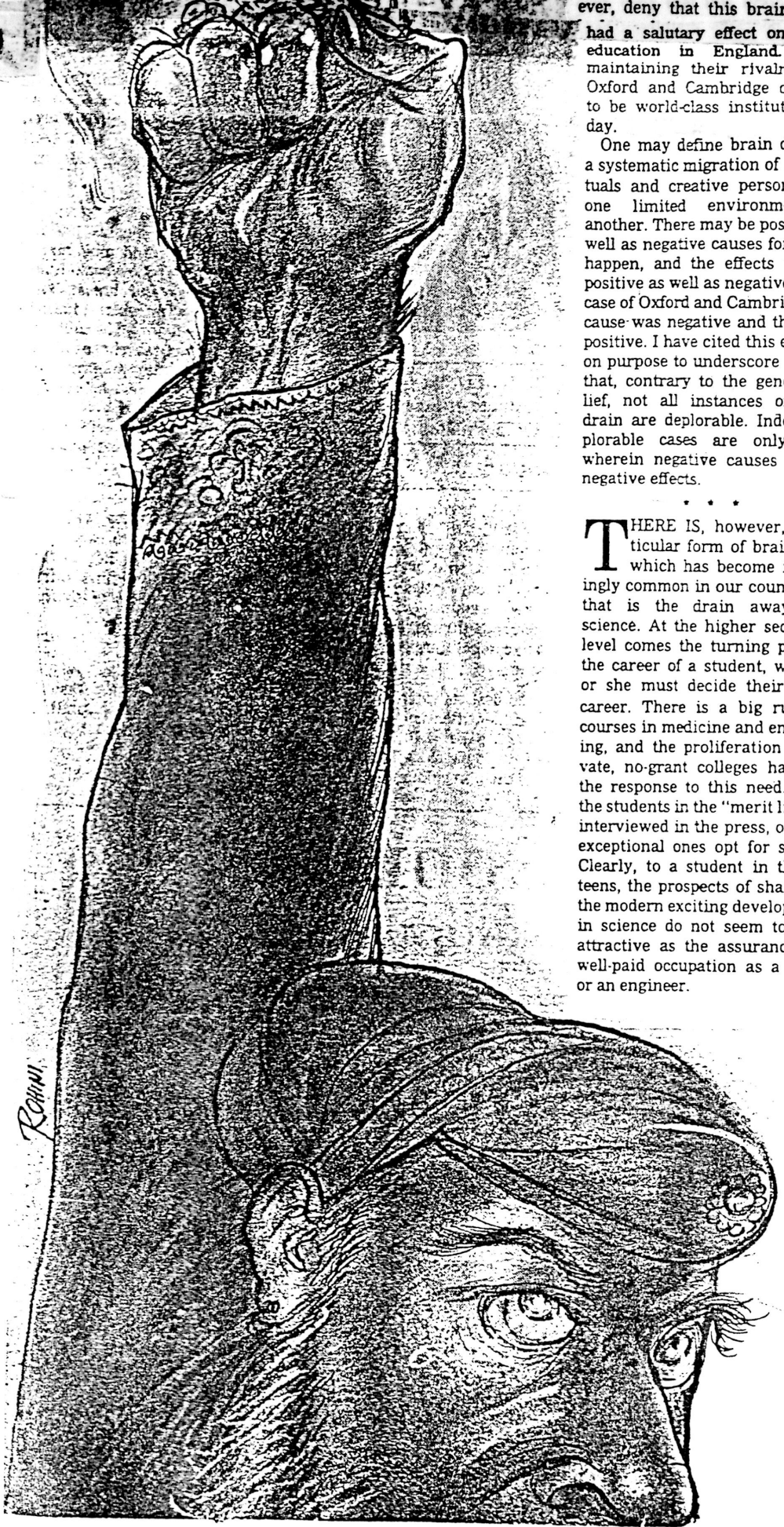
"Sire, this group is heading for the airport for a send-off party" came the reply.

"Indeed, and may I ask who is leaving the country?"

To the Emperor's question, the reply was: "Merit, Sire."

"Good!" exclaimed Aurangzeb. "Tell merit never to come back; it is not wanted here."

Herein lies the bane of our brain drain.



ever deny that this brain drain had a salutary effect on higher education in England. While maintaining their rivalry, both Oxford and Cambridge continue to be world-class institutions today.

One may define brain drain as a systematic migration of intellectuals and creative persons from one limited environment to another. There may be positive, as well as negative causes for this to happen, and the effects may be positive as well as negative. In the case of Oxford and Cambridge, the cause was negative and the effect positive. I have cited this example on purpose to underscore the fact that, contrary to the general belief, not all instances of brain drain are deplorable. Indeed, deplorable cases are only those wherein negative causes lead to negative effects.

THERE IS, however, a particular form of brain drain which has become increasingly common in our country and that is the drain away from science. At the higher secondary level comes the turning point in the career of a student, when he or she must decide their future career. There is a big rush for courses in medicine and engineering, and the proliferation of private, no-grant colleges has been the response to this need. When the students in the "merit list" are interviewed in the press, only the exceptional ones opt for science. Clearly, to a student in the late teens, the prospects of sharing in the modern exciting developments in science do not seem to be as attractive as the assurance of a well-paid occupation as a doctor or an engineer.

to-day pressures on a medical doctor. After all, what can be better than being paid for one's hobby? Come to science, I tell them, provided you really like it and are good at it.

Merit and motivation are necessary for doing well in science and deriving job-satisfaction from it. Lukewarm aptitude and mediocre ability do not produce first-rate science and, if you cannot do first-rate science, you might as well close shop and go home. But are merit and motivation sufficient? Sadly, in the Indian context they are not, a point I will shortly elaborate upon. But the fact remains that it is becoming increasingly difficult to attract the motivated and the meritorious to science in India.

Viewed in this context, the oft-repeated claim that we have the third largest scientific manpower in the world (or is it the second, now that the Soviet Union has lost its identity) sounds hollow. For, in terms of quality and motivation for excellence, the average level of our science is nothing to boast about.

THE BRAIN drain in the Indian context in the usual sense is largely concerned with the migration of Indian scientists and technologists to the West. Is this a serious loss to the country? Do we need to worry about it? In what way can we minimise it? These are the questions often raised and discussed.

First of all, we need not shed tears for every Indian who receives the green card or who gets permission to settle abroad. There are many with modest abilities who are attracted by the greener pastures abroad, whose contribution towards the progress of the mother country would otherwise have been negligible.

Then, there are those meritorious ones who, after going abroad, have acquired skills in highly specialised areas for which our present technological set-up does not provide any outlets. Unless those outlets are desirable for our development and we make conscious efforts to create them here, we can do nothing to bring back scientists of this type. Certainly, we have no right to criticise them on so-called patriotic grounds.

But what about those who could have been absorbed in our present set-up, but who nevertheless went abroad and are working there far more efficiently than they could have if they had chosen to remain here? Why do so many of our bright IIT graduates prefer to do their post-graduate studies abroad, rather than in our own universities and research insti-



AN ELEGANT BLEND OF WOOL AND FINE POLYESTER, FOR IMPECCABLE EXECUTIVE WEAR