

The recent plague epidemic – Was there gross scientific incompetence?

The epidemics in Beed and Surat have highlighted several lapses on the part of those who proclaim themselves to be scientists.

Was it truly the plague?

When newspapers splashed banner headlines over their front pages announcing the infectious, pneumonic form of plague in Surat and, later, in Delhi, no scientist asked this question. Even when panic-stricken citizens in their thousands fled Surat in all directions, carrying the infective organism with them and hordes in cities such as Bombay emptied the shelves of tetracycline, there was no attempt at discussing the pros and cons of diagnosis.

A bacterium is incriminated as the cause of a disease only when Koch's postulates are satisfied. As we write this, several weeks after the detection of the first cases in Beed and Surat, we do not know whether the plague bacillus has been cultured from tissues obtained in these areas. Fragmentary reports in the newspapers suggest that the National Institute for Communicable Diseases (NICD) has found the germ to be sensitive to most available antibiotics. From this we may infer that the organism has been cultured. Is it not the responsibility of NICD to provide to the public at large and the medical community in particular details of the cultural and other characteristics of the organism? When we have a fortnightly journal, aptly named *Current Science*, can not this agency provide all relevant data in it?

If NICD will not part with such essential data, should the medical profession not be up in arms insisting on its release? Why has no organized body within the medical profession acted? Is it not totally out of keeping with all principles of science and ethics to treat patients for a disease without proof of its existence and permit panic and chaos which may have no basis?

We are told that the results of the hemagglutination test were conclusive. On enquiry we learn that these have been equivocal with samples showing a positive result at titre of 1 : 8. We need

positive results at much greater dilution or a rising titre for making a conclusive diagnosis. Once again, neither of the two institutes claiming to make the diagnosis has, as yet, released their findings to scientific or public scrutiny.

Matters of prestige and priority?

We learn from reliable sources that the Haffkine Institute has asked scientists at the All India Institute of Medical Sciences (AIIMS) and NICD to send tissue samples and bacteriological specimens collected by them for study. They have been rebuffed. The tussle between scientists at AIIMS and NICD has been featured in newspaper columns.

When the lives of large segments of the population are at stake, when our economy has been dealt crippling blows and when the reputation of the country has taken worldwide battering, is it correct for scientists to stand on prestige or the lure of being the first to report and publish data?

The situation becomes even more farcical when we learn that scientists from WHO and Center for Disease Control, Atlanta, have been provided all the data they requested and have been taken around the laboratories at these two institutes in Delhi.

Unconcern or incompetence?

We also learn that senior research workers at the Haffkine Institute had requested permission to travel to Surat at the height of the epidemic to collect samples of tissue from the victims for study. Those at the helm in this once famed research centre for plague disallowed such a study.

What was the basis for such refusal? Is it not the concern of the centre which, under Waldemar Haffkine, for the first time ever, provided the vaccine against plague, to work on the new outbreak? Are those at the helm of the institute so bureaucratized that they cannot see the need for scientific study of an illness that has played such havoc and

possesses the potential for spreading country-wide?

Or should they emulate Nero and play the fiddle while the epidemic rages?

Assuming it is the plague, what is the remedy against it?

For several days after it hit the headlines no one pointed out to the public that the germ causing plague is easily vanquished by modern antibiotics.

The astonishing publicity given to tetracycline as *the* answer against *Yersinia pestis* led to panic-stricken masses rushing to hoard this antibiotic. The fact that co-trimoxazole and several newer antibiotics are equally effective was never emphasized during the early phases of the epidemic.

No one pointed out that to prevent the disease, attendants of a patient with proven pneumonic plague should be vaccinated against the plague. Since the vaccine takes some days to produce immunity against the germ, the person should take any one of the several antibiotics effective against the plague germ for this duration. Had this been widely publicized we might have been spared the insane rush for tetracycline.

The *faux pas* on the vaccine is yet another example of our incompetence. The public was merely told that vaccine against plague was imported from Russia, only to be discarded. It was left to reporters to discover that since the Russian vaccine is based on live but modified germs in their secret laboratories (presumably for use in warfare) and since the germ in India may differ markedly from it, we remain in doubt of its safety or efficacy. No scientific agency or group made any attempt at providing information to the public through any of the media.

Abdication of our role as communicators

Peter Day (*Current Science*, 1994, 67, 434-440) provides an excellent review of the role played by the Royal Institution in providing the basis for a

scientific culture in Great Britain. In the same issue D. B. Deb (pp 427-431) proposes an admirable scheme for imparting education of quality in science in India.

In the face of such stimulating concepts being provided to us by far sighted experts, current attitudes and failure to provide information to the

public stand out as anachronistic and retrogressive. No scientific agency or group has provided, from day one, consistent briefing to any of the media, narrated facts as they emerged or provided logical suggestions for action.

If we cannot provide such vital information on a disease that struck terror in so many, can we, ever, hope to

achieve the ideals enunciated by Drs Day and Deb?

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Optimal utilization of young researchers' potential

PhD's in our country are a by-product of scientific researches. In the liberalized economy based on the concept of free market forces of pulls and pushes, the young researchers are not a saleable commodity in the 'international market'. However, some are exportable and are sold in the Western market. In fact, how the Americans and the Europeans recognize the worth of a commodity not saleable in India is neither a trade secret nor requires any intelligent analysis to understand. The simple fact is that they know how to utilize these human resources and we do not.

The problems of choice

The choice of relevant problems for research is the first step towards utilization of young researchers' potential. The isolation of research managers from the numerous practical problems in industry, agriculture and medical field is the primary reason for their incapability to assign research topics of utilitarian value. As a result, scientific researches in our country are not productive in terms of developing desired knowledge, processes or products, and the scientists cannot live up to the expectation of the society. Of course, there are certain exceptions to this observation. The spectacular success demonstrated by the scientists working in the fields of space, atomic energy and the defence-related products is praiseworthy.

The basic researches (which are supposedly done in keeping a long-range goal in view) done in our country are not so basic. The problems chosen are an extension of the work done by the scientists while working abroad. This type of researches may have good value in developing insight into natural phenomena but lose vitality owing to the long gestation period, the primary factors being the constraints of obtaining chemicals, equipment and even knowledge (in terms of books, journals and borrowing expertise), which have to be imported from the developed countries for implementing such projects. Consequently, in the rat race for publication of research findings, our good scientists lose.

Human factor

The problems of funding, instrumentation and other infrastructural aspects are generally discussed for their impeding effects on doing good research. But work ethics and work culture are never debated. A young researcher possessing the necessary aptitude and motivation (and if lucky enough to get better research facility) cannot even be productive to the extent desired owing to the lack of a conducive work environment. The staff (non-researcher but part of the research system), whose jobs are dispensable but secured, do feel a little about the time-bound project of a research scholar. Since they have an upper hand at the

official level, they move at their own speed, ignoring the exigencies of research. Our universities are a glorious place in this regard. Universities in the recent years are not centres for creativity and absorption and diffusion of knowledge but have come to stay as a centre for self-serving, unproductive non-academic staff. The poor research scholars constituting a minority group even lack the fundamental rights in this democratic institutional set-up.

Beyond 2000 AD

Our country is amidst several economic problems, which would be multiplied beyond 2000 AD owing to the geometric rise of human population. Invention, innovation and commercialization of scientific knowledge would be a vital force in improving industrial and agricultural productivity and in tackling disease-causing mortality and morbidity. Planning for proper utilization of scientific manpower should be accorded highest priority, because these people would play a key role in creation, adoption and assimilation of new technologies and help our country to face the grim situation ahead.

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