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An unhappy look at Indian science

Scientists, technologists and politicians charged with planning sat down for a two-day round table recently to look, unhappily, at Indian science. Out of the two-day session grew a manypointed plan for improving the utility of scientific disciplines in the subcon-

The 40-member group, called together by Prime Minister Indira Gandhi, found agricultural stagnation, dependence on foreign aid and technology, wastage of trained manpower and frustration among scientists at various research organizations.

It is possible to detect a sense of disquiet and frustration in the country's scientific community of which brain drain is not the only manifestation. There appears to be a gulf between science and administration, and inadequate contact between science and industry. Science and planning also could be drawn much closer.

There is urgent need for more careful and detailed research planning linked to specific needs and time-horizons. India must be sufficiently bold and imaginative in developing and using its own know-how as well as making the fullest use of the experience of

It is also necessary to ensure that the results achieved are commensurate with investment, such as it is. In the recent draft of the Fourth Plan, scientific research has been allotted a mere 0.25 percent of the gross national product. If any meaningful work is to be undertaken it is felt that the minimum figure should be one percent. Today India spends on research in two years what the United States spends in a day.

The round table thrashed out several problems and freely brought out solutions which now remain to be implemented.

It urged the creation of a Ministry of Science and Technology; the establishment of a single professional society for delineating scientific growth to be called the National Academy of Science and Technology; the free use of scientific personnel and equipment by universities and industrial research organizations; promotion of the popularization of science; the elimination of the hierarchical system of seniority in universities; exploring the means of lessening the brain drain, and limiting foreign collaboration.

In the field of education, the view was expressed that English should be taught to all those who intend to go into specialized and advanced training in science and technology.

"Science, as most people understand it," Mrs. Gandhi said, "means rather complex research and the application of the findings of such experiments. It means probing the secrets of our world and harnessing the power of nature for our own needs.

"We are apt to forget that at the ground level it means combatting superstition and the deadweight of outdated habits and customs."

India, in effect, deals not with C.P. Snow's "two cultures," but with three -the third being, as in any developing country, superstition, tradition and similar forces of inertia. The role of science in such countries must be as much to promote rational inquiry and judgment as to encourage research and development per se.

Mrs. Gandhi put it: "Science is not an objective, but really an attitude and therefore it means the inculcation of new attitudes and a spirit of rational inquiry among the people as a whole so that they turn to science and technology to transform our agriculture and our industry.

"Jawaharlal Nehru founded a chain of national laboratories and established what is now the Bhabha Atomic Research Center in Trombay. It was under his inspiration that the Government adopted the Scientific Policy Resolution in 1958. But there we have stopped. This is really my concern and the need I felt for calling such a round table, because I am getting numerous letters from visitors to our country as well as eminent scientists in other countries who write practically accusing me that nothing had happened for these several years and that we have not progressed further.'

(A more hopeful view of Indian science, however, was voiced by Sir John Crawford, president of the Australian and New Zealand Association for the Advancement of Science. In agriculture, Sir John declared, after studying the Indian situation, the nation has shown eagerness to apply new technology, which can enable the country to win the race between its population explosion and food production-even before birth control programs begin to have a significant effect. The bad droughts of 1965-66 and 1966-67, Sir John declared, had actually stimulated the introduction of new, more scientific methods of farming.)

S. K. Ghaswala

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