

CURRENT SCIENCE

Vol. XIV]

JUNE 1945

[No. 6

	PAGE		PAGE
<i>Food Preservation and Food Technology</i>	139	<i>Spermateliosis and Nucleination.</i> BY	
<i>Tata Memorial Hospital for the Treatment of Cancer and Allied Diseases</i>	.. 140	B. R. SESHACHAR ..	144
<i>Obituary—</i>		<i>The Indian Institute of Art in Industry</i>	.. 146
<i>Sir Martin Onslow Forster, F.R.S.</i>	.. 141	<i>Letters to the Editor</i>	.. 147
<i>Dr. Stanley Kemp, F.R.S.</i>	.. 142	<i>Reviews</i> ..	158
<i>Copper-Cuprous Oxide Rectifier.</i>		<i>The Academy of Sciences, U.S.S.R.</i>	.. 160
By K. R. DIXIT 143	<i>Science Notes and News</i>	.. 161

FOOD PRESERVATION AND FOOD TECHNOLOGY

THE Department of Food of the Government of India has constituted a Technical Panel of Scientists to advise the Department on the preservation and processing of food. Addressing the first meeting of the Panel, Sir J. P. Srivastava, Food Member to the Government of India, declared:

"The problem of food has during recent years engaged the increasing attention of almost all Governments in the world. And it is right that it should be so. Food is the very bedrock of a nation's life and well-being. It is the foundation on which practically all else is built. This is a truth which has long failed to receive the amount of recognition it deserves. Researches in the field of food and nutrition during the last two or three decades have shown how urgent and important this problem is. There is an increasing realisation that between optimum health and flank ill-health there is a considerable no man's land in which people may not be suffering from any obvious disease and yet may not be enjoying that standard of health and vigour which an optimum diet could have afforded them. Even in countries like Britain and the U.S.A. where the general nutritional level is considerably higher than in this country, practically half the population has been considered to be receiving a sub-optimum diet by this standard. In his message to the Hot Springs Conference the late President Roosevelt directed attention to this vital problem and stressed the fact that agriculture and food industries of the world still employed the vast bulk of the population of the world and required far greater consideration than they had so far received. The organization of the United Nation's Interim Commission on Food and Agriculture is a development in this direction. It is fitting that this problem should also receive organized attention in this country.

"The problem of food rests principally on three pillars:

- (1) The production of raw foodstuffs;
- (2) the food-technological industries including the preservation, processing and fortification of foodstuffs, vitamin technology and all related problems;
- (3) the distribution of food to the population according to physiological needs.

FOOD PRESERVATION

"It is with the second set of problems that you will be more specially concerned. Ours is mainly a tropical country, considerable parts of which have in addition a humid climate. These are ideal conditions for food-stuffs to undergo spoilage by insects, micro-organisms and also by normal biochemical processes. While exact figures are not available, our economic loss per year owing to the spoilage of foodstuffs of all kinds must be running into tens of crores of rupees. Ours is pre-eminently a country where food-technology should have reached a high-watermark of development. In Britain and in America, food industries are highly developed. In Britain there are institutions investigating food-technological problems, covering cereals, meat, fruits, fish, etc.; so also in America. These are in constant touch with food-industries, which are getting a higher goal for their standard of production as researches go on.

"It is clear that if countries enjoying a temperate climate, where the rate of spoilage is much less than in ours, take so much care in the preservation of their foodstuffs, our responsibility in this matter is much greater. Beginnings have been made in this country. The jolt of a war knocks off slumber. The question of prevention of spoilage of cereals is receiving much greater attention now than ever before. Canning of fruits has been started on a large scale in the North-West Frontier Province and we hope with increasing standardisation of fruits and further improvement of processing our standard will at least be equal to that of the best canned fruits of other countries. The development of the hydrogenated oil industry has received a great spurt during the war and we are at present engaged with the question of its further development on sound lines. The biscuit industry has been considerably expanded. Industries like those of pepper, mustard, golden syrup, sugar cubes, lime juice cordial, refined salt, etc., have been sought to be developed. It will be our earnest endeavour to see that these industries outlast the war. The problem of the production of vitamins and the fortifications of various foodstuffs with vitamins and minerals, as has been done in the U.K. and the

U.S.A. is before us. The question of food-yeast production from molasses is also receiving consideration.

DEHYDRATION AND REFRIGERATION

The new industry of dehydration has been greatly developed as a result of the war. A considerable body of knowledge has been gathered in course of this development. It is for you and us to consider what part of this industry can be switched on to peace-time production. It is my earnest hope that the fruit dehydration industry which has started on a large scale in the N.W.F.P. may be established on sound lines and become a permanent feature of the food industry in this country. Dehydration of vegetables and fish has been carried out indigenously in village homes in various parts of the country for a long time and it is for you to consider whether, with the help of the knowledge now available about more scientific methods of dehydration, the old indigenously methods may not be improved or transferred to new lines. The food-packing

industry is also an important one, to which I would like to invite your attention.

"Refrigeration is now considered to be the best method of preservation of perishable materials like fish, meat, vegetables, etc., and I would request you to consider this question also with reference to this country.

"The implications of a well-organized food industry are colossal. It is meant to (1) prevent or diminish spoilage, (2) remove foodstuffs from seasonal gluts thus preventing waste and making them available in other seasons, (3) increase or retain the nutritional value of foodstuffs, and (4) produce new foods like yeast, synthetic vitamins, vitamin concentrates, etc. Great things can and will be achieved by the application of science and technology to food. Food has even been produced from wood, and during the present war, fats have been made from coal. I do hope by your joint endeavours with our technical experts, you will be able to help us in the development of a full-fledged food-industry in this country on scientific lines."

TATA MEMORIAL HOSPITAL FOR THE TREATMENT OF CANCER AND ALLIED DISEASES*

PHILANTHROPISTS are the back-bone of any enlightened community, and in India, the House of Tatas has perhaps no equal. The first triennial report of the Tata Memorial Hospital for Cancer shows what enlightened philanthropy could do for the alleviation of human suffering.

On the suggestion of Sir Frederick Sykes, the then Governor of Bombay, Sir Dorab Tata agreed early in 1932, to finance the establishment of a Radium Institute in Bombay. "As originally visualized, the scheme was on a modest scale, providing for the purchase of 400 milligrams of radium at an estimated cost of Rs. 2 lacs which included an endowment for its upkeep."

Owing to the unexpected demise of Sir Dorab Tata in 1932, the "duty of carrying through the project devolved on his Trustees". In order to provide a worthy memorial to the spirit of enlightened philanthropy embodied in the persons of Mr. J. N. Tata and his two sons Sir Dorab and Sir Ratan, the Trustees decided, after consultation with experts like Prof. Regaud of Paris, Dr. Patterson of Manchester and particularly Dr. Ewing of Memorial Hospital, New York, "to start a Cancer Hospital instead of a Radium Institute and equip it with the necessary adjuncts for surgery, X-rays and Radium—for, though a Radium Institute would undoubtedly supply an urgent want in Bombay, the type of service it would render would necessarily be restricted". "If its scope could be enlarged with a proportionate increase in the benefits conferred, the Trustees were of opinion that the much greater expenditure involved in building and maintaining a Cancer Hospital would be justified". Thus came into being the best institution for the treatment and study of Cancer in the East, built and equipped at a cost of Rs. 4,000,000. It was opened on the 28th February 1941 and up to date, some 7,000 patients have had the benefit of the knowledge of the experts in the staff of the institution.

Its modest achievements detailed in the report, makes one hope that after the termination of the hostilities, the extension of the teaching and research programme envisaged, would "really contribute its share to the solution of the many problems that are encountered in the study of Cancer". Realisation of this aim would be possible, only if the best brains in pure science are attracted to the laboratory and given not only facilities, but what is more important, unfettered freedom.

Cancer is a problem of the West while Leprosy is the problem of the East. Care of over five thousand Cancer patients in the course of three years is no mean record, but this pales into insignificance when it is realized that among us in India to-day, there are 1,500,000 lepers. One out of every three lepers in the world is in India. Even the erudite refuse to consider this serious leper problem, owing to the horror and loathing instilled into every one, by generations of dread of the disease. The problem has to be tackled some time, if we wish to rid India of this foul disease.

When theology is unable to fit the lepra bacilli in any Cosmic Plan, when scientists during the past five decades have failed not only to discover a remedy but even to make out whether the bacilli seen in a lesion are living or dead, when all attempts either to cultivate the bacilli or to transmit it to laboratory animals have failed, and when it is impracticable to dream of either isolating all the infectious cases or of separating from leprous parents their children at birth and rearing them up under ideal conditions by legislative measures, it is up to organized philanthropy to encourage investigations on the disease, extend to the victims, the benefits of medical science and rear up children of leprous parents free from chances of infection.

One fervently hopes that the next great philanthropic venture of the House of Tatas would be an attempt to tackle the problem of Leprosy in India.

* "First Triennial Report," Bombay, 1945.