

A REGIONAL METALLURGICAL RESEARCH LABORATORY FOR WESTERN INDIA

AN IMPASSIONED plea for the establishment of a centre for industrial metallurgical research to meet the industrial needs of Western India was made by Prof. N. P. Gandhi in the course of his address before the Bombay Metallurgical Society, at Bombay. Every metallurgical factory, he said, must needs get problems to solve from time to time. "Sometimes a furnace is not giving the required temperature; sometimes the fuel or energy consumed is excessive; sometimes the refractory material fails in an unaccountable manner; sometimes the metal produced has too many blow holes or other defects; sometimes the metal cannot be rolled well; sometimes the dies, rolls, etc., wear too quickly or break too often; sometimes the rejection of castings is too great to leave a margin of profit; sometimes a tool or machine part is not functioning properly due to faulty heat treatment; sometimes a metal is oxidising badly, and so on. Scores of such instances will occur to most factory workers. How are these problems to be solved? By shutting our eyes to them? By blaming ill-luck? By putting up with them as something mysterious or unsolvable? No. They can be investigated into. In most cases a clue and a way out can be found at a sufficiently low cost. Only we must have a testing laboratory, a band of investigators and the will and perseverance to solve.

Most small factories cannot afford to have a research laboratory of their own. They would probably have more technical problems to solve than the larger factories. Even if they can afford the equipment, they cannot afford the salary of a whole-time staff. What then are they to do? The answer is: Co-operate with other factories in the trade. Here comes in the question of competition. One factory owner often does not want the others to know what his problem is and what solution he has found for it. Can this necessary secrecy be safeguarded in a research laboratory put up jointly with others in the trade? The answer is: yes. If you ask how, here is an answer.

Suppose 20 factories in a trade jointly raise a sum of two lakhs of rupees for a co-operative industrial research laboratory. (Nowadays amounts can be contributed

for such projects from Government tax.) It is likely that the Government will make a contribution of an equal amount towards such an enterprise. But suppose that the Government contribution is only half, i.e., one lakh of rupees. This would make at first, about two lakhs of rupees worth of equipment can be installed including machines for testing tensile strength, hardness, impact resistance, fatigue, corrosion, etc., an analytical laboratory, microphotographic laboratory, gasometer, bath, grinding and recording. Great apparatus like carbon dioxide recorder, low temperature apparatus, a small workshop and a library. The industry would have to pay a small cost on its sale to meet the cost of a small permanent research staff consisting of 3 or 4 members. When not engaged in solving any particular firm's problems, this small permanent research staff can remain busy solving general problems pertaining to the industry as a whole. Attached to the research laboratory there should be a certain number of vacant rooms having separate entrances and fitted with gas, water, electricity and laboratory furniture. Any member-firm wanting to solve a problem can hire one of the vacant rooms for a period and borrow or have access to the necessary equipment and stores in the common stock. It should be open to the firm to make use of the permanent research staff on partial payment if it so desires. It should be likewise be open to the firm to bring its own staff for solving its problems either from its own factory or specially recruited by it for the purpose, or both. It should only be necessary for the research department to see that the staff brought is sufficiently qualified to use the borrowed equipment properly. At the end of the work the borrowed equipment and stores are to be returned. No charge should be made to the firm for the common capital equipment used for the research. The only charge should be in respect of the stores and energy consumed and for any damage caused. The firm need not divulge what problem it investigated and with what results.

The cost of solving a problem in such a manner would only be a fraction of what the firm would have to spend if it was to

buy all the necessary instruments, apparatus, etc., fit up a temporary laboratory for the research, dismantle it and dispose of it when the work was over. If the scheme of cooperative industrial research succeeded, more money would flow in and further

equipment such as a spectrograph, a polarograph, an X-ray unit, etc. could be added and even a permanent building put up. If it failed, there would probably be little difficulty in disposing of the standard units of the equipment.

THE INDIAN COUNCIL OF THE BRITISH EMPIRE LEPROSY RELIEF ASSOCIATION ANNUAL REPORT, 1947

THE All-India Leprosy Workers Conference, the first of its kind in India, held its successful session in Wardha. The increasing interest taken by Provincial Governments in anti-leprosy work was highly gratifying. The research activities were conducted in collaboration with the Endowment Fund of the School of Tropical Medicine, Calcutta, and the Indian Research Fund Association. The summary of the researches included:

1. *Therapeutic studies:* Sulphones, Promins and diazone, in leprosy, were found to yield some results in certain cases of lepromatous cases with ulcers and eye-complications and in those who cannot stand injection of hydnocarpus oil. The drugs mark a definite advance in the treatment of leprosy.

2. *Clinical Study:* A study on the eye-lesions in leprosy has been completed the useful data collected indicating two main types of eye-lesions in leprosy. 200 cases were studied of which 116 were neutral cases; of these 92 were bacteriologically negative, 24 positive, only two cases had complete loss of sight in one eye. Of 80 lepromatous cases examined, 58 were fairly intensive, 22 advanced, complete loss of sight was noticed only in two cases. This finding indicates that eye-lesions in leprosy in India is a rare condition.

3. *Bacteriological studies:* Dr Rao's claim for successful cultivation of *M. leprae* in symbiosis with leishmania culture could not be confirmed.

4. *Transmission of Leprosy by cockroaches:* Dr. Mosser, a Rhodesian leprosy worker suggested that cockroaches are responsible for transmission of leprosy, but this view could not be confirmed by results of the experiment carried out at the School of Tropical Medicine, Calcutta.

Useful findings were obtained in a correlation study of clinical, bacteriological

and immunological aspects of leprosy. Other activities included teaching and routine clinical work.

Among the Provincial branches the scope of the work was enormously widened in Madras. There were 12 important inpatient institutions in the Province besides facilities for admission and treatment in different Headquarters hospitals. In the field of investigation, child leprosy received considerable attention. In Saidapet, a Child Clinic was established exclusively for child leprosy enquiry and valuable data regarding incidence of the nature of the disease were collected. It was elicited that the majority of leprosy cases in children under ten years formed a group of 'pre-lepromatous leprosy' or incipient lesion of childhood. They were kept under observation without treatment and most of them showed spontaneous improvement. It was also found that the closer and more prolonged the contact with lepromatous cases, the more serious the form of the resulting disease. Another valuable observation was that the incidence of leprosy was decreasing in villages where night segregation of infective patients was enforced and increased in the corresponding groups of villages where there was no night segregation. In the survey work in the endemic districts it was found that in the highly endemic area child-rate varied from 10% to 73.8% of the total cases. In the sphere of treatment with sulphone groups of drugs there was some promise in certain type of cases as was previously observed. Some ayurvedic remedies reported to be of use in leprosy were tried without encouraging results. The Provincial Government, the Indian Council of British Empire Leprosy Relief Association and Mission Institutions have share in the Anti-Leprosy campaign in the Province.