

things to an explosive point, mostly amongst the restive youth, and the downtrodden. We are now seeing its expression in their great life of Calcutta, which has always been the barometer of our countries mood and thinking and expression of life and programme.

Our planners endeavour should therefore be directed to such efforts as would both in the short term and long term attempt to quickly bring about conditions in our life and physical well-being as would make the weaker section of our society. The downtrodden, the marginal strugglers, more comfortable, more happy, more economically at ease, as would make available to them more abundantly than ever before food, shelter, clothes, and culture of our society, and a larger share of the wealth of the world.

Our planners have to tackle the physical and economical and cultural development at the same time. The material equipment we choose shall therefore have to be appropriate to these needs. We must not look at the material equipments solely in terms of wood, steel & refractory clay. Our equipments of development are to be picked up out of our human resources as well from out of material tools. No amount of material tools will be of any-great benefit to development unless we can get together enthused bands of workers. Workers who have dedication, workers who have a sense of belonging to the projects in implementations, persons who have imagination, capability and understanding of the accruing benefits.

CHIEF GUEST'S ADDRESS

by **Shri P. C. Bose,**

Former Executive Director, Calcutta Metropolitan Water & Sanitation Authority.

It is very gratifying to note that this seminar which has been sponsored by the Association of Engineers, considered, Equipment and Materials which would be necessary for the development of Calcutta Metropolitan District in particular, and also be, in general, necessary for all engineering projects.

Urbanisation has been proceeding in Calcutta area very rapidly for quite sometime, say 30 years or so. India is the heritage of

urbanisation. Before 1924, it was thought that people of Babylon, Egypt and Messopotemia gave the idea of urbanisation. It was only in 1924, during the time of Sir John Moore, late Rakhai Das Bandopadhyay, after excavation of Mohenjodaro and Harappa, found out and proved to the world that urbanisation in India was even older than that of Egypt, Babylon and Messopotemia. It is a pity of execution of what we are thinking of

what we should have done years and years ago. This is a happy inauguration no doubt.

In Calcutta water is in short supply. It is a chronic disease prevailing not only here but in other large metropolis of India or even in other countries abroad. This will remain unless water, which we produce is used properly and controlled. You will be pleased to note that a recent survey in Calcutta shows that more than 40% to 50% of water is left unaccounted for. So you can get at best 50% of the water-supply. How it is circulated we don't know. Whether it is merely used or passing away, there is no record of it.

Now the question is, how to get over it. No city can govern the water requirements unless it is properly controlled. In California, after introduction of metering system in water supply, people have reduced their requirements upto 35%. In our area, there is no doubt that both surface water and ground water are available. It costs money to supply water. It costs to produce and to distribute them. The headworks cost is 30% whereas the abstraction cost is 70%. It is to be husbanded and distributed properly with the introduction of metering. People think that metering will curb your right. This is wrong. In Calcutta there is consolidated rate. In Bombay, they are gradually changing over their consolidated rate to metering rate. They make a profit out of it. I should say, a saving of nearly 8 crore of rupees a year, by the sale of water to the industrialists and to the house-holders, which they invest in development of water. An engineer should from the very beginning think how to make both ends meet. The economic aspect should be looked

from the very beginning. This is the one aspect of the control of water.

Then comes the question of selection materials. This is also very important. It has been found that, unless we choose proper kind of materials, we shall face trouble very soon regarding pumps, metering, valves and all controlling gears necessary in connection with the water supply, sewerage and drainage, building, housing, plumbing, etc. This aspect, I am sure, through your deliberations, the industrialists and engineers will be able to have an idea, of materials and equipment that would be useful. These projects are going to be implemented and I wish them success. I wish the Association of Engineers a long and progressive life and I thank you gentlemen.

1. Pumps Generally Used in Water Supply and Sanitary Works, by **Sri R. B. Chakraborty**, Engineering Director, CMWSA.

The installation of pump may be an easy job, but the selection of correct pump is difficult. Pumps should be classified on the basis of specific speed. Due to ignorance of many users, the manufacturers omit the volute line and these have deteriorated the standard of production of pumps in the country. (Diagrams of various types of pumps were exhibited).

2. Electro-magnetic Pump by **Dr. M. Bhattacharjee** of Jadavpur University.

An Electro-magnetic pump (formerly called by the inventor Sonic pump) designed

by the author was demonstrated. The pump was adoptable for low suction operation as in cart-urettor or aviation fuel pump or domestic pump.

3. Electrical Operation of Sluice Valve by **Prof. A. K. Chowdhury** of B. E. College, Sibpur.

The author explained the operation of sluice valve, designed by him. The manual operation of sluice valve does not produce instantaneous result. The author's invention therefore removes a long felt want. This also contributes to import substitution.

4. A Live Reference Index for Engineering Equipment and Materials by **Sri S. K. Banerjee**, Scientist, CMERI, Durgapur.

The authors stressed the compilation of Buyers' guide for education and information of producers and consumers.

Prof. A. C. Roy, Vice-Chancellor of North Bengal University, in his speech as the Chairman of the session strongly urged the engineers to respond to the call of the Chairman of CMDA in giving shape to the development work in the minimal of time. In his

opinion these should be short-term and long-term planning. He instanced the road repair work in our country and elucidated how the estimate for recurring road repair work takes months for preparation and financial sanction and the repair for one season becomes long overdue. He mentioned that in Russia road repair is done on the spot in few minutes by mechanical apparatus. The delay in road repair in our country is not due to engineers but due to procedural embroiglio. He also mentioned about man power problems for the execution of projects. We have all the talents like any other developed country but the utilisation of talents is not organised. The engineering projects of the day can be successfully established by integrated efforts of civil, mechanical and electrical engineers. We have the required expertise indigenously. It is only the organisation which is lacking. It is only the administrative hurdle which is standing in the way. A combination of engineering talents and advice of expertise can do away with import, can tackle any problem and if administrative swag is removed, can work miracles. He appealed to the Association of Engineers, Institution of Engineers, the Indian Engineering Association to go ahead to solve the problems of the country.