

facilities should be given to the sugar factories to establish subsidiary industries." While welcoming this move we have only to suggest that a good portion of the Government grant be earmarked for research into problems of immediate interest like the utilisation of molasses for the maximum production of power

alcohol, food yeast (from which the B Vitamins can also be manufactured) and of bagasse for the production of paper and boards. Such researches should be planned and directed by a Committee of Experts appointed by Government, and must not, for obvious reasons, be entrusted to unenlightened sugar interests.

## CHEMICAL RESEARCH AND INDUSTRY\*

MODERN chemistry is undoubtedly the most important of sciences in relation to industry. It is not unlikely that the research carried out in the National Chemical Laboratory at Poona may from the point of view of immediate results for the benefit of industry prove by far the most important of all the National Laboratories which are being established in various centres in India. The rapid industrial development in Western countries was largely the result of development of chemical technology.

We cannot sufficiently emphasise the importance of scientific research for industrial progress. We have not paid adequate attention to research and in consequence the industrial development in our country is at a relatively low level. Those industries which have been developed are largely dependent upon not only imported machinery but on processes made available by the foreign manufacturer. The only advantages that industry depends upon in India are cheaper labour and the advantage of such raw materials as may be available and of course a large and easy market that we have in India by reason of its population. The establishment of the National Chemical Laboratory in close co-operation with industrialists through the Council of Scientific and Industrial Research will, I hope, help to bring Indian industries scientifically and technologically to a higher level of efficiency.

### APPEAL TO INDUSTRIALISTS FOR GENEROUS SUPPORT TO RESEARCH

On this occasion it may not be inappropriate if I make a very special appeal to all industrialists that money put in scientific research is in the long run a good investment. I appeal for as much funds as industrialists can give

to this and the other national laboratories. We cannot always expect immediate returns on investigations undertaken by scientists. Nature is not an easy customer. We have to accept defeat on ten occasions and persevere in order to win on the eleventh occasion. The discovery made at the end of a long series of experiments may in its reward compensate for all the negative results which preceded it and which the patience of the scientists endured with equanimity. The story of Bhagirat who did penance to bring the Ganga down is a parable to illustrate the patience and perseverance and single-minded concentration on scientific research which produce results for practical application in human progress. I would appeal to industrialists and other commonsense people not to expect immediate money-returns for investment in scientific research. To expect immediate returns is a very short-sighted approach to the goddess of science. She will refuse to respond to such advances. Many fields of enquiry and experiment which appear to be wasteful and irrelevant may at the end prove abundantly useful and productive of discoveries of great value. Some things appear at the earlier stages to be academical and of little practical utility. Nobody imagined sometime ago that atoms could have any practical value, but to-day these investigations have resulted in one of the most deadly of the weapons of war. What was mere theory and dream has become too real, indeed one might wish it were less of a reality.

\* Extracts from the address by Sri C. Rajagopalachari, Member for Industries and Supplies, Government of India, who presided on the occasion of the Foundation Laying Ceremony of the National Chemical Laboratory, at Poona, on the 6th April 1947.

## UNESCO, DIVISION OF NATURAL SCIENCE

IMMEDIATELY action will be taken by the Division of Natural Science of UNESCO during 1947, on (1) Reparations in the form of scientific equipment, (2) Aid to biological standardisation (PCBS will be the responsibility of WHO), (3) Investigation of the role of customs duties as barriers to the circulation of scientific equipment, (4) Standardisation of scientific equipment (in the meantime the ISO and the Unions will be encouraged to concern themselves with this), (5) The language ques-

tion and an auxiliary international language for science, (6) Formation of an international scientific appointments agency, (7) Formation of international chairs at universities, (8) Institution of prizes, laureateships, etc., (9) Commissioning the preparation of school text-books designed to explain the world-view of science, (10) Provision of scientific apparatus and equipment for regions and countries remote from the main centres of science and technology.