

relation to the outbreaks, seeing that they had to rely upon newspaper reports for the times of the outbreaks.

### The Disturbing Influence of Science

LECTURING to the Science Federation of the University of Manchester on January 23 under the title "The Irresponsibility of Science", Prof. H. Levy asserted that the problems of unemployment and the distribution of leisure are problems which the man of science must help to solve. It is part of the duty of the scientific man to examine the external properties of science and to face the ethical problems which the application of scientific discoveries is liable to create. The habit engendered in the scientific worker by his very method of endeavouring to isolate objects or causes and consider the influence of single factors in a problem has a very real danger in that it leads scientific workers to assume that all scientific questions are independent of ethics. Practically all scientific work, however, has a social aspect and its social properties cannot be clearly separated from its scientific properties any more than theoretical and applied science can be sharply demarcated. At the present time we are being forced to consider indeed the limit beyond which the process of improving the weapons of production is likely to disturb the structure of the original scientific movement itself. The scientific worker cannot ignore the fact that in practice what is intended as a gift of more leisure for all becomes unemployment and loss of consuming power for some. Scientific men must endeavour to find what factors go to the creation of an unstable society under the impact of science in this way. Prof. Levy suggested that scientific men should analyse the tendencies of science so that they could direct them. Science, which has been a revolutionary factor, has now become a disturbing factor in the world, affecting the stability of communities, and the study of that disturbance is one for international science.

### Science and the Textile Industry

SPEAKING on January 26 on the textile industry in the course of lectures on industrial affairs which are being given to the students of the Imperial College of Science and Technology, Dr. Kenneth Lee expressed his belief that the rapid development of scientific research will prove the best investment the textile industry can make. The British Cotton Industry Research Association has undoubtedly the best equipped textile research institute in the world, but although about eighty per cent of those engaged in production contributed to it, in relation to the magnitude of the industry the amount subscribed is negligible. Dr. Kenneth Lee believes that if the necessary financial support is forthcoming, we could dominate to a large extent the cotton textile field in the production of new inventions during the next few years. In addition to utilising science, the cotton industry must also employ men in its mills who can understand the work that science is doing. Dr. Kenneth Lee referred in particular to the way in

which science, by introducing means of artificial humidification and ventilation, has not only discounted what was once supposed to be a great advantage of the Lancashire industry—its damp climate—but has made it possible to obtain uniform conditions throughout the year with higher output and more efficient use of automatic machinery.

### Direct-Current Generators for Electrostatic Precipitation

IN the English Electric Co.'s *Journal* for October, a description is given of the high-pressure d.c. dynamos it constructs for use in electrostatic precipitation plant. The Whessoe Foundry and Engineering Co., Ltd., specialises in apparatus for fog and mist extraction, and the English Electric Co.'s dynamos are specially designed to work with its plant. The removal of suspended particles from large volumes of gas is an important commercial problem at the present time. Electrostatic precipitation is now regarded as the most efficient and economical method for cleaning gases. The English Electric Co. has designed many high-pressure d.c. machines for radio transmission purposes, and the new dynamos are based on the experience gained in radio work. The generating unit for a typical equipment has to supply a current of about 0.15 amperes at a pressure of 45 kilovolts. The unit consists of a driving motor made to suit the local supply, coupled to three generators connected in series. The frames of the machines are insulated from the earth by individual supports of solid porcelain. The whole of the high-pressure apparatus is enclosed by screens which separate it from the driving motor and prevent unauthorised access. A simple interlock on the door renders it impossible for anyone to enter the high-pressure compartment when the generators are running. As a further precaution, every conductor which is at high pressure when the machine is running is connected with the earth when the set is at 'standstill'. Accidental shocks are thus avoided. A notable feature of the set is its ability to withstand a short circuit without a 'flash-over'. A model precipitation equipment was shown in action at the English Electric Co.'s exhibition last November.

### Ship Researches at the William Froude Laboratory

DURING the last ten or twelve years, no fewer than twenty-two papers have been contributed to the transactions of the Institution of Naval Architects, the North-East Coast Institution of Engineers and Shipbuilders and other bodies, by the members of the staff of the William Froude Laboratory, National Physical Laboratory, Teddington. Among these papers are six on the effect of weather conditions on the propulsion of ships, seven on the manœuvring of ships and six on the efficiency of screw propellers. The other papers deal with the hulls of flying boats and ship propulsion data. Needless to say, all the papers are of permanent value and they have now been re-issued as vol. 23 of the *Collected Researches of the National Physical Laboratory* (London: H.M. Stationery Office, 20s. net). Arrangements have also been made to publish them in five groups. Each