details of these transmissions can be obtained on application to the Director, National Physical Laboratory, Teddington, Middlesex.

Lead Sheaths of Electric Cables

LEAD is a very suitable metal for providing a water-tight covering to an electric cable buried in the earth. The weight of the lead sheaths made per annum in Britain alone is 64,000 tons. Taking into account the much larger quantity that must be used in the many cable factories throughout the world, it will be seen that an improvement in the technique of the manufacture of lead sheaths is one which seriously concerns both users and manufacturers. Of recent years, much thought has been given to this problem and very many patents have been taken out for improvements. In a paper by Dr. P. Dunsheath, read to the Institution of Electrical Engineers on December 3, a method for the continuous extrusion of lead sheaths over cables is described which is being widely adopted by manufacturers. Hitherto, the extrusion of the lead has been done by the ram of a hydraulic press. In Dr. Dunsheath's method, the pressure required to extrude the lead is obtained by means of a motor-driven screw member. In 1929 the first lead pipe was extruded by a continuous process, and the development has continued steadily up to the present. A defect of cable sheaths made on hydraulic presses is the inclusion in the finished pipe of welds between separate faces of metal, which at some stage in the process have been exposed to the air and therefore become slightly oxidized. Provided sufficient time is allowed to elapse and sufficient pressure applied at a sufficiently high temperature, two separate masses of lead will weld together completely into one homogeneous mass if the faces are clean and free from oxide.

Air Raid Precautions and Air Disarmament

A PAMPHLET entitled "Defence that is no Defence", by Dr. C. E. M. Joad, issued by the National Peace Council, directing attention to the inadequacy of the Government proposals for defence against air raids and the impossibility of devising any adequate protection against simultaneous attack by gas, explosive and incendiary bombs, quotes the warning against this barbarous perversion of science and industry in the tendency to accept the use of aircraft for unrestricted bomb and gas attack on civilized populations uttered by leading scientific workers when the Government schemes were first introduced. Subsequent events have only confirmed the prediction that acceptance of this position must rapidly lead to the breakdown of civilized life. Dr. Joad, while emphasizing the futility of the measures so far proposed by the Government and also the difficulty of its position, urges that the Government should work strenuously for abolition of the bombing aeroplane and for disarming in the air and placing civil aviation on an international basis, as affording the only security against destruction of our cities by attack from the air. He also urges a policy directed towards the removal of economic tensions which are endangering peace, and suggests a definite lead from Great Britain in regard to access to raw materials and equalizing of opportunities for trade which might be provided by an extension of the mandates system, the lowering of tariffs and removal of economic barriers.

Scientific Management and Economic Problems

IN an address to the Engineers' Study Group on Economics on January 19, Major L. R. Urwick spoke on the contribution of scientific management to the solution of present economic difficulties. He outlined the development of the principles of scientific management from the pioneer work of Charles Babbage and F. W. Taylor to such recent manifestations as "Stakhanovism" in Russia. Scientific management means essentially not the multiplication of efficiency experts but the adoption by both employers and employed of a new mental outlook, based on exact measurement and not on opinion, and more interested in increasing the output of industry than in haggling about its division. Resistance to Taylor's ideas had largely been due to those of his followers who had adopted his methods piecemeal while neglecting the underlying philosophy. Scientific management has spread much faster on the productive side of industry than on the distributive, or in finance, and the machinery of Government has also profited far less than it should have from the available knowledge of management problems. The first part of a chapter on "The Division of Labour and the Pricing System" has recently been forwarded in draft, and the chapter on "Money and Banking" has been discussed at a recent meeting of this Group.

Analytical Control of Foods and Drugs

Extracts from the annual report of the Ministry of Health and abstracts of reports of public analysts upon the analytical control of foods and drugs for 1935 have been issued as a separate pamphlet (Sale of Foods and Drugs. H.M. Stationery Office, 1936. 3*d*. net). No less than 143,831 samples were analysed by public analysts in England and Wales, of which 7,972, or 5·5 per cent, were reported against. The number of samples of milk examined was 78,674, of which 5,798 samples were reported to be adulterated or not up to standard. Several samples of canned products were found to be contaminated with tin, lead, copper or zinc. A few samples of sugar contained sand, and one of icing sugar rancid fat and dead flies. Adverse reports were made on a number of 'cream' cakes and pastries on the ground that the filling consisted wholly or partially of fat other than milk fat, and a number of 'chocolate' rolls and cakes contained no chocolate. The reports of the public analysts are abstracted in a series of tables.

National Institute for Research in Dairying, Reading

IN the annual report for 1935 of this Institute, which has recently been issued, the research and other activities are summarized. The research work includes such varied subjects as winter feeding of young dairy cattle and artificial insemination of