News and Views

The E.R.A. Laboratory at Perivale

ON October 22, the Duke of Kent opened the new laboratory of the British Electrical and Allied Research Association which has been built at Perivale, Middlesex. Referring to the importance of research, he said that, in a mechanical era such as ours, it is one of the most important features of productive industry. The Association is supported by the Department of Scientific and Industrial Research, the Institution of Electrical Engineers, the British Broadcasting Corporation and many other bodies, including electric supply undertakings in the dominions and colonies. Electrical manufacturing firms are now well-equipped with laboratories for conducting research into problems bringing immediate profit to themselves, and they spend in this way hundreds of thousands of pounds a year. The Research Association conducts researches of general interest, which are of benefit to the user of electricity (the public), the user of electrical plant and apparatus (the electricity supply undertakings and the public) and to the manufacturer who uses electrical materials. The research work is carried out under the guidance of its council and seventy-five technical committees consisting of 450 leading experts in all branches of the industry who give their services voluntarily. The research work as a whole is supervised by the director, who is assisted by a staff of forty-seven technical experts and thirty-two clerical workers. Most of the work is done in existing establishments, the National Physical Laboratory, universities, manufacturers' laboratories, etc., but where special facilities are required it is carried out by the technical staff.

THE Association's new laboratory has a total floor space of about 14,000 square feet; but there is room for increasing the staff without further extension of the premises, and the site is capable of further development. The power frequency and heavy current laboratory contains a trench specially constructed for tests on cables laid horizontally. The standardising laboratory, physics laboratory, and generator room are also on this floor. In the east wing are situated laboratories which are specially equipped for researches on heavy current circuit breakers. The west side contains the radio and telephone laboratories, high-voltage laboratory, chemical laboratory, workshop and main store. The plant comprises a 230 volt–450 ampere hour battery which is charged automatically during the night by a mercury arc rectifier, and its output voltage is controlled by an automatic voltage regulator. Over each investigator's bench there is a small switchboard from which any of the numerous A.C. or D.C. circuits can be obtained. The high-tension laboratory is equipped for tests up to 80,000 volts. The heating plant is operated automatically, and burns a cheap grade of coal. The laboratory has been designed with a view to economy and efficiency. The night and week-end temperature is automatically maintained at a somewhat lower value than the thermostatically controlled temperature of the working period.

Bridging the Gap: Metropolitan-Vickers Laboratories

BETWEEN the abstract idea of an invention, or new scientific knowledge, to demonstrated utility, there is generally a wide gap, and to bridge this gap much work has to be done in special research laboratories. At the end of the War, Metropolitan-Vickers was one of the first large industrial organisations to realise the great part which scientific research would play in the development of industry. The building of the research laboratories, which now have a floor area of more than 40,000 square feet, was commenced in 1920. A rule has been made that all materials and products which enter the company's works as 'raw materials' must be subjected to test by the Research Department. As this Department is in close touch with the works and factories which develop the raw materials, these tests have been a great help to suppliers in improving their products.

THE Research Department is organised into a series of sections which form one co-operative whole, and this enables each problem to be investigated rapidly in the most efficient way. The four main buildings may be roughly described as the chemical, mechanical, high-tension and physical laboratories. Photographs of some of the apparatus used in making tests is shown in the pamphlet. Many of the machines used are unique; some of them incorporate the latest methods devised by scientific workers, and there are few machines in Great Britain which rival them in size. We were much impressed by the photograph of the M.V. 500 kw. wireless valve, installed at Rugby and continuously evacuated by M.V. oil condensation pumps and a single rotary pump. In the library section, current scientific, technical and economic literature is scrutinised and translations are constantly being made from many languages.

The Mitten Crab in English Rivers

IN the review of Peters and Panning's "Monograph of the Mitten Crab" published in NATURE of June 9, 1934, an account was given of the invasion of European rivers by this Chinese species, and the probability of its spreading to English rivers was pointed out. This seems now to have come to pass. About a fortnight ago, a living specimen was found on one of the screens guarding the pipes through which water is pumped from the Thames into the condensers at Lots Road Power Station in Chelsea. It is a full-grown male, the carapace measuring 63 mm. in length, by 68 mm. in breadth. The exact way in which the species has reached Great Britain is

a matter for conjecture, but the possibilities of transport from the estuaries of Holland or North Germany are obvious. Some highly coloured forecasts have appeared in the daily Press regarding the damage likely to be caused if the crab becomes established in English rivers and estuaries. It can safely be said, however, that there is little ground for apprehension. On the Continent, the banks of rivers have been undermined in places by the burrows of the crabs, but the most serious damage has been caused to fresh-water fishes. In Great Britain, where fresh-water fish have for the most part only a sporting value, the new addition to the fauna may justify some anxiety on the part of anglers in the eastern counties. There is fortunately no reason for anticipating that the crab will introduce into Europe the lung disease, paragonimiasis, of which it is one of the vectors in the Far East.

Association of British Chemical Manufacturers

THE nineteenth annual report of the Association of British Chemical Manufacturers, submitted to the annual meeting on October 10, records an increase in membership from 109 to 118, while the number of affiliated associations is now 13. Reference is made to the participation of the Association in the Brussels International and Universal Exhibition, the British Chemical Exhibit at which has been organised by the Association at the request of the Department of Overseas Trade. The safety activities of the Association have been continued, and the Association has submitted a list of solvents in general use as a basis for the investigation, which has now been commenced by a special committee under the Medical Research Council, on their physiological effects in relation to industrial risks. The investigation on tests for the detection of low concentrations of toxic gases that are likely to be encountered in industry, to which the Association has contributed half the cost, is nearing completion. Methods of detection and estimation, usually with test papers, have been worked out and standardised for a number of gases by the Chemical Defence Research Department, and a printing method has been discovered which will give consistent results and yield permanent stains. The Association is also supporting financially work on the testing of respirators for industrial use to ensure that they give adequate protection, which is being carried out by the Chemical Research Department. The Association has taken over from the Chemical and Allied Employers' Federation the regular collection and investigation of accident statistics as part of its normal safety activities. Other matters on which action has been taken during the year relate to the Provisional Poisons List and Poisons Rules and the report of the Poisons Board, trade marks, Government patents and the transport of chemicals by road.

IN moving the adoption of the report at the annual meeting, Mr. T. Wallace, who deputised as chairman in the absence of Dr. F. H. Carr, through illness, referred particularly to the manner in which the Government left the chemical section of the Polish Treaty to be worked out between the Association and the Polish Union of Chemical Industries. The importance of industrial reorganisation was stressed, particularly the necessity for further co-operation in regard to research, production and marketing. Commenting on the position of the fine chemical industry, Mr. Wallace said that since the report was written a supplementary memorandum has been submitted to the Key Industries Committee of the Board of Trade, detailing reasons why the manufacturers considered the progressive development of the industry would be better assured by a continuance of the key industry duties than by a transfer to the Import Duties Act.

Roman Yorkshire

As progress is made in the excavation of the Roman villa at Rudston, six miles west of Bridlington in Yorkshire, it affords a more extended view of settled life under what has been termed the 'signal-station' system, which archæological discovery in this area has revealed as a characteristic feature in the organisation of this section of Roman Britain. The site has now been under investigation for three seasons by a local committee in conjunction with the Roman Antiquities Committee of the Yorkshire Archæological Society, the excavation being in charge of Messrs. A. M. Woodward and K. A. Steer. Both coins and types of pottery point to an occupation of considerable duration, the former ranging from Domitian to Valens, and the latter including late first century, Samian, third century types from the Yorkshire pottery at Throlam and 'signal-station' types of the end of the fourth century. A system of pre-Roman ditches below the foundations may go back so far as the Bronze Age. An interesting building to the west of the residential block, discovered in 1934, which measures not less than 50 ft. by 22 ft., is now seen, according to a report of the latest results of excavation (*The Times*, Oct. 22), to have been used for a variety of purposes connected with the needs of the villa. *Tesserae* of sandstone not of local origin, and many chippings of chalk and tile, confirm the view suggested by earlier discoveries of chalk *tesserae* and red and blue tiles that it was a workshop for making and repairing mosaic flooring. Further, remains of no less than six ovens point to other uses not yet completely apparent. An early suggestion that they were part of the equipment for the manufacture of wool or for tanning has now been abandoned in favour of the view that they were for drying or roasting grain preparatory to grinding.

The College of Science, Benares Hindu University

FEW countries are, in proportion to their literate population, so well equipped with modern laboratories as India. The reproach can no longer be levelled at Indian university education that it is purely literary. We need only cite as examples the fine laboratories to be found at the University College of Science, Calcutta, the Presidency College, Madras, and the Royal Institute of Science, Bombay. From the time of its foundation in 1911, the Hindu University at