

### Westinghouse Research Fellowships

THE Westinghouse Electric and Manufacturing Co., of Pittsburgh, Pennsylvania, has established ten 'post-doctorate' fellowships for research in physics, including chemical physics and physical metallurgy, to enable investigators to carry on their work at the Westinghouse Research Laboratories in East Pittsburgh. Five fellows have been appointed for 1938-39, and five more will be appointed in each succeeding year. The objects of the Company in establishing the fellowships are: "(1) To make a worth-while contribution to the development of the fundamental sciences on which modern industry is based. The Company feels that all research leading to a better understanding of the nature of matter and energy will ultimately prove valuable to technology even though its immediate field of application is not apparent. (2) To enable a group of able investigators to become familiar with the scientific problems confronting the electrical industry. It is felt that this contact will be of great value whether the men turn to industrial research or to academic work after completion of their fellowship period." Fellows will devote their entire time to work on their research projects, and will be under the general supervision of Dr. E. U. Condon, associate director for the programme of fundamental research. It is expected that they will also participate actively in the seminars and colloquia held at the Laboratories and in the neighbouring institutions of higher education. Appointments are made for a period of one year and a fellow is eligible for one reappointment for a like period. The salary is 2,400 dollars a year.

THE names of the first five Westinghouse Research Fellows, chosen from fifty applicants, are: Robert O. Haxby, University of Minnesota. Mr. Haxby has been a graduate student in physics for the last four years, and has participated actively in the nuclear physics research in the University of Minnesota. He will join the group which will carry on research in nuclear physics using the large high-voltage generator now being built in East Pittsburgh. John A. Hipple, Princeton University. Mr. Hipple has been a graduate student in physics at Princeton during the past four years, where he has worked with Prof. Walker Bleakney. He will design a large mass-spectrograph of high resolving power for studies in molecular structure in the Westinghouse Laboratories. Sidney Siegel, Columbia University. Dr. Siegel has carried out researches on elastic and magnetic properties of metals under the direction of Prof. S. L. Quimby. He hopes to develop methods of growing single crystals of pure metals and of alloys which show order-disorder transitions to study how the elastic properties of alloys depend on the arrangement of the atoms in the crystal lattice. W. E. Shoupp, University of Illinois. Dr. Shoupp is at present an instructor in physics at the University of Illinois, where he is actively engaged in studies on nuclear physics with the Illinois cyclotron. In addition to his work in nuclear physics, he has made several contributions to extreme ultra-violet spectroscopy as a collaborator of Prof. P. G. Kruger. At

the Westinghouse Laboratories, he will continue studies in nuclear physics, working with Dr. W. H. Wells on the high-voltage generator. W. E. Stephens, California Institute of Technology. Mr. Stephens has done work in nuclear physics in the Kellogg Radiation Laboratory in Pasadena, where he studied the production of neutrons by bombarding boron and nitrogen with high-energy deuterons. He has also worked on the development of a new type of high-voltage discharge tube. In East Pittsburgh he will continue his researches on nuclear physics with the large generator at the Westinghouse Laboratories.

### Bronze Age Hoard from Bognor

A bronze founder's hoard, which is dated at the early part of the first millennium B.C., has been brought to light at Flansham, near Bognor Regis. The find was made at a depth of about four feet at a point in Hoe Lane, a deep and ancient track now a lane, where it was joined by a new drive in course of construction. The objects discovered were distributed among several owners, but have been brought together again to be described by Mr. S. E. Winbolt in *The Times* of May 9. With six bronze implements were twenty-two lumps of copper, weighing 14 lb. Some round pieces of copper indicate a diameter of six inches for the complete cake, which would appear to have been cast in a crucible with a slightly concave bottom. This hoard is evidently the stock-in-trade of a bronze founder, such as has been discovered not infrequently in Britain. Mr. Winbolt recalls that a similar hoard was found in the course of road construction at Bognor some twelve years ago. The implements found with the copper are two socketed and looped celts, with square-mouthed socket openings, cast with a core, two socketed gouges, the top of a V-type sword with rivet holes, and the side of the top of a carp's tongue sword with a very sharp edge, which is compared with those of the Addington (Kent) and Beachy Head deposits. All may be dated at about 1000-750 B.C., and are probably a native product, though showing the influence of Spain and north-west France. It is to be noted that, as usual, there are no traces of tin with the copper. It is suggested that this, as well as the other and slightly earlier Bognor hoard, may have been abandoned or temporarily hidden, on account of the difficulties of a journey arising from the marshy character of the ground in this neighbourhood at the period.

### By-product Coking

ON March 17, G. W. J. Bradley, in a paper presented to the Institute of Fuel, briefly reviewed the history of the coking industry from its inception at the beginning of the eighteenth century to the present day. This development has gradually culminated into a tendency for the industry to split into two sections, the section connected with iron and steel works and regarded as an auxiliary part of steel works technique and the section situated at the collieries. During the years 1934-37 orders have been placed by British steelworks for plants to