

in collected form (Columbus, O.: Ohio State University, Dept. of Physics, 1935, pp. 104, 1 dollar). W. F. G. Swann contributes an account of cosmic rays in which he explains his theory of particles producing secondaries frequently at first and less frequently as they lose energy in penetrating the earth's atmosphere. He also speculates on the origin of the energy of the charged particles. M. L. Pool contributes an article on the energies and products involved in nuclear disintegration and synthesis, which contains a number of extremely useful tables and data on these processes. H. L. Johnston summarises the uses of deuterium as a research tool in physics, chemistry and biology. E. O. Lawrence gives a historical survey of artificial radioactivity and an account of recent work in the California laboratory on this subject. G. Gamow contributes a short article on nuclear transformation and the origin of chemical elements which discusses the astrophysical aspect of nuclear reactions.

Spanish Archaeology and the University of Oxford

AN important addition to the provision for archaeological research in the University of Oxford will be made by the election by Queen's College of a research student in archaeology at some time in June next. The field of research will be Spain, or some part of Spain, and the period under investigation will lie between the earliest Neolithic Age and 200 B.C. The period of tenure will be two years and the stipend £300 per annum. In view of the importance of Spain as a centre of culture, especially in the development of art, in later palaeolithic times, and of the desirability of a clearer understanding of its cultural relations in that and the succeeding mesolithic period, the restriction to the early neolithic period may appear open to comment; but no doubt it was held that these periods are at present sufficiently covered by those already concerned with the prehistoric archaeology of Europe generally, while development of the megalithic culture and the bronze and iron ages offer a no less fruitful and still to some extent uncultivated field to which attention may be directed to greater advantage in present conditions.

Science and Human Welfare

FOLLOWING upon an informal meeting at which persons connected with some fifteen organisations interested in sociological and scientific problems were present, a Research Co-ordination Committee was formed to draw up plans for the co-ordination of scientific research as applied to human welfare. The Committee held its first meeting on January 30 at Morley College, London, and drafted a preliminary list of problems worthy of investigation and a list of organisations that are likely to have material bearing on those problems. As an example may be cited problems arising out of the housing question in connexion with the clearance of slums. Five aspects (architectural, engineering, financial, medical and sociological) have been put down for consideration, and steps are being taken to collect the necessary information. The offices of the Committee are at Hazlitt House, Southampton Buildings, W.C.2.

Chemical Research in Czechoslovakia

THE *Collection of Czechoslovak Chemical Communications* has just completed its seventh volume. This journal continues to record the investigations in pure chemistry carried out at the Universities of Prague and Brno. It is significant that no less than thirteen papers describing polarographic researches with the dropping mercury cathode appeared last year from the laboratory of Prof. J. Heyrovský. Prof. E. Votoček and his co-workers published ten papers dealing with various sugar derivatives and their behaviour with Grignard's reagents and other organic bodies. Another fruitful field of research has been the application of organic reagents for the detection and estimation of metals. This work is being carried out at Brno by Prof. Dubský and his fellow-investigators.

An Active Group of Sunspots

A RECENT group of sunspots, not remarkable for size, complexity or visible changes of structure, has proved of interest on account of its great activity when observed spectroscopically, especially in the hydrogen line C or $H\alpha$ of the solar spectrum. The group consisted of two spots of regular outline, 10° apart in solar longitude, accompanied by two or three wide clusters of small spots, making in all a stream extending over 20° of longitude. The position of the centre of the stream was: long. 164° ; lat. 27° S.; central meridian passage February 14.0, when the spots passed about 20° of latitude south of the centre of the sun's disk. The area of the stream averaged about 800 millionths of the sun's hemisphere or 930 million square miles. Between February 7 and 14 inclusive, the spots were examined as often as possible with the Hale spectrohelioscope at the Royal Observatory, Greenwich, for a total duration of 16 hours on six days, usually before 13^h U.T. During these hours of watching, equivalent to about one-ninth of the total duration of the epoch, eight bright eruptions of hydrogen were observed, so that a considerable number of eruptions is indicated by this sampling as having taken place in connexion with the spots.

Most of the eruptions were of minor importance, but on February 14 one of appreciable extent, and involving large radial velocities of accompanying dark clouds of hydrogen, was fortunately observed in its entirety. This eruption, which occurred within a few degrees of longitude from the central meridian, began within a minute or two of 12^h 39^m and lasted until 13^h 27^m U.T. Besides the streaks of bright emission, which at their maximum intensity were about equal to that of the continuous spectrum adjacent to $H\alpha$, a dense cloud of relatively dark hydrogen was moving outwards from the sun with a maximum observed velocity of 210 km./sec. Within ten minutes, other dark patches or filaments were visible with velocities of recession, showing that the ejected hydrogen was to a large extent falling back towards the sun, and by 13^h 03^m when the outward motions had ceased, the measured inward velocities were of the order of