

cap and chain, and for gnomon a gold pin surmounted by a delicately chased animal head, with jewelled eyes and a ball in its mouth. This pin, when not in use, rested in a hole at the lower end of the tablet, and was in this position when the time-piece was found. On the faces of the tablet are inscribed the names of the months, abbreviated and in pairs. At the top of each of the three columns is a hole for the pin when in use, and below each hole two spots. Of these the higher in each month, when the dial hangs free, indicates noon and the lower 9 a.m. and 3 p.m. marking the hours of the monks' services. Along the edges runs the inscription: *Pax Possessori—Salus Factori*. The dial has been tested for accuracy by Dr. A. H. Smith of University College, London. The grouping of the months in pairs according to their equivalent distances from the summer solstice is based, it is to be presumed, on the table given by Bedo for measuring the shadow of a six-foot gnomon. Dr. Smith finds that owing to its small size, the dial could only be approximately accurate. It would, however, be more or less correct at noon in latitude 53° N. at the middle of certain months, or early in others, while in the far north of England it would be more or less accurate through the summer months. At 9 a.m. and 3 p.m. it would be more or less accurate in late January, mid-February, mid-March, early April, early May, late July, mid-September, early October, early November and early December.

Anglo-Saxon Ship Burial

SHIP BURIALS are of sufficient rarity, even on the Continent, for the discovery of an Anglo-Saxon ship burial at Sutton Hoo, near Ipswich (*The Times*, July 26, July 31) to be regarded as a memorable and, indeed, remarkable event. This is, in fact, only the second of the kind to be found in England, a previous discovery, though of a rather less impressive character, having been made at Snape, two miles away. In the present instance, the vessel in which the interment had taken place was a rowing galley 82 ft. long. The quantity and character of the jewellery and other personal objects associated with the burial were such as to justify the assumption that a chief lay buried here. The personal relics were found collected together in the centre of the ship, and included a handsome gold buckle, clasps and fastenings of the garments, gold studs from a belt, and small plaques of gold bearing figures of human beings and animals. The sword had been laid by the side of the body; but it has almost entirely perished, with the exception of the richly ornamented gold and jewelled pommel. The deceased had also been provided with money, the remains of a purse being found beside some coins. Other articles found with the burial were iron pots and spearheads, and an object which has the appearance of a sceptre, having faces carved at either end. A metal cup may, it is thought, have contained some articles of symbolic significance. The grave is situated on the estate of Mrs. E. M. Pretty, and has been excavated by the authorities of the Ipswich Museum, under the field direction of Mr. Guy Maynard, with the co-operation of H.M. Office of Works and the British Museum.

Lightning Flashes and High Tension Mains

DURING July there were many violent thunderstorms and much damage was done to overhead electric mains and substations connected with them. The damage done to main stations was also severe. On July 19, a violent thunderstorm cut off Valley Road Power Station at Bradford from the Grid and shut down all the generating sets there. For about an hour, mills, factories, trams and trolley-buses on many routes came to a standstill; the traffic lights failed and there was no light anywhere for about an hour. A similar occurrence took place at the Brighton Power House at Southwick. In both cases the difficulties of the staff were increased as they were engaged in changing over on the Grid supply from 6.6 kilovolt to 33 kilovolt. There was a heavy storm over Cumberland and the overhead transmission was struck. This affected the supply to more than 30,000 houses in Cocker-mouth, Maryport, Aspatria and Wigton as well as part of Workington, the lights being out from 3.15 p.m. to 8.30 p.m. On July 19, at 8 p.m., the B.B.C. National Transmitter at Droitwich was struck by lightning and put out of action. The flashes striking the 700-ft. masts of the Radio Station were extremely violent. Flames shot from the cage of aerial wires slung between the masts. In some places transformers or switchgear were damaged and three fires broke out, destroying substation roofs or walls. Since thunderstorms are less frequent in Great Britain than in South Africa and other parts of the world it might be useful to study the effects of modern lightning protectors in protecting poles, steel towers, overhead mains, etc., in places where thunderstorms are frequent and violent. Also when designing new grids or extensions of old ones to get estimates of the relative costs of overhead mains and of underground mains. A decision could then be arrived at as to which is the better method of transmitting high-tension electric power.

Empire Broadcasts on Scientific Topics

THE British Broadcasting Corporation has instituted a short series of quarter-hour broadcasts to the Empire on recent advances in science. The first talk of the series was given at 11.15 p.m. on July 31 by Prof. Allan Ferguson, one of the general secretaries of the British Association. Prof. Ferguson, after giving a simple picture of the structure of the atom, and the results to be expected from atomic bombardment, described briefly the development of the cyclotron, recent experiments on nuclear disintegration, including the uranium-fission experiments, and the production of 'labelled' particles. Succeeding talks will be given by Wing-Commander Cave-Browne-Cave on mechanical engineering (August 7), by Dr. S. J. F. Philpott on psychology (August 14) and by Prof. F. A. E. Crew on biology (August 21).

League of Nations

"The League from Year to Year (1938)", which has recently been issued by the Information Section of the Secretariat of the League of Nations, contains the usual concise account of the year's activities in

sufficient detail to facilitate careful study of the political, legal and technical work of the various organs of the League of Nations. (Geneva: League of Nations; London: George Allen and Unwin, Ltd., 1939. Pp. 214. 1s.). Of special interest to scientific workers are the chapters on intellectual co-operation, the health organization, the communications and transit organization and those on the European conference on rural life and technical collaboration with China. A chapter dealing with refugees is included as well as one on mandates. The detailed chronological table of the principal events in the League's sphere of activity during the year, giving the dates of the meetings of the different organs of the League and of their principal decisions, as well as of world political events affecting the League's work introduced last year for the first time is again a feature of the new edition.

The Colonial Problem

THE proposals of the Labour and Peace movements for dealing with the colonial question are examined in a pamphlet "New Tendencies in Colonial Policy" issued by the Pacifist Research Bureau (New Tendencies in Colonial Policy. With an Introduction by Leonard Barnes. Pp. 16. London: Pacifist Research Bureau, 1939. 2d.). It is argued that there are only two alternatives: an extended and re-arranged imperialism with new rival imperialisms of greater equality and an ultimate clash between them; or the removal of existing imperialisms and their substitution by a great conception of civilization's responsibility for the so-called uncivilized, with an equally great conception of world economic organization. The necessity of conforming to the wishes, or, at least, obtaining the consent of the native peoples in all matters affecting their welfare is also emphasized, including the application of this principle not only to the mandated territories but also in other colonial questions. The problem is further discussed in another pamphlet issued by the Bureau, "War and the Colonies" (War and the Colonies: a Policy for Socialists and Pacifists. Pp. 16. London: Pacifist Research Bureau, 1939. 2d.), in which proposals for a world conference to effect the liquidation of imperialism are briefly outlined.

Language in Science

THE general considerations of linguistics which throw light upon the procedure of science are discussed by L. Bloomfield in the fourth number of volume one of the "International Encyclopedia of Unified Science" (Linguistic Aspects of Science. By Leonard Bloomfield. Pp. viii+60. (Chicago: University of Chicago Press; London: Cambridge University Press, 1939.) 5s. net.). If language is taken into account, science can be distinguished from other phases of human activity by agreeing that science shall deal only with events that are accessible in their time and place to any and all observers or only with events that are placed in co-ordinates of time and space, or that science shall employ only such initial statements and pre-

dictions as lead to definite handling operations or only terms such as are derivable by strict definition from a set of everyday terms concerning physical happenings.

IT is the task of science to provide a system of responses which are independent of the habits of any person or community, but Mr. Bloomfield points out how far short we are of accurate definition in regard to meanings which are involved in the habits of communities and individuals, since the relevant branches of science are quite undeveloped. Discussing the development of scientific language, he distinguishes between the informal and formal scientific discourse, and emphasizes the importance of defining exactly the meaning of technical terms and limiting their use within the agreements upon which they are based. When meanings of the outside world are admitted, error may be incurred and certainty is lost. With regard to the place of linguistics in the scheme of science Mr. Bloomfield places it between biology and ethnology, sociology and psychology. It stands between physical and cultural anthropology. It is closely related to logic, since it observes how people conduct a certain type of discourse. The critique and theory of scientific speech is the task of logic. Mathematics, however, is a science only so long as we believe that the mathematician is not creating speech-forms and discourses (which is a skill, craft, or art) but exploring an unknown realm of concepts or ideas.

Library Services in the United States

UNDER the title "Professional Library Education" the Office of Education, United States Department of the Interior, has issued a bulletin by Nora E. Beust (*Bull.* No. 23; 1937) describing the present position of library services in the United States and indicating the possibilities it offers as a career, and the qualifications required for the various fields of service. Much that is said of the different types of library such as the public library, the school, the university or the special library is true generally, and if due allowance is made for the different conditions and details in the United States, this pamphlet gives a reasonably sound guide to the possibilities in Great Britain also, even if some directions have been much more developed in the United States. Details regarding training for librarianship, like the figures showing the present status of the profession, relate solely to the United States and attention is directed to a marked growth in the number of librarians in the last three decades, particularly in comparison with the number of practitioners in other professions. Some reasons for success and failure in library work which are set forth in conclusion are of general validity.

The Society of Applied Biologists

PRIOR to the year 1904 there was no scientific society or journal in the United Kingdom devoted to applied biology. There was, moreover, little opportunity or encouragement for research in this field, and the work of the universities and other