

by fissures in which houses have disappeared, and are blocked by avalanches which have fallen from the ravines. Father Gherzi estimates the loss of life at more than 40,000, by no means a large figure for an earthquake of this character. Probably the real number will never be known, as it is a custom in this district for families to live in caves hollowed out in the loess along the river-sides, which in many cases were blocked by the fall of avalanches.

The isoseismal 4, which forms the boundary of the known disturbed area, is incomplete towards the west. Its mean radius, in the portion drawn, is about a thousand miles. Thus the disturbed area probably contains more than three million square miles, and is perhaps not much inferior in extent to the whole of Europe. At the present time the largest disturbed areas known to us are those of the Assam earthquake of 1897 (about  $1\frac{1}{4}$  million square miles), the Kangra earthquake of 1905 (nearly 2 million square miles), and the Charleston earthquake of 1886 (about 2,800,000 square miles). The last area is, however, bounded by an isoseismal line of intensity 2. If the corresponding isoseismal could have been drawn for the Chinese earthquake, the figure given above for its disturbed area would have to be multiplied several times. In any case it is clear that we are dealing with a shock which, if not the greatest, is certainly one of the greatest, known to us since earthquakes began to be studied.

Since the foregoing was written, a report by a small party of foreign travellers has appeared in the *Times* of June 4. Though the travellers were unable to examine the whole of the central region, they state that the shock was felt principally within an area of 15,000 square miles, bounded approximately by the parallels of  $35^\circ$  and  $37^\circ$  and the meridians of  $105^\circ$  and  $107^\circ$ , thus agreeing with the result deduced from Father Gherzi's map. The loss of life, however, is estimated at a far higher figure than that given above. "The prefectural Taoyin of Pingliang puts the total loss of life at 180,000, or one-third of the whole population; 30,000 perished at Kuyuan. Haicheng appears to have been almost completely buried by the surrounding hills tumbling in upon it, about 70,000 people being entombed." Such a total has but rarely been approached, and only twice, I believe, surpassed. The number of deaths due to the Messina earthquake of 1908 cannot fall far short of 100,000. In the Indian earthquake of 893 180,000 persons are said to have perished; in the Japanese earthquake of 1703, 290,000; and in the Indian earthquake of 1737 the reported number rises to a maximum of 300,000.

### Stereochemistry.

AT the seventh Indian Science Congress Prof. B. K. Singh, who presided over the chemistry section, delivered an address on "Recent Advances in Stereochemistry," which has since been published in pamphlet form.

After reviewing the early development of the subject by Pasteur, the theory of the asymmetric carbon of van't Hoff and Le Bel, and the later researches on asymmetric nitrogen, sulphur, and selenium by Pope, Peachey, and others, Prof. Singh proceeds to discuss the more obscure relations subsisting between the amount of rotation and the constitution of the active substances. In this connection he touched on the work of Pickard and Kenyon, the main outcome of whose researches was to indicate a sudden rise of rotation produced at the end of a chain of five or a multiple of five carbon atoms—a phenomenon which was explained by the proximity of the first and fifth

carbon atoms in the chain. Reference was also made to the work of H. O. Jones on the activity of quaternary ammonium bases containing different radicals and certain generalisations which followed. The influence of conjugation, as illustrated by the work of Rupe, and the abnormally high rotations produced in the derivatives of amino-camphor were also reviewed. This was followed by a reference to the relation of optical activity to position isomerism, with a discussion of Frankland's theory.

Prof. Singh, who has himself contributed certain observations on the subject, comes to the conclusion that neither Frankland's theory nor what he terms "Cohen's rule" accords with the facts; but omits to point out that both his own and Frankland's observations are made with dissolved substances in which the solvent may, and frequently does, modify the rotation, whereas Cohen and his co-workers purposely avoided the use of any solvent. Finally, the address dealt with those mysterious changes of rotation known as "the Walden inversion," which are effected by certain reagents, when one constituent of an asymmetric group undergoes replacement. The earlier theories based upon change of structure due to the reagent have since been shown to be untenable in the light of the work of Senter and Drew, who find that with the same reagent different solvents may produce a similar inversion.

J. B. C.

### University and Educational Intelligence.

BIRMINGHAM.—At the meeting of the Council of the University held on Wednesday, June 1, Mr. Walter H. Moberly was appointed to the chair of philosophy to succeed Prof. J. H. Muirhead, who is retiring from the chair in September next. Mr. Moberly is dean, fellow, and tutor of Lincoln College, Oxford, and one of the best known of the younger teachers of political and social philosophy in the Philosophy and History School of that University. His experience of municipal administration as a member of the Oxford City Council and his work with the Workers' Educational Association should contribute to make him a fitting successor to Prof. J. H. Muirhead.

Dr. H. J. W. Tillyard has been appointed to the chair of Russian, and Signorina L. P. di Castelveccchio to the Serena chair of Italian. Dr. Tillyard is the first occupant of the chair of Russian in the University—a chair founded on the fund collected for the purpose by the Birmingham Chamber of Commerce. Signorina di Castelveccchio is the first professor of Italian to occupy the chair founded on a generous benefaction from Mr. Arthur Serena and on funds collected by the Birmingham Chamber of Commerce. She is the first woman to be appointed to a chair in the University.

The Council has also appointed Mr. E. H. F. Mills, fellow of St. John's College, Cambridge, and secretary of the University Library, Cambridge, to the office of librarian which will shortly be vacant by the retirement of Mr. W. H. Cope.

CAMBRIDGE.—Dr. G. E. Moore, Trinity College, and Mr. W. E. Johnson, King's College, have been re-elected University lecturers in moral science, and Mr. F. Debenham, Gonville and Caius College, has been re-elected University lecturer in surveying and cartography. Mr. J. A. Venn, Trinity College, has been nominated Gilbey lecturer in the history and economics of agriculture. Mr. J. C. Wallace has been elected a junior fellow of Emmanuel College.

Miss F. E. Haines has been elected to a scientific fellowship at Girton College, and Miss M. T. Budden to an associates' fellowship in mathematics at Newnham College.

It is proposed to appoint a committee of nine to manage the low-temperature station, for research in biochemistry and biophysics, which is nearing completion. Five members of the committee are to be nominated by the council of the Senate and four by the Department of Scientific and Industrial Research.

The Syndicate to consider possible alterations affecting the Mathematical and Natural Sciences Tripos is to consist of Dr. Fitzpatrick, Sir Joseph Thomson, Prof. H. F. Baker, Sir Ernest Rutherford, and Messrs. W. B. Hardy, A. Hutchinson, W. H. Mills, J. Barcroft, J. F. Cameron, A. Wood, C. G. Darwin, R. H. Fowler, and G. P. Thomson.

Dr. H. Hartridge, King's College, has been appointed senior demonstrator in physiology.

Owing to the continued difficulties of railway travelling, the vote on the admission of women to membership of the University or to titular degrees has been postponed from June 16 to October 20.

The Arnold Gerstenberg studentship will be awarded to the science student of proper standing who writes the best essay on one of the following six subjects:—The Ultimate Data of Physics, Philosophical Aspects of the Theory of Relativity, Mechanical Explanation and the Problems of Biology, The Theory of an "Elan Vital" and Related Conceptions, Heredity and Memory, Instinct and Intelligence.

MANCHESTER.—Dr. Harold Robinson, senior lecturer in physics and assistant director of the physical laboratories, has resigned his appointment as from September 29 next.

The following have been recommended for the degree of Doctor of Science:—Frederick William Attack, William Broadhurst Brierley, Colin Campbell, Robert George Fargher, William Harold Pearsall, and Henry Smith Holden.

IN connection with the department of coal gas and fuel industries of Leeds University a Corbet-Woodall scholarship in gas engineering is being offered. It is of the annual value of 60*l.*, and tenable for three years, with the possible extension to a fourth. Full particulars can be obtained from the registrar of the University. The latest date for receiving applications for the scholarship is June 15.

SUMMER schools for practical work in open-air geography, geology, botany, and allied sciences will be held under the auspices of the Geographical Association at Chamonix (July 28–August 11) and in Snowdonia (August 13–27). The original glacial researches of De Saussure, Forbes, and Tyndall will be retraced in the Chamonix district, and, similarly, Ramsay's work on the ancient glaciers of North Wales will be studied in Snowdonia. Particulars of the arrangements may be obtained by sending a stamped addressed envelope to Mr. H. Valentine Davis, "Noddfa," Wistaston, Crewe.

THE Bulletin of the National Research Council for March (vol. ii., part 1, No. 9) contains a classified statement compiled by the Research Information Service of the funds available in 1920 in the United States for the encouragement of scientific research. The publication falls into seven sections, of which the first is introductory, and sections ii. to vi. contain lists of the medals, prizes, fellowships, etc., in connection with which specific mention is made of research. In section ii. the various medals and prizes are brought together; section iii. deals with grants for research; section iv. with institution funds for research; and section v. with the fellowships and scholarships available for research workers. In every case reference is made to the awarding body, the nature of the research for which the award is made, the frequency of award,

and usually the monetary value. Section vi. consists of an index to the subjects in which funds for research are available; while section vii. forms an index to the various institutions which make awards and to the funds from which grants for research are allotted. A truly remarkable amount of information from widely scattered sources is thus brought together conveniently in a single publication.

THE programme of the Summer School of Civics, to be held this year at Guildford, Surrey, from July 30 to August 13, offers opportunities for good all-round social study. The courses of lectures to be given fall into three groups. In the first come those on geography, descriptive economics, primitive and present-day institutions, and anthropology; through these the student will be given a condensed view of community life at the present day. In the second group are the courses which develop a theory of community life, *e.g.* those on social biology, psychology, philosophy, etc. In the third group come the courses on the principles and practice of civics, social education, public administration, and economic problems. A special course for teachers on modern developments in education will also be given. Informal discussions will be, as formerly, a great feature of the school's work, and there will be exhibitions of civics, rustic surveys, housing and town-planning schemes, and excursions in Guildford and the neighbourhood. Mr. A. Farquharson will be responsible for the general direction of the school, and a number of well-known lecturers have offered their services. The inaugural lecture will be given by Prof. Patrick Geddes, professor of sociology and civics in the University of Bombay, and special lectures on psycho-analysis are being given by Miss Barbara Low. Full particulars of the school may be obtained from Miss Margaret Tatton, secretary, Civic Education League, Leplay House, 65 Belgrave Road, Westminster, S.W.1.

ONE of the prime features of the Education Act of 1918 was that establishing day continuation schools for young persons entering upon employment at fourteen years of age. Immediate provision was to be made by the various local education authorities for education during working hours for such young persons for seven or eight hours weekly for forty weeks of each of two following years. Many large firms in the North of England, chiefly textile and engineering, took advantage of the provision so made and established for their own employees classes of a liberal character during working hours. Some education authorities, of which Manchester is a notable example, also established facilities for continued day education. The London County Council was one of the very few authorities which adopted the Act, and the Board of Education thereupon named an appointed day in the terms of the Act. The Education Committee of the L.C.C., among its other activities, made large provision for the means of continued day education, which received a gratifying response. It is therefore a matter of much surprise that the Education Committee of the Council resolved on May 9, and confirmed at a meeting held on June 1, that the Council's interim scheme adopted on May 4 of last year be amended so as to provide for the continued day education of employed young persons up to 15 years of age only. The reason given for this decision is that the cost of continued education for two years under the Act is too great in face of the growing unwillingness of the people to pay increased rates. Apart from the serious injury to the young persons concerned, it is a proposal of very doubtful legality, and it is to be hoped that the recommendation to the Council, which was carried by a majority of only one, will be summarily rejected.