

as an experienced examiner at home and overseas, he has made many important contributions not only to original knowledge but also to the structure and organisation of medical, dental and veterinary science and education. During both World Wars his skill in physiological experiment found valuable full-time application to chemical warfare and personnel research. But Starling's laboratory and Starling's inspiration, as he would proudly acknowledge, have made University College his real home. He and Mrs. Lovatt Evans will be sorely missed.

Lovatt Evans is a physiologist of the kind, now becoming rare, with a wide and critical knowledge of the whole field of human physiology. An excellent chairman and lecturer, a wise and understanding colleague with familiar contacts with physiologists the world over, his help and advice have been sought, and will continue to be sought, by those who have problems to solve, gaps of knowledge to make good or posts to fill. One of his most important services to physiology has been in keeping alive and up to date Starling's "Principles of Human Physiology", an immense and continuing labour to which he has added the authorship or editorship of other books and monographs. The admirable performance of this task depended on, and perhaps added to, the breadth of his knowledge. Lovatt Evans, although retiring this year, is young in mind and activity, and physiologists will expect him to continue as busy as ever in the service of physiology.

Lovatt Evans's own original work has been largely concerned with the circulatory system: heart, lungs, blood, oxidation, frequently with a bias towards the metabolic and chemical side (his early love was chemistry). But among a wide range of interests are also numbered liver function, sugar metabolism, blood pH, lactic acid, adrenalin, etc. A suggestion he once made, probably forgotten by him, based on his knowledge of plain muscle, fired off an important train of research on the function of potassium in striated muscle and thence in non-medullated nerve. Some of the best things start, apparently casually, by suggestions of that kind, and Lovatt Evans's wide knowledge must have been responsible for many; his pupils and his friends owe much to him and them.

Dr. G. L. Brown, C.B.E., F.R.S.

DR. G. L. BROWN, who has been appointed to succeed Prof. Lovatt Evans, has been a member of the scientific staff of the Medical Research Council for the last fourteen years. Dr. Brown was a student at the University of Manchester, where he graduated in medicine in 1927, having taken a higher degree in physiology during his course of study. He left Manchester to become demonstrator and later lecturer in physiology under the late Prof. McSwiney at Leeds, where his researches were concerned with the motor innervation of the stomach. When Dr. Brown went to the National Institute for Medical Research in 1934, he joined in the programme of work in Sir Henry Dale's laboratory on the chemical transmission of nerve impulses; to this work he made major contributions, especially in connexion with the role of acetylcholine in the conduction of impulses through sympathetic ganglia and from motor nerves to skeletal muscle. Since then he has much extended his researches in neurophysiology with full application and development of modern electrical methods; the results of his work are important not only for their scientific interest but also for their clinical

applications. During the Second World War, Dr. Brown gave distinguished service, as secretary of the Royal Naval Personnel Research Committee, both by organising and directly stimulating researches on conditions affecting the efficiency of naval personnel. The chair at University College will thus be occupied by a man who has established himself as a leader in physiology, and who will undoubtedly uphold the great traditions of the Laboratory of which he will have charge.

Prof. Solly Zuckerman, C.B., F.R.S.

THE Lord President of the Council has announced that Prof. Solly Zuckerman, a member of the Advisory Council on Scientific Policy and of the Committee on Industrial Productivity, has been appointed deputy chairman of both bodies. The appointment, it is stated, will help to relieve the burden on the chairman, Sir Henry Tizard, who is also chairman of the Defence Research Policy Committee. Prof. Zuckerman will continue as chairman of the panel on imports and as professor of anatomy in the University of Birmingham.

Operational Research in Industry

IN reply to a question asked in the House of Commons on January 19 on operational research in industry, the Lord President of the Council, Mr. Herbert Morrison, stated that it is the policy of the Government "to encourage all scientific activities which contribute to increasing the productivity and efficiency of industry. Operational research . . . is a term given in the recent war to the use of the scientific method for obtaining data on which executive decisions can be based. It has been employed by progressive firms in many industries for a number of years; . . . there is certainly room for more of it. I have had a full report on its possibilities from a Panel of the Committee on Industrial Productivity. Several of the co-operative research associations, in particular the Cotton Research Association, the Iron and Steel Research Association and the Boot, Shoe and Allied Trades Research Association are doing well with it; and with the general expansion of facilities since the War, other research associations are already carrying out, or are planning, similar work." Mr. Morrison added that the Departments concerned will extend every encouragement to firms anxious to develop operational research within their respective organisations.

Submarine Geology: New French Annual

OCEANOGRAPHERS, who have long had good cause to be grateful to two well-known American institutions for their volume of "Collected Reprints" distributed each year, will welcome the recent institution of a comparable practice in France. It is manifestly impossible for individuals, and practicable only for a few major libraries, to maintain subscriptions and exchanges adequate to ensure the receipt of anything like all the important oceanographical papers which appear in the course of a year; a serious difficulty resides, of course, in the fact that so many organs of publication are concerned. This latter point is evident on scanning a new volume just received, *Travaux du Laboratoire de Géologie Sous-Marine*, vol. 1 (1947). This is produced by the École Pratique des Hautes Études, 1 Rue Victor-Cousin, Paris 5<sup>e</sup>, under the superintendence of the director, Jacques Bourcart. It contains fifteen papers; five are by Dr. Bourcart himself, of which

three are on the sediments of the French continental shelf, one on sedimentation in the English Channel, and the other on the geology of the 'Iles Atlantides'. A paper by B. Brajnikov on the origin of the alluvial deposits of the Seine estuary is followed by a series of three by Prof. A. Cailleux, of which one discusses criteria for distinguishing between marine and fluvial gravels. Dr. Claude Francis-Bœuf, who is the author of five of the remaining papers, is well known for papers already published on the processes involved in estuarial sedimentation—a topic of great present-day importance. He discusses the physico-chemical factors of estuarial waters in connexion with the tropisms which affect eel migrations; sedimentation in estuaries; the oxygen content of fluvio-marine muds, and the production and consumption of oxygen in the topmost surface layer of the latter. The last paper, by V. Romanovsky, is on the elasticity of agar-agar gels. All the papers included are reprints from various publications; the practice of issuing annual fascicules of reprints in special branches of study is very valuable to those directly interested.

#### International Committee on Nomenclature of Ocean Bottom Features

THE International Union of Geodesy and Geophysics re-established, at its Oslo meeting in August 1948, an International Committee on the Nomenclature of Ocean Bottom Features under the chairmanship of Dr. J. D. H. Wiseman, British Museum (Natural History). The other members of this Committee are: Vice-Admiral J. D. Nares (*secretary*), International Hydrographic Bureau, Monaco; Dr. K. C. Emery, United States; Prof. H. H. Hess, United States; Prof. Hans Pettersson, Sweden; and Prof. Ph. Kuenen, Holland. The terms of reference of the Committee are: "To endeavour to establish in co-operation with the chart-making authorities, mechanisms for the International agreement on the nomenclature of submarine topographical features, as well as considering methods of presentation of marine topographical data on bathymetrical charts".

In order to facilitate the work of this International Committee, a British National Committee has been established under the chairmanship of Dr. J. D. H. Wiseman, with the following members: Mr. C. D. Ovey (*secretary*), British Museum (Natural History); Dr. J. N. Carruthers, Admiralty; Dr. L. H. N. Cooper, Marine Biological Association of Great Britain, Plymouth; Mr. H. F. P. Herdman, "Discovery" Investigations; Prof. W. B. R. King, Sedgwick Museum, Cambridge; Lieut.-Colonel R. B. Seymour Sewell, Zoological Laboratory, Cambridge; and Mr. J. A. Steers, president of St. Catharine's College, Cambridge. Early consideration will be given by this Committee to the various physiographical features found at the bottom of the oceans, and at a later stage to nomenclature and the presentation of data on bathymetrical charts. The British Committee would welcome and carefully consider any individual contributions or suggestion, which should be addressed to its secretary, Mr. C. D. Ovey, British Museum (Natural History), Cromwell Road, London, S.W.7.

#### Maternal Mortality in India

INQUIRIES into the causes of maternal mortality in Bombay, Calcutta, Delhi and Madras show that the data published in the reports of public health departments are unreliable and do not give an accurate picture of the real situation. These inquiries have

been collated by Dr. S. Pandit in a report of the Indian Research Fund Association (No. 17; June 1948), and show that figures obtained by special investigations are considerably in excess of the numbers recorded in the public health reports. According to the reports of the executive health officer of Bombay, for example, the maternal mortality-rate for the year 1937 was 4.4 per 1,000 live births, whereas the rate determined by Dr. J. Jhirad for the same period was 13.5 per 1,000 live births. A clearer picture of the incidence of maternal mortality and of the causes responsible for it could be obtained only when a better system of recording all vital occurrences and of certification of the causes of death become widely established throughout India.

A statistical review of the figures collected during the investigations emphasizes the need for developing health services for prenatal care, adequate domiciliary and institutional midwifery services and close co-operation among the different agencies responsible for them. The reports recommend provision of facilities for institutional treatment for abnormal midwifery and puerperal sepsis cases. It is suggested that medical men and midwives in maternity services should have knowledge of preventive aspects of maternal care and, wherever possible, services of health visitors should be employed for educational and follow-up work. As anaemia forms one of the main causes of maternal deaths in India, its diagnosis and early treatment during pregnancy is of vital importance, and special attention should be paid to this condition. To improve the maternal health programme a service providing correct information on maternal deaths should be maintained and research into all aspects of maternal health should be conducted.

#### Fertility of Scottish Women

THE widely held belief that decline in fertility among women is directly related to the degree of urbanization which has taken place in a community is not borne out by investigations which have been made by R. K. Barclay and W. O. Kermack (*Proc. Roy. Soc. Edin.*, Section B, 43, Part 11, No. 9). Surveys of the trends of fertility in various sections of the population of Scotland from 1860 onwards, they give special attention to the comparison of urban and rural areas. Difficulties in assembling the statistics arose because of the alterations introduced from time to time in the basis of classification used by the Registrar-General; but these were overcome in various ways. The areas investigated were the four chief cities, Glasgow, Edinburgh, Dundee and Aberdeen, and two groups of counties, one typical of the Highlands (Sutherland, Ross and Cromarty, Inverness and Nairn), and the other typical of the Borders (Peebles, Selkirk, Roxburgh and Berwick).

The results show that the fall in fertility in Scotland set in at about the same time in both urban and rural areas and, broadly speaking, the trends have run closely parallel in these two sections of the community. The fall in the urban section was neither earlier nor more rapid than that in the rural section. Other interesting findings are that the trend of legitimate fertility in the Border group of four counties contrasts strikingly with the trend in the Highland group, the fall in fertility in the former having set in earlier and proceeded more rapidly, while the fall in legitimate fertility in Aberdeen appears to have set in about twenty years later than in the other three large cities of Scotland.