science in the School may be reckoned to commence from this date. On Hall's retirement in 1869, he was succeeded by Henry Durham, who had joined the staff with Isaac Scarf in the previous year. These two gave yeoman service to the School and did not retire until 1910 and 1919 respectively. They taught throughout a period when science underwent revolutionary changes, and the development of science teaching in the School kept pace accordingly. In 1869 Dr. Abbott, the headmaster, introduced science throughout the curriculum, and his successor, Mr. Pollard, founded the science side in 1892; the jubilee of the teaching of science was marked in 1897 with the Hall Memorial Scholarship. Durham was succeeded by G. C. Donington as senior science master, but the latter died soon afterwards and was replaced by G. H. J. Adlam, who died recently. In 1927 the new science laboratories were opened by the Lord Mayor of London, and they consisted of advanced and elementary laboratories, a chemistry lecture room, a balance room and a room for the science staff; soon afterwards, in 1929, a biological laboratory was completed. A further biological laboratory and a museum were added in 1937, and in 1946 the balance room was converted to an advanced physics lecture room.

The centenary of the teaching of science fell in 1947 and was celebrated at the Great Hall of the School on the afternoon of November 6 this year. There was a large gathering of officials of the Corporation, the Schools Committee, the School staff, parents, and past and present pupils, and the chief guest was the Lord Mayor and Lady Mayoress of London. The headmaster, Mr. F. R. Dale, reminded his audience that, on inspecting some laboratories, a predecessor of his, Dr. Abbott, had once said, "You and I know that this is not education". The Lord Mayor made a short address, and was followed by Sir Harold Scott, lately director of the Bureau of Hygiene and Tropical Diseases, who was himself an old pupil of the School. Various demonstrations and exhibits had been arranged in the School laboratories.

Chemistry and Chemical Technology at University College, Dublin

Mr. Michael Tierney, president of University College, Dublin, recently opened in the College a new laboratory for the teaching of chemical technology. Prof. T. S. Wheeler explained that this new laboratory would be known as the Nolan Laboratory in remembrance of the late Prof. T. J. Nolan, whose untimely death had prevented him putting into operation plans he had formulated for the teaching of chemical technology in the College. Mr. Tierney also opened a laboratory for final years honours chemistry, which will be known as the Ryan Laboratory, in remembrance of the late Prof. Hugh Ryan, the first professor of chemistry in University College, Dublin.

Bioluminescence

In connexion with Dr. V. B. Wigglesworth's article on bioluminescence in *Nature* of September 11, p. 423, Mr. K. B. Williamson, c/o Manson House, 26 Portland Place, London, W.1, has recalled observations made by him while he was malaria research officer in Malaya some years ago. A dytiscid beetle which fell about three feet off the laboratory bench on to the floor of the old Malaria Bureau, Kuala Lumpur, displayed a unique type of bioluminescence. The beetle appeared to emit bright flashes of white light, three or four at a time, from its eyes. The fluorescent type of bioluminescence is invisible even in weak light; but these flashes were conspicuous in competition with the light from a fairly bright electric bulb on the laboratory bench. The groups of flashes were repeated several times within half an hour, when the beetle was again dropped from the same height; but never afterwards, when the dropping was repeated during the subsequent months it was kept alive. In sharp contrast to another *Dytiscus*, it failed to capture any mosquito larvæ or pupæ during these months, and it not improbably died of starvation; and may have been blinded by destruction of retinal pigment and damage to the cells producing it. Mr. Williamson tentatively suggests that the flashes from the beetle's eyes were caused by reversal of the normal process of vision, energy in the form of light having been emitted instead of being absorbed by retinal pigment, as the result of intermittent outwardly directed nervous impulses, due to shock.

Earthquakes during July and August

During July, nineteen strong earthquakes occurred in various parts of the world, the strongest being of instrumental scale 7¼ and occurring off the south-west coast of Peru on July 20. It had a depth of focus of 100 km. Two earthquakes on July 16 radiating from a focus having an epicentre near the coast of Guatemala and having strengths 6¼ and 6¾ were felt in Guatemala and San Salvador. The only earthquakes to do damage during the month occurred on July 20, damaging buildings on Coiba Island.

During August, twenty-four strong earthquakes occurred in various parts of the world. The strongest occurred on August 25 in the Salta Province of Argentina and attained scale 7¼. During the month there was also rather more activity than usual along the south European seismic zone, earthquakes occurring on August 10 in the region of Alasehir in Turkey; on August 12, 13 and 15 near Oporto in Portugal; on August 18 near Sivrice in Turkey, and at Apulia in south Italy; on August 21, destructive at Orda Nova in south Italy; on August 22 in Portugal and Italy; and on August 27 in the region of Skadar, Albania. On August 30 there was also a repetition of an earthquake which occurred on July 8 in a rather unusual area—near Jan Mayen Island.

Group reports have been received from the United States Coast and Geodetic Survey, the central station at Strasbourg, the Jesuit seismological central station at St. Louis, United States, and individual station reports have been received from Beograd, Cleveland (Ohio), De Bilt, Durham, Kew, Stuttgart, Toledo and Uccle.

Polytetrafluoroethylene

The outstanding stability of fluorinated hydrocarbons has been fully exploited in the field of high polymers. The preparation and polymerization of tetrafluoroethylene was described some two years ago (*Ind. Eng. Chem.*, 870; 1946). The polymer (P.T.F.E.) is an excellent dielectric (power factor = 0·0002 over a wide frequency-range) and it is resistant to all common solvents up to 300° C. Molten alkali metals alone have any appreciable attack. In its strength, however, lies its greatest weakness. Form stability is retained up to 250° C., and even at higher temperatures there is no true softening; thus moulding and fabrication present major obstacles. Progress in overcoming this difficulty has, however, been made by Messrs. British Mechanical Productions,

Ltd., 21 Bruton Street, London, W.1, who recently exhibited in London examples of moulded valve-holders and other components in polytetrafluoroethylene.

Pure Science and Industrial Development

In an address, "Pure Science, Fertile Source of Industrial Progress", on receiving from the Société pour l'Encouragement de l'Industrie Nationale the medal of the Grand Prix du Marquis d'Argenteuil for 1947, Prof. L. de Broglie gave a brilliant review of the contribution of research in fundamental physics to the progress of industry, in which he referred particularly to the achievements of such French physicists as D. Papin, S. Carnot, Ampère and M. Deprez. He also pleaded for the vigorous prosecution both of the investigation of the laws of Nature without reference to their application, and of industrial and technical research directed towards the utilization of scientific knowledge for the improvement of human welfare. Prof. de Broglie drew his illustrations from the fields of heat, electricity, wave mechanics, relativity and nuclear physics, indicating how discoveries and investigations which have appeared incredibly remote from practical life have yet in due course made most important contributions to industrial progress.

Sugar Research Foundation Prize

Entries are invited for the 1949 fourth intermediate prize award of 5,000 dollars offered by the Sugar Research Foundation. The award will be given for discoveries in the chemistry, physiology or technological application of carbohydrates which contribute to an understanding of the functions of sugar (sucrose) or to its practical utilization. The first of these awards (1946) was made to Drs. W. Z. Hassid, M. Doudoroff and H. A. Barker, of the University of California, Berkeley, for research leading to the enzymatic synthesis of sucrose; the second (1947) went to Dr. Carl F. Cori, professor of biochemistry, Washington University, St. Louis, Missouri, for research on problems of carbohydrate metabolism in the animal body; the third (1948) to Dr. Leslie F. Wiggins, University of Birmingham, for chemical studies of the sucrose molecule and transformations which may make sucrose a valuable raw material in the chemical industries. Winners of these intermediate annual awards are eligible for the Grand Prize of 25,000 dollars to be given in 1950 for the most important work during the five preceding years. Further particulars can be obtained from the Executive Secretary, National Science Fund, National Academy of Sciences, 2101 Constitution Avenue, N.W., Washington 25, D.C., to whom entries must be submitted by January 1, 1949.

Beilby Memorial Awards

From the interest derived from the invested capital of the Sir George Beilby Memorial Fund, at intervals to be determined by the administrators representing the Royal Institute of Chemistry, the Society of Chemical Industry, and the Institute of Metals, awards are made to British investigators in science to mark appreciation of records of distinguished work. Preference is given to investigations relating to the special interests of Sir George Beilby, including problems connected with fuel economy, chemical engineering and metallurgy, and awards are made generally to younger men who have done original independent work of exceptional merit over a period of years. The administrators—the presidents, honorary treasurers and secretaries of the three participating institutions—will be glad to have their attention directed to outstanding work of the nature indicated, not later than December 31, 1948. Communications should be addressed to the Convener, Sir George Beilby Memorial Fund, Royal Institute of Chemistry, 30 Russell Square, London, W.C.1.

"Changing Aspects of Nutrition"

An article under this title in *Nature*, October 2, pp. 543 and 544, dealt with the proceedings of a discussion on September 9 in Section I (Physiology) of the British Association. In the report of Dr. J. W. Howie's contribution, reference is made to a "protein rice concentrate"; this should read "protein-rich concentrate". Ewes fed this concentrate as a supplement to pasture grazing showed, over a period of two years observation, no difference in fæces worm-egg counts from similar ewes grazed on the same pasture but not fed concentrate. Lambs born of the ewes and fed the same diet as their mothers, however, showed a marked difference in worm burden during a year's observation, the lambs given concentrate having significantly fewer worm eggs in the fæces. The account of Dr. Howie's second experiment, in which diet was shown to influence the resistance of mice to experimental tuberculosis, may have suggested that the higher protein in the better diet was established as the cause of the superior resistance. Dr. Howie wishes to make it clear that he has not yet examined this possibility, and that other important differences between the diets must be taken into account.

Announcements

The Meldola Medal is the gift of the Society of Maccabæans and is normally awarded annually. The next award will be made early in 1949 to the chemist who, being a British subject and less than thirty years of age on December 31, 1948, shows the most promise, as indicated by his or her published chemical work brought to the notice of the Council of the Royal Institute of Chemistry before December 31, 1948. Communications should be addressed to the President, Royal Institute of Chemistry, 30 Russell Square, London, W.C.1, the envelope being marked "Meldola Medal".

A symposium on the "Applications of Electronics to Research and Industry" has been arranged by the Electronics Group of the Scientific Instrument Manufacturers' Association. It will be held at the Caxton Hall, London, during November 18 and 19.

A fund for the encouragement of the gliding and soaring movement is being raised as a tribute to the late Robert Kronfeld, who was killed while testing a tailless glider early this year. A committee has been formed to make the appeal and receive subscriptions, which should be sent to Mr. Lawrence Wingfield, c/o Royal Aeronautical Society, 4 Hamilton Place, W.1, marked Kronfeld Memorial Fund.

A half-yearly list of botanical papers printed in India, Pakistan, Burma, Ceylon, Siam, Malaya and Indonesia will be published by the Botanical Society of Bengal in the Society's *Bulletin* issued in April and October every year. Authors are requested to send their reprints to the Honorary Secretary, Botanical Society of Bengal, 35 Ballygunge Circular Road, Calcutta 13.