

decayed to insignificance. A modification in estimating the potassium only was to add a known excess of potassium carbonate carrier to the irradiated sample and, precipitating a known fraction of the total potassium as the dipicrylamine, this salt was then radiometrically assayed separately. These methods have been used successfully on a routine basis for the determination of weights of the order of 0.5 $\mu\text{gm.}$ of sodium and 5 $\mu\text{gm.}$ of potassium in biological samples. The results indicate that as little as 0.05 $\mu\text{gm.}$ of sodium can be estimated to within a few per cent, so that the potentialities of the method in chemical analysis are obvious.

It would not be appropriate to record here more than a few points raised in the ensuing discussion. R. C. Chirnside asked if the decomposition of the penicillins noted during the paper chromatography of the labelled material minimizes the value of the Goodall and Levi method; Dr. Lester Smith replied that, unless the relative decomposition of the individual penicillins was unequal, the value of the original method would not be affected because it was used to show the proportional composition of the penicillin mixture rather than the individual weights. J. Haslam asked if the method of radioactivation analysis can be applied to the determination of iodine in sea water, to which Mr. Smales replied that the relatively short half-life of the iodine-128 produced by neutron activation of natural iodine makes the determination very difficult, since any separation and counting would have to be completed within a matter of two or three hours of removing the sample from the pile; however, Mr. Smales mentioned that the determination of a range of trace elements in water by radioactivation analysis is, in fact, being investigated. A. C. Mason wondered if the methods could be used for the determination of boron in plant material—a difficult problem in chemical analysis—and Mr. Smales replied that boron unfortunately gives rise to no suitable isotope on neutron irradiation. Other items discussed ranged from the particular advantages to be expected as a result of combining radioactive tracer techniques with paper chromatography to the use of radioactivation analysis for the detection of arsenic in poisoned victims.

F. P. W. WINTERINGHAM

UNIVERSITY OF GLASGOW FIFTH CENTENARY CELEBRATIONS

ON the evening of June 29, the last of a series of 'At Homes' in the Bute Hall at the University brought the celebrations of the fifth centenary of the University of Glasgow to a close. They began almost a fortnight before with the arrival on June 17 and 18 of nearly two hundred delegates representing universities and other learned bodies in all parts of the world, and of many other distinguished scholars invited to receive honorary degrees.

On the afternoon of Monday, June 18, the guests were welcomed informally at faculty receptions in the College Rooms and Queen Margaret Union, and renewed or established friendships which were strengthened by the academic and social functions of the ensuing days. That evening many guests attended the first McEwen Memorial Concert in the Hunter Hall.

On Tuesday, June 19, a very full programme began with the presentation of addresses in the Bute Hall, when delegates, representatives and graduands from

at home and abroad were welcomed by the Chancellor, Lord Boyd-Orr. Before a full assemblage of the Senatus, academic staff and honorary doctors of the University, the guests bringing messages of greeting were called in turn and handed their greetings to the Chancellor. More than two hundred such messages were presented, all graciously worded and many of them beautifully illustrated. They have been on display to the public, together with many other addresses received by post, in the Upper Library throughout the period of the celebrations, and have attracted many visitors.

One of the most colourful and impressive ceremonies took place on the Tuesday afternoon when, in robed processions, delegates, graduands and the Chancellor, Court and Senate of the University went in bright sunshine from the Royal Infirmary to the Commemoration Service in Glasgow Cathedral, the first home of the University congregations five hundred years ago. The whole of the Cathedral quire was filled with the academic gathering, while wives and friends occupied the nave, an assemblage in all of some 1,200. The sermon was preached by the Minister of Glasgow, and others officiating were the Principal, the Professor of Divinity, the Clerk of the Senate, the Moderator of the General Assembly of the Church of Scotland and the University Chaplain. The music was played by the Professor of Music.

On Tuesday evening some eight hundred guests were entertained to dinner in two gatherings, one at the Central Hotel presided over by the Chancellor, and the other at the adjacent Grosvenor Restaurant where the chairman was the Rector. It was a happy circumstance that the Prime Minister, who was to receive the next day the honorary degree of Doctor of Laws, and Mrs. Attlee arrived in time to be present. Among the speakers were the Lord Justice General, the President of the University of California, the Lord Bishop of Durham, Sir Oliver Franks, the Principal of McGill University, Prof. F. L. Ganshof, of the University of Ghent, Prof. J. M. Holst, of the University of Oslo, and Prof. M. Le Breton, of the University of Paris.

The mornings of June 20 and 21 were reserved for the two major academic functions, the honorary graduation ceremony and the commemoration oration by Lord Macmillan of Aberfeldy respectively. For these functions some 2,700 persons assembled on each occasion in St. Andrew's Hall, almost half of them in academic robes. The colourful splendour on each occasion was perhaps unprecedented in the history of the University or of the city.

At the graduation ceremony twelve honorary degrees of Doctor of Divinity and fifty-four of Doctor of Laws were conferred. Among those receiving the degree of LL.D. were the following: Prof. E. D. Adrian, professor of physiology in the University of Cambridge; Prof. A. C. Aitken, professor of mathematics in the University of Edinburgh; The Right Hon. C. R. Attlee, Prime Minister; Sir John Beazley, professor of archaeology in the University of Oxford; Prof. Niels Bohr, professor of theoretical physics in the University of Copenhagen; Sir John Cockcroft, director of the Atomic Energy Research Establishment, Harwell; Sir John Craig, steelmaker in Glasgow; Dr. H. W. Dodds, president of Princeton University; Dr. R. Dohrn, director of the Zoological Station at Naples; Dr. P. J. Du Toit, president of the South African Council for Scientific and Industrial Research; Prof. T. G. Halle, professor of palaeobotany in the University of Stock-

holm; Prof. B. A. Houssay, formerly professor of physiology in the University of Buenos Aires; Prof. F. H. Knight, professor of social sciences in the University of Chicago; Prof. H. R. Kruyt, formerly professor of physical chemistry in the University of Utrecht; Prof. E. O. Lawrence, professor of physics in the University of California; N. A. MacR. MacKenzie, president of the University of British Columbia; Sir Arcot Mudaliar, vice-chancellor of the University of Madras; Prof. J. Ortega y Gasset, formerly professor of philosophy in the University of Madrid; Lord Reith of Stonehaven; Prof. D. S. Russell, professor of pathology in the University of London; Prof. L. S. Ruzicka, professor of organic chemistry in the Swiss Federal Institute of Technology; Prof. René Sand, professor of social medicine in the University of Brussels; Prof. G. G. Simpson, professor of vertebrate palaeontology in Columbia University; Prof. Norman Kemp Smith, formerly professor of logic and metaphysics in the University of Edinburgh; Prof. J. G. Sölch, professor of geography in the University of Vienna; Sir Richard Southwell, formerly rector of the Imperial College of Science and Technology, University of London; Prof. S. Timoshenko, professor of mechanics in Stanford University; Prof. O. Veblen, formerly professor of mathematics in the Institute for Advanced Study at Princeton; Prof. C. E. Weatherburn, professor of mathematics in the University of Western Australia; and Prof. G. H. Whipple, professor of pathology in the University of Rochester. The speakers on behalf of the new graduates were the Bishop of Strängnäs, Lord Reith, the president of Princeton University and the president of the University of British Columbia. The new and past doctors and their wives were afterwards entertained to luncheon in the Bute Hall by the Chancellor, Court and Senate, when replies to the toast of "The New Graduates" were made by Prof. C. H. Dodd, of Cambridge, and Prof. L. S. Ruzicka, of the Swiss Federal Institute of Technology.

The Wednesday programme was completed by two happy social functions at which Town and Gown mingled, an afternoon reception at the Trades House by the Deacon-Convener of the Trades of Glasgow and the Collector of the Trades House, and a reception in the evening at the City Chambers by the Lord Provost and Magistrates.

At the opening of the Oration Ceremony on June 12, the Chancellor expressed the regret of all that Their Majesties the King and Queen were unable to grace the gathering with their presence, and the Principal read an address from the University to the King and a gracious message from His Majesty. Lord Macmillan then delivered the Commemoration Oration, an eloquent tribute to the past achievements of the University and expression of the ideals which should guide its future. The conclusion of this ceremony, the last of the academic functions of the celebrations, was most fittingly the maiden speech of the Prime Minister as a doctor of the University of Glasgow. More than two thousand guests attended a reception at the University on the Thursday afternoon. In the evening, while their wives were the guests of Lady Hetherington at an 'at home' in the College Rooms, the delegates and new graduates were entertained to dinner by the Senate in the Grosvenor Restaurant. Robes and formalities were laid aside. The Principal presided and the speakers at the dinner included the Vice-Chancellors of the Universities of Cambridge and London, Dr. H. R.

Kruyt of the Universities of Utrecht and Amsterdam, and Dr. B. Blanshard of Yale University.

On June 22, a precedent was followed that had been created fifty years before (almost to the day) on the occasion of the ninth jubilee, when the University took its guests for a cruise on the Firth of Clyde. As in 1901, it was a day of midsummer sunshine and the Firth a panorama of mellow beauty. The *Queen Mary II* sailed in the morning with eight hundred guests from Bridge Wharf in the centre of the city past the shipyards and Dunbarton Rock and cruised in the Kyles of Bute, Loch Striven and Loch Riddon, returning round the Cumbræes to Wemyss Bay, whence the journey to Glasgow in the evening was made by train. On the morning of June 23, some 150 guests who still remained were taken by coach to Loch Lomond.

The following week was reserved for gatherings of Glasgow's own graduates, and more than three thousand members of the General Council and their wives were entertained in the Bute Hall on June 25, 27, 28 and 29.

J. B. NELSON

AMERICAN PHYSICAL SOCIETY ANNUAL MEETING

THE 1951 annual meeting of the American Physical Society was held at Columbia University, New York City, during February 1-3. The annual meeting of the American Association of Physics Teachers took place simultaneously at Barnard College. At the joint session of the two bodies on February 2, the retiring presidential address of the Physical Society was delivered by Prof. I. I. Rabi, who took as his subject "Molecular Beam Researches in Nuclear and Electronic Physics"; the Oersted Medal of the Association was presented to Prof. J. W. Hornbeck (who died on February 27); and the tenth Richtmyer Memorial Lecture was delivered by Prof. J. C. Slater, who spoke on "The Electron Theory of Metals". The after-dinner speaker at the banquet in the evening was Prof. J. R. Oppenheimer, who spoke principally about meson theory.

At the business meeting of the Physical Society the following officers were elected: *President*, C. C. Lauritsen; *Vice-President*, J. H. Van Vleck; *Secretary*, K. K. Darrow; *Treasurer*, G. B. Pegram; *Managing Editor*, S. A. Goudsmit. The headquarters of the *Physical Review* have now been removed from the University of Minnesota, which housed them for the past quarter of a century, to the Brookhaven National Laboratory.

Twenty-eight invited papers, in addition to two hundred and ninety-one (a new record) ten-minute papers, were contributed to the meeting of the Physical Society. The invited papers included: a group of papers describing the Brookhaven National Laboratory and the research work carried on there; various papers on nuclear physics, including one by C. C. Lauritsen on the work on nuclear energy-levels at the California Institute of Technology; four papers mainly concerned with mesons; in the division of electron physics, J. A. Hornbeck on a review of positive-ion mobilities in the noble gases; in the division of fluid dynamics, E. Teller on magneto-hydrodynamics and G. Birkhoff on some modern problems in classical hydrodynamics; J. Bardeen on supraconductivity and lattice vibrations, and two contributions by English visitors, S. Chap-