

Current Topics and Events.

THE history of the discovery of insulin occupies an almost unique place in the scientific literature of recent times, and in the supplement which accompanies this issue we print an account of the present position of investigations regarding this substance. So many investigators had previously been within an ace of making its discovery that, as Prof. MacLean says, "it still remains a mystery why insulin was not isolated many years ago." The discovery is a good illustration of two salient facts bearing on scientific research work: first, that a very slight modification of a technique which had led previous explorers to failure might lead one to success; secondly, that research work of an applied nature, such as the search for a cure for diabetes, is very closely dependent upon related investigations which belong more properly to the domain of academic science—in this instance the improvement of methods for the accurate determination of small quantities of glucose in the blood. Insulin as now placed on the market is a therapeutically trustworthy preparation, and there must be many persons who owe life and health to the careful administration of this substance. But we must not be too sanguine that a diabetic taking insulin is to be regarded as a normal person. Prof. MacLean's article also contains a warning which it is to be hoped will be taken seriously to heart: careful investigation has shown that no beneficial results ensue from taking any pancreas preparation by the mouth, and this also applies to insulin itself, which is speedily destroyed by the juices present in the alimentary canal. From the academic point of view, insulin presents many problems of absorbing interest. At present the chief of these is the problem of what happens to the blood sugar and to glycogen after the administration of insulin: both apparently disappear, yet no intermediary or end products have yet been traced. Lastly, it cannot be too strongly emphasised that the discovery, from start to finish, could not have been made without those experiments on living dogs which some would seek to have abolished.

WHY it should have been left to Sir Douglas McGarel Hogg, Sir William Bull, and Sir Malcolm Macnachten to bring in "a Bill to confer certain powers on the Trustees of the British Museum," we have been unable to ascertain; nor can we discover whether the idea arose in the minds of those gentlemen spontaneously, or whether the seed was sown by some such body as the Museums Association. The Bill is, in brief, to empower the Trustees, under certain conditions, to lend for public exhibition in any gallery or museum controlled by a public authority in Great Britain, specimens falling under the graphic arts, jewelry, and "objects of art in gold, silver, bronze or crystal,"—a sufficiently curious selection. It proposes, therefore, an extension of the openings already made in the foundation Act of 26 George II., by which all objects entering the Museum were to "remain . . . to all Posterity." The Trustees have already obtained power to exchange, sell, or dispose of (7 & 47 George III.), as also to give away (41 &

42 Vict.), duplicate objects "not required for the purposes of the Museum"; but they have not as yet the power to lend. We do not know that they want it. If they are given it, we may rely on them to exercise it with due discretion. The British Museum is a storehouse to which there come by thousands inquirers from the uttermost ends of the earth. Such a student must not arrive in London to find that, of the objects he wishes to compare, one has been sent to Aberdeen and another to Penzance. There can never be any advantage in encouraging the British Museum to emulate the admirable Circulating Department of the Victoria and Albert Museum.

IN the *Times* of June 26 there was a somewhat sensational paragraph entitled "New anti-tuberculosis vaccine." It was stated that Prof. Calmette of the Pasteur Institute had, with various collaborators, discovered a new tuberculosis preventive. The further contents of the paragraph show that in its essence the discovery is not altogether new and has in part, at any rate, been referred to on more than one occasion, and most recently in the *Annales de l'Institut Pasteur* (xxxviii., 1924, p. 371). Calmette's vaccine is a living culture of tubercle bacilli which has been grown on a potato medium containing bile and glycerin for thirteen years. During this period it has become avirulent and is incapable of producing tuberculosis. It is claimed, however, that it is capable of establishing an immunity against virulent tubercle bacilli, and particularly so when injected into calves shortly after birth. The protection afforded by the avirulent bacilli lasts for more than a year. It is believed that the same results may be obtained in infants, and some work in this direction is briefly referred to in the *Times* paragraph.

IN NATURE of May 10, p. 685, we published a note on the alleged discovery of the long-sought virus of foot-and-mouth disease by Profs. Frosch and Dahmen of Berlin. From the reputation of these workers and their statement of experiments we were inclined to regard the discovery as correct, and this now appears to be so. In an article in the *Lancet* of June 28 considerable details are given of a lecture delivered by Dahmen and Frosch at Utrecht, and it is therein stated that a committee of six experts, including such well-known investigators as Titze, Giese, Kleine, and Gins, have been able to confirm the statements of Frosch and Dahmen, and that with subcultures of the virus in the sixth and twenty-sixth generation they had succeeded in reproducing the disease. On the assumption that the virus of foot-and-mouth disease has been discovered, it has been assumed by some that a royal road has been opened up for the prevention of the disease, but it is perhaps scarcely necessary to point out that this is not a corollary, for the establishment of immunity may not take place in spite of the presence of the virus.

THE annual conversazione of the Institution of Electrical Engineers held at the Natural History Museum, South Kensington, on Thursday, June 26,

was one of the most notable of a long series of annual functions in pleasant surroundings, due to the fact that it was held on the hundredth anniversary of the birth of Lord Kelvin, and formed a part of the group of centenary celebrations being held this summer in scientific and engineering circles, and to include, as we have already announced, the Kelvin Centenary Oration by Sir J. J. Thomson on July 10 and the Kelvin Centenary Banquet on the following day. A large company was received by the president, Dr. Alexander Russell, and Mrs. Russell and members of the Council of the Institution, and an excellent programme of vocal and instrumental music, in which Miss Phyllis Carey Foster took part, was provided in the Reptile Gallery, while the string band of the Royal Engineers performed in the Central Hall. Many distinguished engineers were present, and there must have been many there who remembered Lord Kelvin's regular attendance at these conversazioni in his later years.

It is of interest at the present time to recall that Lord Kelvin, Sir George Stokes, and Prof. Huxley were elected fellows of the Royal Society in the same year and on the same day, namely, June 5, 1851. Each of this brilliant triumvirate lived to receive the honour of the presidency, in 1883, 1885, and 1890 respectively. The certificate of candidature of Lord Kelvin (William Thomson) was signed by Michael Faraday, John Couch Adams, and Adam Sedgwick, the distinguished Woodwardian professor of geology in the University of Cambridge. In retrospect, the support of Sedgwick is especially interesting since we know, through Sir Archibald Geikie, that from the year 1844 onwards for some eighteen years Lord Kelvin watched with increasing impatience the spread of the doctrines of the Uniformitarian School in geology, and at length, in 1862, "broke silence on the subject, declaring the doctrines of that school to be opposed to physical laws." It was one of the accepted tenets of the Uniformitarian School that the range of past time available for the explanation of the phenomena of geology was unlimited; but by arguments drawn from the origin and age of the sun's heat, the internal heat and rate of cooling of the earth, and the tidal retardation of the earth's rotation, Lord Kelvin fixed limits to the possible age of our planet. These have, of course, more recently been disputed. Lord Kelvin was always most punctilious in correspondence. Following the onerous engagements incidental to the celebration of his professional jubilee at Glasgow in 1896, he occupied himself on the way to London in writing autograph acknowledgments of the congratulation of friends. Not a few of his distinctive shorter papers were composed during railway journeys between Glasgow and London. In fact, wherever there was motion he found an atmosphere of calm, the hum of machinery acting as a mental stimulus. Mention may be made here that Lord Kelvin's portrait, by Orchardson, hangs in the Royal Society's meeting-room, the gift of a circle of fellows.

A TORNADO of hurricane strength swept over a fifty-mile stretch of the southern shore of Lake Erie

in the afternoon of Saturday, June 28. According to the correspondent of the *Times*, three hundred persons are believed to have perished at Lorain, and the number of persons injured in the devastated track is estimated to be 2500. Many buildings are completely wrecked at Lorain, and in parts of the town it is reported that not a house was left standing. The principal destruction and damage occurred between Sandusky and Cleveland, and fear is entertained for some small passenger steamers plying on the Lake. The report states that the full extent of the damage will not be known for days. Earlier in the day, much havoc is said to have been caused by storms in the Upper Mississippi Valley. At Peoria, Illinois, hundreds of houses were unroofed and damage is reported from other places. The U.S. Weather Bureau will without doubt give details of the tornado. In the past, many such storms have been dealt with, notably by Finley and Ferrel.

IN view of some criticisms that have been made in Canada concerning Dr. V. Stefansson's recent geographical discoveries in the Arctic, attention may be directed to an article in the *Geographical Journal* for June. The Royal Geographical Society, on receiving from Mr. J. White, technical adviser to the Ministry of Justice, a detailed statement of the criticisms, submitted these to a searching examination by an impartial authority. All relevant original documents were consulted, including blue books of the various Franklin search expeditions, Sverdrup's charts of the adjoining regions, and Dr. Stefansson's own charts. A lengthy reply to Mr. White's letter, illustrated with charts, is published. Each point is examined in great detail, and the conclusions reached may be taken as final. They completely exonerate Dr. Stefansson of the charges that his discoveries of new land were anticipated by previous explorers, with the sole exception that Loughheed Island may have been sighted by Richards in 1853, but there was no suggestion of a land mass of the size of the island charted by Dr. Stefansson. The extensive islands now called Brock and Borden Islands were never suspected to exist. The Royal Geographical Society has done a service to polar exploration in disposing of these criticisms and establishing the validity of Dr. Stefansson's claims.

IN our issue of June 16, 1923, p. 818, reference was made to the formation of a committee to collect funds in order to commemorate the late Prof. A. D. Waller and Mrs. Waller. We understand that the fund has now reached a total of 1820*l.* and that a meeting of subscribers, probably a final one, will be held on July 5 at 5 P.M. at the London (R.F.H.) School of Medicine for Women. It will be remembered that the fund is to be used for the promotion of scientific research and is to be administered by the council of the London (R.F.H.) School of Medicine, with which Prof. Waller and Mrs. Waller were associated for many years. It is hoped that the fund will reach 2000*l.* by the time of the meeting on July 5, and that it will then be possible to discuss the final form of the memorial.

THE staff of the Bombay Department of Agriculture interested in research into botanical and genetical problems has grown very considerably of recent years, and on April 14-16 the plant breeders of the Department held a conference in the Botanical Laboratories of the College of Agriculture, Poona, under the presidency of Dr. W. Burns, Economic Botanist to the Government of Bombay. An introductory address by Dr. H. H. Mann emphasised the need of attacking problems of economic interest in a truly scientific manner, and the subsequent proceedings of the conference, when methods of testing the performance of varieties of crop plants of economic importance were rigorously examined in the light of modern knowledge of statistical, botanical, and agricultural technique, suggest that Dr. Mann was preaching to the converted. Some forty specialists gathered at the conference, which was convened at short notice; they were drawn from the fifteen workers in the Government Plant-breeding Department, the five men working under the Sassoon David Trust, the Indian Cotton Committee investigators, and the staffs of the Economic Botanist and the Horticulturist. The conference also utilised the occasion to examine the experimental and demonstration plots conducted by the Poona College of Agriculture, of which Dr. Burns is Principal. At the close the conference recommended to the Director of Agriculture that such a conference should be held annually, and that next year it should meet in Surat.

THE influence of Joseph Leidy on science forms the subject of three interesting addresses delivered in December last at the Academy of Natural Science of Philadelphia and published in the *Scientific Monthly*, April 1924. The veteran Dr. Edward S. Morse said that in the midst of the rush for the description of new species, Leidy pursued his researches on the habits and anatomical details of creatures ranging from the protozoa to mammals, and his profound knowledge of the osteology of mammals enabled him to lay with a master hand the foundation for the palaeontology of the reptiles and mammals of North America. Nearly a third of his published memoirs, extending over a period of forty years (1848-88), are on this subject. Prof. W. B. Scott reminded his audience that Leidy throughout his life was primarily interested in human anatomy and that he remained, almost to his death, professor of human anatomy in the Medical School of the University of Pennsylvania. Prof. Scott paid generous tribute to the value of Leidy's work in palaeontology and geology. He stated that Leidy was the first to show that there were native horses and rhinoceroses in America, and he also found the first American camel. Prof. H. S. Jennings pointed out that Leidy seems to have attempted and carried out to a remarkable degree of success the project of forming for himself, and communicating partly to others, a detailed picture of the living world in relation to the environment. He was the better enabled to do this because of his artistic aptitude; indeed his work is largely a portrayal of Nature as seen by a thorough scientific artist, of

which his great memoir on the fresh-water rhizopods is an outstanding example.

WE learn from *Science* that Prof. J. C. McLennan, of the University of Toronto, has been elected president of the Royal Society of Canada.

THE Agricultural and Horticultural Research Station of the University of Bristol will be open to visitors on July 15, when the experimental work in progress will be demonstrated by the staff.

MR. E. E. AUSTEN has been appointed deputy keeper in the Department of Entomology of the British Museum (Natural History), South Kensington.

THE Franklin Institute of the State of Pennsylvania for the Promotion of the Mechanic Arts was incorporated on March 30, 1824. The centenary, therefore, falls due this year, and will be celebrated on September 17-19.

APPLICATIONS are invited for two assistantships at the Solar Observatory of the Commonwealth of Australia. They should be sent to reach the High Commissioner for Australia, Australia House, Strand, W.C.2, by, at latest, July 31. Further particulars are obtainable upon request.

MR. E. R. D. MACLAGAN has been appointed by the President of the Board of Education to succeed Sir Cecil Harcourt Smith, who will retire from the position of Director and Secretary of the Victoria and Albert Museum in September next. Mr. MacLagan has been deputy keeper of the Department of Architecture and Sculpture in the Museum since 1921.

THE Imperial Botanical Conference opens at the Imperial College of Science and Technology, South Kensington, on July 7, under the presidency of Sir David Prain. A large number of overseas and British botanists have signified their intention of attending the Conference, for which an attractive programme has been arranged.

THE Safety in Mines Research Board is in need of the services of a number of abstractors—men or women—able to make rapid and accurate translations (abstract or full) from German and French scientific publications. Applications for the posts, giving full particulars of qualifications, etc., should be addressed to the Under Secretary for Mines, Mines Department, Dean Stanley Street, S.W.1, not later than July 19.

A GOVERNMENT chemist is required for service in Fiji, largely in connexion with the agricultural department. Candidates should, if possible, be University graduates; they must be associates and fellows of the Institute of Chemistry, and have had experience of the work of a public analyst. Requests for forms of application and for further particulars should be addressed in writing to the Private Secretary (Appointments), Colonial Office, Downing Street, S.W.1.

A DECIMAL-METRIC Conference has been arranged by the Decimal Association and will be held on July 9 in the house of the Institution of Electrical Engineers. The subjects to be discussed are decimal coinage,

with special reference to the ten-penny shilling, and piecemeal proposals for introducing metric weights and measures. Among the speakers will be Sir Robert Horne, Sir Robert Hadfield, Sir Napier Shaw, Mr. Harold Cox, Mr. Gordon Selfridge and Mr. Felix Blakemore. A number of chambers of commerce and other public bodies in the Dominions Overseas are sending delegates, and representatives from the United States will also be present. In connexion with the Conference a visit to the National Physical Laboratory, Teddington, has been arranged for July 10.

At a meeting of the Botanical Society of Edinburgh, to be held at the Royal Botanic Garden, Edinburgh, on July 17 and 18, demonstrations and communications on various aspects of vegetative plant propagation are to be given. At the morning sessions of the meeting, numerous illustrations of the methods and results of propagation from stem, leaf, and root, will be presented, while the afternoon sessions will be devoted to the reading of papers and to a general discussion of the exhibits. The following papers will be read: (1) The propagation of clematis, by Miss Edith Philip Smith; (2) on cuttings of camphor, by Miss Oona Reid; (3) horizontal branch propagation, and (4) root cuttings, by Mr. L. B. Stewart; (5) propagation by bulb scales, by Dr. R. J. D. Graham.

Our Astronomical Column.

EYEPieces USED BY SIR WILLIAM HERSCHEL.—It is well known that Sir William Herschel stated that at times he used eyepieces giving magnifying powers in the neighbourhood of 6000. The eyepieces themselves seem to have been lost sight of after his death, and considerable scepticism as to the reality of these powers was expressed by subsequent writers. But recently, Dr. W. H. Steavenson, who was making by request a thorough examination of the Herschel instruments at Slough, found the eyepieces in question, and measured their powers with a dynamometer. He found values agreeing within 10 per cent. of those stated by Herschel, the highest power being well over 6000. This was naturally a single lens, $\frac{1}{8}$ inch in diameter. From a highly enlarged photograph the lens was seen to be not a natural spherical drop, but carefully figured. The curves were hyperbolæ rather than circles, and the two sides were not quite symmetrical, but Dr. Steavenson found that he could get fair definition on a portion of Saturn: the diameter of the well-defined region was only 26", so that it must have been excessively difficult to keep objects in the field without equatorial mounting. It is satisfactory that Sir William Herschel's accuracy of statement is once more vindicated.

MINOR PLANETS.—The observation of these bodies, which was greatly interrupted by the War, is now once more in full swing. Several interesting objects have been detected in recent months. *Astr. Nach.* No. 5293 contains a study of the special perturbations by Jupiter and Mars of 132 Aethra, by Mr. C. J. Merfield, of Melbourne Observatory. He gives osculating elements for the oppositions of 1924, 1925, 1926, together with an accurate ephemeris for the next few weeks. This body was found by Watson in 1873, and was then lost for fifty years, being recovered in December 1922.

Astr. Nach. No. 5292 contains some observations of Eros made at Berlin-Babelsberg last autumn, its magnitude being 9.6. The planet afterwards went

THE Egyptian Government Almanac for 1924 (Cairo: Government Publications Office, 1924; price 10 P.T.) maintains the high standard of usefulness of former editions. It contains a good deal of statistical matter, but aims rather at being explanatory and descriptive. Matters of scientific interest include some papers on the geographical features of Egypt and a useful article on the Nile, its tributaries and water supply. There are notes on the survey of Egypt, the antiquities department and the physical department, including a summary of meteorological data. The section on agriculture and industries is particularly full.

MESSRS. H. SOTHERAN AND CO., 140 Strand, W.C.2, and 43 Piccadilly, W.1, have just issued No. 789 of their "Price Current of Literature," being No. 3, Pt. 4, of their "Catalogue of Science and Technology," and comprising the titles and bibliographic details of some hundreds of books relating to physics, many of which are rare and of great interest and importance. A valuable list of works by, and respecting, Sir Isaac Newton is included. The catalogue should appeal to all students of physics.

ERRATUM.—In announcing the award of a Research Prize of 1000 dollars to Dr. Mary Evelyn Laing in *NATURE* of June 28, p. 935, it should have been stated that the award referred to is the Ellen Richards Research Prize for 1924.

southward, and its observation was continued at Johannesburg. Dr. Witt, its discoverer, is engaged on a careful study of its perturbations, in order to predict the conditions of its near approach to the earth in January 1931. These recent observations will be very useful, as the planet was fairly near the earth.

The last assignment of numbers to recently discovered planets extended to No. 995. As many have been discovered since, the next numbering, in a few months' time, will undoubtedly extend beyond 1000. It should be noted that the number of those known to exist, but not all observed sufficiently for definite numeration, passed 1000 several years ago.

REPORT OF THE CAPE OBSERVATORY.—Dr. H. Spencer Jones, recently appointed H.M. Astronomer at the Cape, has just issued his first annual report. Besides the usual meridian observations, heliometer comparisons of the major planets with neighbouring stars are being made regularly. These have a considerably smaller probable error than meridian places, so will ultimately be very useful for improving the tables of these bodies.

Stellar spectrographs have been taken with the Victoria telescope for the measurement of radial velocities. Many plates have also been taken for proper motions both with this telescope and the astrographic: they are examined by Dr. Innes with the blink micrometer. Messrs. Long and Skjellerup, two voluntary observers, used the small equatorials for the study of 60 variable stars, obtaining more than 140 observations.

Dr. Halm is continuing his studies on stellar masses and luminosities. He suspects that the masses are grouped round the values 6.5, 3.3, 1.6, 0.8, in terms of the sun; they appear to form a geometrical progression. Further details are promised shortly.

Wireless time-signals for the use of ships are sent from the Observatory to Slangkop, where they are automatically distributed.