

of the University of Pennsylvania. The rooms assigned to the various sections of the association and to the affiliated societies are indicated below:

*General Meetings.*—The opening session on Wednesday morning and the brief daily session at 10 A.M. will be held in the Chapel, College Hall.

*Council Room.*—The council will meet daily, at 9 A.M., in the auditorium of Houston Hall.

*Permanent Secretary.*—The office of the permanent secretary will be located on the first floor of Houston Hall. Here will be found post office, registration, and railroad certificate facilities.

*Section A, Mathematics and Astronomy.*—College Hall.

*Section B, Physics.*—Morgan Laboratory of Physics.

*Section C, Chemistry.*—Harrison Laboratory of Chemistry.

*Section D, Mechanical Science and Engineering.*—Mechanical Engineering Building.

*Section E, Geology and Geography.*—Geological Laboratory, College Hall.

*Section F, Zoology.*—Laboratory of Physiology and Pathology.

*Section G, Botany.*—Biological Hall.

*Section H, Anthropology.*—Museum of Science and Art.

*Section I, Social and Economic Science.*—Logan Hall.

*Section K, Physiology and Experimental Medicine.*—Laboratory of Physiology and Pathology.

*American Anthropological Association.*—Museum of Science and Art.

*American Chemical Society.*—Harrison Laboratory of Chemistry.

*American Folk-Lore Society.*—Museum of Science and Art.

*American Philosophical Association.*—Logan Hall.

*American Physical Society.*—Morgan Laboratory of Physics.

*American Physiological Society.*—Laboratory of Physiology and Pathology.

*American Psychological Association.*—Psychological Laboratory, College Hall.

*American Society of Naturalists.*—Laboratory of Physiology and Pathology.

*American Society of Zoologists (Eastern Branch).*—Laboratory of Physiology and Pathology.

*Association of American Anatomists.*—Wistar Institute of Anatomy.

*Association of Economic Entomologists.*—Laboratory of Physiology and Pathology.

*Astronomical and Astrophysical Society of America.*—College Hall.

*Botanical Club of the A. A. A. S.*—Biological Hall.

*Botanical Society of America.*—Biological Hall.

*Entomological Club of the A. A. A. S.*—Laboratory of Physiology and Pathology.

*Fern Chapter.*—Biological Hall.

*Geological Society of America.*—Geological Laboratory, College Hall.

*Society of American Bacteriologists.*—Laboratory of Hygiene.

*Society for Horticultural Science.*—Biological Hall.

*Society for Plant Morphology and Physiology.*—Biological Hall.

*Society for Promotion of Agricultural Science.*—Logan Hall.

*Society of the Sigma Xi.*—Houston Hall, Auditorium.

*Sullivant Moss Chapter.*—Biological Hall.

*Wild Flower Preservation Society of America.*—Biological Hall.

#### SCIENTIFIC NOTES AND NEWS.

ON the occasion of the birthday of King Edward honors were conferred upon men of science as follows: Mr. W. H. M. Christie, C.B., F.R.S., has been promoted to the rank of Knight Commander of the Order of the Bath (K.C.B. Civil Division). Dr. J. W. Swan, F.R.S., has received the honor of knighthood. The Hon. C. A. Parsons, F.R.S., has been appointed a companion of the order of the Bath (C.B.).

OXFORD UNIVERSITY will confer the degree of D.Sc. on Dr. Harald Høffding of the University of Copenhagen.

The seventieth birthday of Professor G. H. Quincke, professor of physics at Heidelberg,

was celebrated on November 19. Professor Kohlrausch, of Berlin, was the president of a committee that presented him with an album containing the autograph photographs of leading physicists.

THE Vienna Academy of Sciences has re-elected Professor Eduard Suess as president.

CORRESPONDING members of the Academy of Sciences at Göttingen have been elected as follows: Professors Gustav Retzius, of Stockholm; Ernst Wilhelm Benecke, of Strasburg; Paul Ehrlich, of Frankfort, and Ewald Hering, of Leipzig.

PROFESSOR HENRY S. GRAVES, director of the Yale School of Forestry, has been commissioned by the Bureau of Forestry to undertake inspection work in the Philippines. He will also undertake commissions in India for the Forestry Bureau in the Philippines. He will leave New York on December 3, and return early in May. During the winter Professor Graves's courses will be conducted by Dr. Bernhard E. Fernow, formerly director of the Cornell School of Forestry.

FOREIGN journals state that Dr. Francisco de los Cobos, a physician of Buenos Aires, is in Spain as representative of the scientific societies of Argentina, seeking the support of the Spanish Government for the creation of a Hispano-American University.

DR. CATTO has been awarded the Craggs prize of the London School of Tropical Medicine for his discovery of a new schistosomum parasite of man.

THE Middleton Goldsmith lecture of the New York Pathological Society was delivered at the New York Academy of Medicine, on November 30, at 8:30 o'clock, by Dr. Charles Wardell Stiles, chief of the Division of Zoology, Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service. The subject was: 'Zoological Pitfalls for the Pathologist.'

THE first ordinary meeting of the Royal Statistical Society for the present session was held at the Society of Arts, on November 15, when Sir Francis Sharp Powell, Bart., M.P., delivered an inaugural address.

DR. HENRY S. CONARD, for four years Harrison fellow and now instructor in botany in the University of Pennsylvania, is about completing his monograph of the water-lilies (*Nymphæa*), which has occupied a large part of his time since 1899. The book will be published by the Carnegie Institution of Washington. It is expected to appear in December of this year, or early in January.

THE Walsingham medal, of Cambridge University, for 1903, not having been adjudged, the Special Board for Biology and Geology has agreed to recommend its award as an additional medal for the present year, and the medal has accordingly been adjudged to Mr. R. P. Gregory, B.A., fellow of St. John's, and Mr. Keith Lucas, B.A., fellow of Trinity. Mr. Gregory's essay was entitled 'The Reduction of Division in Plants and its Significance in the Physiology of Heredity.' Mr. Lucas's essay was entitled 'The Augmentor and Depressor Effects of Tension on the Activity of Skeletal Muscle.'

MR. W. H. PICKERING, late chief of the inspecting staff of the Yorkshire and Leeds Mining Districts, has been appointed chief inspector of mines in India.

A CHAPTER of the Scientific Society of the Sigma Xi has been organized at the Case School of Applied Science, with Professor J. W. Langley as president.

THE 'Harben Lectures' of the Royal Institute of Public Health, will be given in King's College, London, on Friday, November 25, December 2 and 9, by Professor John McFadyean, M.B., B.Sc., principal of the Royal Veterinary College, London, on 'Glanders.'

PROFESSOR MARSHALL WARD, F.R.S., has been elected president, and Professor Thomson, F.R.S., Professor Liveing, F.R.S., and Dr. Hobson, F.R.S., vice-presidents of the Cambridge Philosophical Society.

HENRY MCCALLEY, of the Geological Survey of Alabama died at Huntsville, Alabama, of pneumonia on the November 20, 1904, in the fifty-third year of his age. Mr. McCalley was graduated from the University of Virginia with the degrees B.S., C.E. and M.E. in 1875. From 1878 to 1885 he was assistant in

the Department of Chemistry at the University of Alabama and a volunteer on the staff of the Geological Survey. From 1883 to the time of his death he was chief assistant on the Geological Survey, in which capacity he traveled over the greater part of the state, and prepared reports dealing mainly with the coal and iron. He was secretary and treasurer of the Alabama Industrial and Scientific Society; member of the American Association for the Advancement of Science; member of the American Institute of Mining Engineers, and fellow of the Geological Society of America.

THE deaths are announced of Forstmeister Schering, formerly professor of mathematics and geodesy in the School of Forestry at Munich; and of Dr. Francesco Chizzoni, professor of geometry at Modena.

WE regret also to record the death of Dr. Karl Senhofer professor of chemistry at the University of Innsbrück; of M. J. Macé de Lépinay, professor of physics, and of M. Pouchon, professor of agricultural botany, both of Marseilles.

MR. OTTO YOUNG has donated \$100,000 to the endowment or building fund of the McCormick Memorial Institute for Infectious Diseases, Chicago.

*Nature* states that Mr. James Cosmo Melvill has presented his general herbarium to the Manchester Museum of the Victoria University. The herbarium has taken nearly forty years to collect, and it was formally opened in its new quarters by Sir W. T. Thistelton-Dyer, K.C.M.G., on October 31.

THE teachers of mathematics in the Middle States and Maryland met at Princeton on November 28. Professor Gustave Legras of the College of the City of New York, who is chairman of the New York section of the Association, read a paper on 'Present Tendencies in the Teaching of Mathematics in Other Countries.'

THE annual meeting of the Association of Mathematical Teachers in New England was held at Harvard University. William A. Francis of Exeter, N. H., was elected president, Professor Nathaniel F. Davis of Brown

University vice president and Mr. George W. Evans of the English High School, Boston, secretary.

WE learn from *Nature* that the inaugural meeting of the Association of Economic Biologists was held at Burlington House on Tuesday, November 8. Mr. F. V. Theobald occupied the chair, and in the course of his introductory remarks he detailed the steps taken by Mr. Walter E. Collinge to found the association. He hoped that the association would welcome all investigators in economic biology, whether agricultural, medical or commercial. The relationship between biology and agriculture was apparent to all, but only recently had the importance of its relationships with medicine and commerce been realized. Membership of the association will be confined to workers in economic biology. The following officers have been elected for 1904-5: *president*, Mr. Fred V. Theobald; *vice-president*, Mr. A. F. Shipley, F.R.S.; *council*, Professor G. S. Boulger, Professor A. H. R. Buller, Professor Geo. H. Carpenter, Dr. Francis Marshall, Mr. Robert Newstead, Major Ronald Ross, F.R.S., Mr. Fraser Storey, Mr. Cecil Warburton; *hon. treasurer*, Mr. Herbert Stone; *hon. secretary*, Mr. Walter E. Collinge. The next meeting will be held at Birmingham in April, 1905:

THE forthcoming second edition of the German version of Mr. Balfour's presidential address to the British Association has brought, as we learn from the *London Times*, to the translator, Dr. M. Ernst, London correspondent of the *Neues Wiener Tagblatt*, the following letter from the Prime Minister:

10, Downing-street, Whitehall, S. W.,

Nov. 10, 1904.

My dear Sir:—I am much gratified to learn that there has been a sufficient demand for the German translation of my address to the British Association to make it worth while to issue a second edition; and all the more because the address touches on a middle region between physical science and philosophy, in which, as a rule, neither men of science nor philosophers are greatly interested.

At Cambridge, where the address was delivered, I had the honour of meeting some most distinguished German men of science, who took an im-

portant part in the various discussions with which the British Association busied itself. I would that the disinterested community of aim which thus binds together the scientific men throughout the world into one international brotherhood could extend its healing influence through all classes and all interests.

I remain yours faithfully,

ARTHUR JAMES BALFOUR.

THE Liverpool School of Tropical Medicine has, says the London *Times*, issued a series of reports on trypanosomiasis, that is to say, on the presence in the blood of man, and in the fluids of the brain and spinal cord, of some form of the microscopic parasite known as 'Trypanosoma,' which, having long been recognized as the cause of the virulent equine disease which is propagated by the tsetse fly in South Africa, has lately been discovered to be also the cause of 'sleeping sickness' in the human subject. The reports of Drs. Dutton, Todd and Christy have been sent home in instalments, some of which have already appeared in the medical journals. These and others are collected together in the present volume, which also contains an important note on the tsetse flies, by Mr. E. E. Austen, of the Zoological Department of the British Museum, and illustrations of flies and larvæ from the Congo. The details of cases given in the reports are, in a general way, too full of medical technicalities to be of general interest; but they seem to establish conclusively that 'sleeping sickness' is trypanosomiasis, although there are severe and even fatal cases of the latter in which the somnolence is not observed. The symptoms and the danger appear to bear some relation to the greater or less abundance of the parasites, and to become more marked and more serious when these have gained access to the cerebro-spinal fluid. The parasites may be present in the blood of deeply-seated organs when they are not discoverable in that which is drawn from a surface puncture; and their frequent temporary disappearances from surface blood render it sometimes difficult to be certain of their presence in the system. At the same time it appears that the term sleeping sickness is used very loosely among the Congo natives; and in

many of the persons said to be suffering from it, and therefore brought to the hospital, the diagnosis was not confirmed either by the detection of the parasites or by the further progress of the case. One of the most curious results of the expedition has been the discovery of a bloodsucking larva of nocturnal habits, which seems to be abundant in many parts of the Congo, and which, during the daytime, seeks concealment in the cracks of the native floors, from which it may be dug out full of bright red blood as an evidence of the nature and the abundance of its previous night's meal. It is the larva of the *Glossina* fly, which appears to be harmless in the *imago* state, although it is probable that for this harmlessness the larva makes abundant compensation. The discovery will probably lead to the adoption of systematic measures for its destruction.

A REVIEW of the laws forbidding the pollution of inland waters in the United States has been prepared by Mr. Edwin B. Goddell for the United States Geological Survey. It is published as No. 103 of the series of Water-Supply and Irrigation papers. Mr. Goodell's purpose has not been to prepare a complete work on water pollution for the use of members of the bench and bar, but rather to put into the hands of public officials, legislators, water companies, manufacturers, farmers and others interested in the subject, a guide for their action, and to furnish references to the sources from which a more exhaustive knowledge of the subject may be obtained if required. No attempt has been made to present a detailed statement of the entire law against water pollution as it exists independently of statutes, but the broad legal principles under which antipollution statutes become operative are explained and important court decisions are quoted to show authority for various deductions. These principles and decisions have been classified and are presented in three groups: (1) The rights of riparian owners to pure water as against one another. (2) The rights of the public (as distinguished from individual owners) to have inland waters kept free from pollution by riparian owners or others. (3) The conditions under which, and the extent to which, public municipalities

may use inland waters in the disposal of sewage matter from public sewers. The statutes enacted in various states are classified according to their general scope and an opportunity is thus afforded to compare their effectiveness and desirability. In some states there is nothing more than a simple provision making it a crime to poison wells and springs, while in others elaborate provisions have been made to check and, so far as possible, absolutely prevent all pollution of all waters by the refuse products of animal life or the waste of human industry. In citing the statutes, Mr. Goodell has grouped the states together logically to show the stage of growth in sanitary education at which each has arrived. It is hoped that the publication and distribution of this paper will help to bring about a general apprehension of correct principles upon the important subject of water pollution.

#### UNIVERSITY AND EDUCATIONAL NEWS.

THE John Bell Scott Memorial Laboratory of Physical Science, at Wesleyan University, Middletown, Conn., will be dedicated on December 7. The address will be delivered by Dr. Edward B. Rosa, on 'The National Bureau of Standards and its Relations to Scientific and Technical Laboratories.'

WE learn from the *London Times* that at the beginning of last year an appeal was made by Dublin University for a fund for the development and better equipment of the science schools in Trinity College. Lord Iveagh offered to provide all the estimated building expenses (a sum of £34,000) conditionally upon the amount required for annual expenses being obtained by public subscription. For the latter purpose a capital of £78,000 is required. The committee in charge of the fund announce to-day that of this amount £15,886 has now been subscribed or promised, a site and designs have already been prepared for a new physical laboratory, and building operations will begin before the end of the year.

NEW medical buildings and the George Holt Physics Laboratory, which have been added to the Liverpool University, were opened on November 12. The inauguration proceedings took place in St. George's-hall

and were presided over by the Chancellor of the University, Lord Derby, who was accompanied by Lord Kelvin, Mr. Haldane, K.C., M.P., Lord Cross and representatives of the English universities. The buildings have been erected at a cost of £21,600, which has been subscribed by Liverpool merchants and representatives of local families.

THE following promotions and appointments have been made in the Department of Mathematics and Astronomy of the University of Pennsylvania: George H. Hallett, Ph.D., has been promoted to an assistant professorship of mathematics; Eric Doolittle, C.E., to an assistant professorship of astronomy; Henry B. Evans, M.E., Ph.D., has been appointed assistant professor of mathematics.

DR. ALBERT WOELFEL has resigned his position in the Memorial Institute for Infectious diseases, Chicago, to accept an appointment in the Department of Physiology, of University of Chicago.

WE learn from *The Electrical World* that Professor Harry E. Clifford, acting head of the department of electrical engineering in the Massachusetts Institute of Technology, has been appointed to the free professorship of theoretical electricity in the institute. Mr. W. S. Barstow has been elected a member of the faculty of the Polytechnic Institute of Brooklyn. Mr. Barstow will serve in the department of electrical engineering as consulting professor of central station practice. Mr. Charles F. Scott has become a member of the board of consulting professors of the department of electrical engineering of the institute.

MR. R. P. GREGORY, demonstrator of botany, and Mr. E. Cunningham, senior wrangler, 1902, have been elected fellows of St. John's College, Cambridge.

PROFESSOR SVANTE ARRHENIUS, of Stockholm, has been called to the University of Berlin.

DR. W. NERNST, of Göttingen, has been called to Charlottenburg, as director of the Reichsanstalt.

DR. OTTO LUMMER, of the Reichsanstalt, has been appointed professor of physics at the University of Breslau.