

freezing of the beet be brought about slowly, water may be drawn into the cavity from a considerable distance from cell to cell within the tissue.

Certain strong non-poisonous solutions, when applied to the cut ends of the petioles of leaves, produce a similar translucent effect in the tissue of the blades of leaves, as is shown by the writer in a paper now in process of publication.

JAMES B. DANDENO.

BOTANICAL MUSEUM OF HARVARD UNIVERSITY, May 22, 1901.

#### *THE AMERICAN MATHEMATICAL SOCIETY.*

A PRELIMINARY circular, which has just appeared, describes the arrangements which have been made for the summer session of the American Mathematical Society to be held at Cornell University, Ithaca, N. Y., during the week beginning on August 19th. The meeting proper, for the transaction of business and the presentation of papers, will take place on the first two days, while the remainder of the week will be occupied by a colloquium. Two courses of lectures by Professor Oskar Bolza, of the University of Chicago, and Professor E. W. Brown, of Haverford College, are announced as the basis for this colloquium, which will be the third organized by the society in connection with its summer meetings. Professor Bolza's subject is 'The calculus of variations, in particular Weierstrass's discoveries.' The principal object of the course is to give a detailed account of the solution of the simplest type of problems, in its historical development, with special emphasis upon the contributions of Weierstrass and his followers. A summary review of the peculiar features of the more general problems is also intended. Professor Brown will lecture on 'Modern methods of treating dynamical problems and in particular the problem of three bodies.' The object of this course is to set forth some of the later attempts to introduce more rigor into the methods of solving dynamical problems, mainly the researches of Poincaré. The course will be chiefly descriptive, in showing the principles of the methods, the mathematical difficulties which arise, and the results which have been obtained. Among the subjects treated will be the following: the

various forms of the differential equations of dynamics, the existence of integrals, solutions by infinite series, periodic solutions, stability and instability. In neither course will special knowledge of the subject be presupposed.

#### *SCIENTIFIC NOTES AND NEWS.*

DR. IRA REMSEN, professor of chemistry in the Johns Hopkins University since its foundation in 1876, has been elected president of the University.

A COMMITTEE, consisting of Professors Ira Remsen, J. S. Ames and W. H. Welch, has been appointed at the Johns Hopkins University to arrange a memorial to the late Professor Henry A. Rowland.

M. LAVERAN, the French army surgeon who discovered the malaria parasite, has been elected a member of the Paris Academy of Sciences in the section of medicine, filling the vacancy caused by the death of M. Potain. In the third ballot M. Laveran received forty, and M. Ch. Richet twenty-six, votes.

AT a recent meeting of the National Geographic Society, the by-laws were so changed as to merge into the single class of 'members' the two classes hitherto designated 'resident members' and 'non resident members,' and also to increase the board of managers from 18 to 24, including six not resident in the District of Columbia. The board has now been completed by the election of the following non-resident members: Professor William M. Davis, Cambridge; Mr. Russell Hinman, New York; Professor Angelo Heilprin, Philadelphia; Dr. Daniel C. Gilman, Baltimore; Professor Rollin D. Salisbury, Chicago, and Professor George Davidson, San Francisco.

DR. G. A. HANSEN, of Bergen, the discoverer of the bacillus of leprosy, will celebrate his sixtieth birthday in July, and it is proposed to present him with an international testimonial made up of small subscriptions. These may be sent to Dr. Sandberg, Bergen.

PROFESSOR EDWARD F. MORLEY, of Adelbert College, has been appointed a delegate from the United States to the International Conference of Weights and Measures, which is to be held in Paris during September.

DR. WARREN P. LOMBARD, professor of physiology in the University of Michigan, will spend the summer abroad and will attend the International Physiological Congress to be held in Turin in September.

DR. FRANZ BOAS, professor of anthropology in Columbia University and curator of ethnology in the American Museum of Natural History, has been appointed philologist in the Bureau of American Ethnology. The appointment is an honorary one, and Dr. Boas will direct the work from New York City.

PROFESSOR WILLIAM JAMES offers a course next year at Harvard University on 'The Psychological Elements of Religious Life,' based on the Gifford lectures now being given at Edinburgh.

DR. T. C. HOPKINS, professor of geology at Syracuse University, will work on the geological survey of Indiana during the summer vacation. An attempt will be made to complete the work for a new edition of the geological map of Indiana.

THE Carnegie Museum has despatched Mr. W. E. C. Todd, custodian of the collections in ornithology, Dr. D. A. Atkinson and Mr. George Mellor to the Maritime Provinces and Newfoundland to make natural history collections for the museum during the coming summer. Professor J. B. Hatcher is engaged in taking up fossils at Cañon City, Colorado, Mr. O. A. Peterson is continuing the work begun by Professor Hatcher in western Nebraska last year, and the quarry at Camp Carnegie, on Sheep Creek, Wyoming will be worked during the coming summer by a party under Mr. C. W. Gilmore.

PROFESSOR C. L. BRISTOL, of New York University, left New York on June 1 to direct the Biological Station at Bermuda.

THE house-boat *Megalops* of the Zoological Survey of Minnesota, under the direction of Professor Nachtrieb, has been hauled ashore near the head of Lake Pepin, a few miles below Red Wing, where it will be used as station headquarters. A gasoline launch has been purchased for this station, and, in line with the plan begun with the rowboat *Zosa*, has been called *Callinectes*. There is also to be constructed a boat

specially adapted for dredging and similar work. This boat will be called *Branchippus*. Professor Nachtrieb will send a party of four into the Lake Vermillion region and the N.E. corner of Minnesota. A party of two will conduct special investigations in the Lake of the Woods, and another will carry on work at the Lake Pepin station.

SIR COURTENAY BOYLE, permanent secretary of the Board of Trade, died in London on May 19. Sir Courtenay had in various official positions contributed much to the applications of science especially as supervised by the government.

MR. E. W. PARSONÉ died in London on May 20. He was interested in submarine telegraphy and had done scientific work in connection with the transit of Venus and in other directions.

MR. ANTHONY WILKIN died at Cairo on May 17. Although only twenty-four years of age, he had accomplished good work in several scientific expeditions. He was a member of the Cambridge anthropological expedition to Torres Straits, and had carried on archeological work in Egypt with Professor Flinders Petrie.

IT is announced that Mr. John D. Rockefeller has given \$200,000 for the foundation of an institute for medical research, and it is understood that this fund will be increased as needed. We lack in America an institution corresponding to the Pasteur Institute in Paris or the institution in London recently endowed by Lord Iveagh. It appears that this need will be met by Mr. Rockefeller's gift, though the exact scope of the institution is still under consideration.

IT is said that Mr. Alfred Harmsworth has subscribed \$50,000 toward an institute in London for the cure of lupus by exposure to light.

THE U. S. Civil Service Commission announces that owing to lack of applicants the examination, announced to be held on June 3, for the position of secretary of the National Bureau of Standards, Treasury Department, has been postponed to June 22, and will be held in any city in the United States where postal free delivery has been established. The duties of this position are those of general sec-

retary to a scientific or technical bureau and include the handling of the general correspondence of the Bureau and the editing of bulletins and reports. The occupant of this position will also act as purchasing agent and have charge of the official records, apparatus and equipment, and will be executive officer of the Bureau. The examination will consist of the subjects mentioned below which will be weighted as follows:

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| 1. Stenography and typewriting.....  | 20 |
| 2. Editing and proofreading (practical tests).....                           | 10 |
| 3. Education and training.....   | 20 |
| 4. General experience in editorial and executive or business capacities..... | 50 |

The test in typewriting will comprise practical work in tabulating and copying and spacing. Some knowledge of stenography will be required. Applicants for this position should possess a knowledge of elementary physics, chemistry and mathematics, such as prescribed in the general science course of any college or technical school. No person will be examined who has not had a liberal college education or its equivalent. From the eligibles resulting from this examination it is expected that certification will be made to the position of secretary of the National Bureau of Standards, Treasury Department, at a salary of \$2,000 per annum.

A CIVIL service examination will be held on July 2d and 3d to fill the position of photographer in the Division of Forestry, U. S. Department of Agriculture, with a salary of \$1,200. The examination is on photographic methods, and does not require a knowledge of botany or of forestry.

THE American Academy of Medicine and the American Medical Association are meeting at St. Paul during the present week.

THE American Forestry Association will hold its meeting in affiliation with the American Association at Denver on August 27, 28 and 29.

THE Royal Geographical Society held its anniversary meeting on May 20. Sir Clements Markham, the president, in his address, laid special stress on the British Antarctic Expedition. He said that toward sending a special

ship in November, 1902, the sum of £5,500 had been subscribed toward the £15,000 required. The medals were conferred in accordance with the announcements we have already made, Dr. A. Donaldson Smith being present to receive the patron's medal. It was announced that the total number of fellows is 3,997, and the income last year was over £10,000.

THE British Institution of Mechanical Engineers held its annual conversazione on May 17. The annual meeting of the institution will be held at Barrow in Furness during the last week in July.

Owing to an accident connected with the apparatus for adjusting the propeller, the steamship *Discovery*, of the British National Antarctic Expedition has been unable to leave Dundee for London at the time expected.

PROFESSOR H. H. GIGLIOLI, of the Royal Zoological Museum, Florence, writes to *Nature* that on April 13th the second annual meeting of the Zoological Union of Italy concluded its work at Naples. This Union was formed at Pavia last year and in the following September it held its first general meeting at Bologna, which proved to be quite a success as to the work performed and the large attendance. It became evident that the Union, the scope of which is to collect the scattered forces of students of zoology and to prepare the way for the foundation of a zoological journal worthy of Italian science, has responded to a wish generally felt in Italy. The Union now counts amongst its members nearly all the Italian professors of zoology and anatomy and many other students of those sciences. The meeting at Naples was even more numerous than that at Bologna, and many interesting communications were read. Bologna greeted the assembled zoologists with the memories of its old masters—Aldrovandi, Malpighi, Alessandrini and others; at Naples they were *fêted* by that great center of zoological investigations, the Zoological Station, whose steam-launch, which bears the glorious name of *Johannes Müller*, gave the visitors practical examples of pelagic trawling and dredging, as the war steamer *Ercole* bore them to Capri. Rome has been chosen for the third Congress, in 1902, 'when,' remarks Professor Giglioli, 'we shall be proud

and happy to welcome any of our foreign colleagues who should choose to honor us with their presence.'

#### UNIVERSITY AND EDUCATIONAL NEWS.

HAMLIN UNIVERSITY, at St. Paul, Minn., has received a fund of \$100,000 of which \$50,000 is from Mr. James J. Hill and \$30,000 from Mr. M. G. Norton.

AN Edinburgh correspondent telegraphs to the London *Times* that the details of the scheme already announced of Mr. Andrew Carnegie's great benefaction to his native land appear to have been only partial, and much misconception has been created and adverse criticism made owing to the absence of the full facts. It appears that an understanding was come to by those to whom Mr. Carnegie has already sketched an outline of his scheme that no communication should be made regarding it until the matter had assumed definite shape. This understanding has been violated, and the unfortunate result is that a very misleading, because partial, account of the scope of Mr. Carnegie's munificent gift has been published. Mr. Carnegie has in view a much wider scheme of benefiting Scottish education than that of making education free to Scottish university students. In a few days Scotland will be in possession of the full facts. In the meantime the outline published has given much needless alarm as regards the extra-mural schools. The scheme will amply provide for extra-mural schools, and every boy and every girl who enters a Board school will, if the ability be shown, rise to the highest seat of learning without the payment of a single farthing in fees. Not only will the amplest provision be found to be made to open the gates of knowledge, but also to raise the universities of Scotland to the foremost rank.

It will be remembered that Yale University has recently abolished required studies in the Sophomore year, and that students may now choose either five or six of twelve subjects that are offered. The elections for next year are as follows: English, 258; history, 216; physics, 194; chemistry, 194; German, 162; French, 155; Latin, 131; mathematics, 112; Greek, 110; mental science, 45; philosophy, 7; analytical geometry, 6.

AT the recent commencement of the Medical Department of the Western University of Pennsylvania, seventy-five diplomas were granted to men who had completed the course of four years in medicine which is required. The Medical Department is engaged in a struggle to resist the encroachment of purely political influence in the appointment of the surgeons and physicians on the staff of the Western Pennsylvania hospital with which the college stands related. The contest is awakening general interest throughout the State.

THE Japanese university for women in the suburbs of Tokio was opened with appropriate ceremonies on April 21.

THE council of the University of Birmingham is prepared to appoint a professor in the proposed faculty of commerce with a salary of £750.

REV. JAMES G. K. McCCLURE, D.D., for the last four years president of Lake Forest University, has handed his resignation to the board of trustees, and Rev. Richard D. Harlan, of Rochester, N. Y., has been elected to the presidency. Dr. McClure only intended to hold the presidency for a short period and had retained the pastorate of the Lake Forest Presbyterian Church.

AT Bryn Mawr College, Dr. Elinor P. Kohler has been promoted to be professor of chemistry and Dr. Allerton Seward Cushman has resigned the associateship in chemistry. Miss Harriet Brooks has been appointed resident fellow in physics and Miss Marie Reimer resident fellow in chemistry.

H. C. HASLAM, M.A., M.B., B.C., of Gonville and Caius College, has been elected to a John Lucas Walker studentship in pathology at Cambridge University. Dr. Sladen, who received permission to leave his work in Cambridge to join his mobilized militia battalion for service in Ashanti, and who has now returned, has been reinstated as a second student.

PROFESSOR ALFRED NEWTON, who holds the chair of zoology and comparative anatomy at Cambridge University, has been excused from delivering lectures during the coming year. His place will be in part supplied by Mr. W. Bateson.