in the evening at which less formal speeches will be made.

SCIENTIFIC NOTES AND NEWS

PROFESSOR H. F. OSBORN will deliver the third series of the "Norman W. Harris Lectures" before Northwestern University, from December 3 to 11. The subject of the course is "The Age of Mammals in Europe and America." The lectures treat of the Cænozoic period faunistically and from the standpoint of migrations between the old and the new worlds. According to the conditions of the lectureship they will be published subsequently in book form.

DR. THEOBALD SMITH, professor of comparative pathology in the Harvard Medical School, will give a course of eight Lowell lectures on "Our Defenses against the Microorganisms of Disease." These lectures, beginning March 16, will be given on Tuesdays and Fridays.

THE non-resident lecturer in mathematical physics at Columbia University for the year 1908–9 is Professor Max Planck, of Berlin. In the latter part of April and the early part of May, 1909, he will deliver a course of lectures upon "The Present System of Theoretical Physics," dealing particularly with the questions of reversibility, heat-radiation, and the principle of relativity. Details of the dates and subjects of the individual lectures will be published early in March.

PROFESSOR BATESON delivered an inaugural lecture at Cambridge University on October 23, on "The Methods and Scope of Genetics."

DR. WILLIAM P. MASON, professor of chemistry at the Rensselaer Polytechnic Institute, of Troy, N. Y., gave the annual Founders' Day address at Lafayette College, on October 21, his subject being "A Plea for a wider and better Extension of the Knowledge of Sanitary Science. The degree of LL.D. was conferred upon Professor Mason.

IN connection with the visit of the members of the Congress of Electrical Units to Cambridge University, degrees of doctor of science were conferred on Dr. S. W. Stratton, Professor Svante A. Arrhenius, Professor G. Lippmann and Dr. E. G. Warburg.

MR. W. H. HOLMES, chief of the Bureau of American Ethnology, sailed for South America on October 28, as delegate of the United States to the Pan-American Scientific Congress. He will return in February. During his absence Mr. F. W. Hodge will be in charge of the bureau.

IN accordance with the current federal agricultural appropriation act, authorizing the establishment of an experiment station in the Island of Guam, Dr. W. H. Evans, of the Office of Experiment Stations, has visited the island and selected a site for the station at Agaña. The station will be conducted under the immediate supervision of the office, with H. L. V. Costenoble as agent in charge.

SIR DANIEL MORRIS, Imperial Commissioner, West Indian Agricultural Department, has resigned.

MR. ROSWELL H. JOHNSON has resigned his position as investigator at the Station for Experimental Evolution of the Carnegie Institution at Cold Spring Harbor, N. Y., to become a consulting geologist. His manuscript on "Determinate Evolution in the Color Pattern of the Lady Beetles" is now in press.

DR. I. F. LEWIS has returned from Europe, where he has been studying at Naples and Bonn, and has resumed his duties as professor of biology at Randolph-Macon College, Ashland, Va.

SIR JAGADIS CHANDRA BOSE, M.D. (Cantab.), D.Sc. (Lond.), professor of the Presidency College, Calcutta, addressed the Biological Club of the Massachusetts Institute of Technology on October 22. His subject was "The Plant as a Living Machine," and the lecture was followed by a demonstration of plant responses, mechanical and electrical.

THE 347th regular meeting of the Middletown Scientific Association was held in the Scott Laboratory of Physics, Wesleyan University, on October 27, when Professor Herbert William Conn delivered an address on "The Fight against Tuberculosis."

A MEETING of the Columbia Chapter of the Society of Sigma Xi was held with the department of physics, on October 29. The

lecture of the evening was upon the subject "Modern Practise in Color Photography," and Mr. Alfred Norton Goldsmith, B.S., the lecturer, described and illustrated by apparatus and specimens the present methods of producing color photographs.

Dr. William R. Brooks, director of Smith Observatory and professor of astronomy at Hobart College, lectured recently at Wells College on "Other Worlds than Ours." The lecture was illustrated with stereopticon views and motion slides.

A meeting of trustees, faculty, students and alumni, to commemorate the life and work of the late Dr. D. C. Gilman, formerly president of Johns Hopkins University, will be held in McCoy Hall on the afternoon of Sunday, November 8.

Dr. Adolph Wüllner, professor of physics at Aachen, died on October 6, at the age of seventy-three years.

The deaths are also announced of Dr. A. W. Pöhl, professor of chemistry at St. Petersburg, at the age of fifty-eight years, and of Dr. Lissauer, of Berlin, known for his work in anthropology.

The Astronomical and Astrophysical Society of America will hold its next meeting, in the summer of 1909, probably at the Yerkes Observatory. The exact date has not yet been fixed, but it is expected to precede by a few days the Winnipeg meeting of the British Association for the Advancement of Science, which will open on August 25, 1909.

The steamer *Pourquoi Pas,* with the Charcot Antarctic exploration expedition on board, arrived at Rio Janeiro on October 12, on its way to the South Polar regions, according to press dispatches. The ship will remain there for a week and the Geographical Society will give a reception in honor of the scientific staff. It will then proceed down the South American coast to Buenos Ayres, Punta Arenas and Ushushia, in Patagonia. Dr. Charcot will visit Loubet Land, which he discovered in 1905, and from that point will proceed to Alexander Land.

A meeting of the Geographical Society of Philadelphia will be held at Witherspoon Hall at eight o'clock on Wednesday evening, November 4, when the program will be:

Annual address by the President: Mr. Alba B. Johnson.

"Movement for the Conservation of Natural Resources": Mr. Emory R. Johnson.

"Report on the Ninth International Geographical Congress": Mr. Henry G. Bryant.

The program of the Forest Club of the University of Nebraska for the first semester of the academic year is as follows:

October 6—"Poplars and their Importance": Dr. Bessey.

October 20—"Influence of Windbreaks": C. R. Tillotson.

November 3—"Forest Surveys": Professor Sears.

November 17—"Gypsy and Brown-tail Moths": Professor Bruner.

December 1—"Germination of Forest Seed": Mr. McNeel.

December 15—"Forest Methods in the Rockies": H. Stephenson and H. Greenamyre.

January 6—"Problems in Forest Ecology": Mr. Pool.

At the recent meeting of the British Iron and Steel Institute Professor E. D. Campbell, of the University of Michigan, presented a paper on the constitution of carbon steels. According to an abstract in *Nature* he reviewed the efforts that have been made to interpret the phenomena of the hardening and tempering of steel in the light of the phase rule. The analysis of the carbides obtained from martensite and from troostite in his laboratory appears to indicate marked dissociation, ionic as well as molecular, in the carbides from martensite, while the analysis of the carbides obtained from troostite would seem to indicate almost complete association and polymerization of the dissolved carbides, since the nitro-derivatives of the troostitic carbides are as dark in color as those obtained from equal amount of carbides derived from pearline. These results would indicate the probability that when martensite is heated from 0° C. to 200° C. there is progressive association of ionically dissociated carbides, and polymerization of the carbides of lower molecular weight into those of high molecular weight. This polymerization of dissolved carbides is apparently complete by the time

the metal has been converted into troostite. This conception of the changes which take place in the gradual conversion of martensite into troostite offers a simple and rational explanation of the progressive darkening of martensite with rising temperature from 0° C. to 200° C., and for the increase of what Heyn and Bauer term free carbon, but which is probably a condensation product of olefines of high molecular weight. It is suggested that there does not seem to be any inherent reason why the complete substitution of hydrogen by iron should prevent carbon atoms from assuming relations to each other similar to those which they hold in hydrocarbons. The conception of the carbon compounds of iron as metallic derivatives of hydrocarbons suggests a possible explanation of many unsolved problems in the metallurgy of steel, as, for instance, how other elements, too small in amount in themselves to affect profoundly the properties of the steel, may enter into the carbon compounds and, by altering their constitution, bring about effects on the steel as a whole entirely out of proportion to the amount of the element present.

AT a convention at the University of Illinois to consider means of combatting tuberculosis in cattle, in session on October 13 and 14, the methods followed successfully by the college of agriculture of the University of Wisconsin will be discussed with a view to adopting them in the state of Illinois. The prevalence of the disease in Illinois is believed to be as great as it was in Wisconsin several years ago when the present plan of testing all dairy herds and segregating or destroying the tuberculous was adopted. Dean H. L. Russell, of the Wisconsin Agricultural College, delivered a lecture and post-mortem demonstration of the effects of the disease upon cattle.

WE learn from the London *Times* that with the view of increasing the public utility of the collection of specimens contained in the museum of the Royal College of Surgeons, the council of the college has arranged for a series of demonstrations to be given in the theater of the college during the present session. The demonstrations will be given by the conservator, Professor Keith, and by the pathological curator, Professor Shattock. Specimens from the museum will be shown, and their bearings on general and surgical pathology discussed. The demonstrations, besides being of practical value to medical practitioners and advanced students, should also be of assistance to visitors of the college museum. The first demonstration of the series was to be given by Professor Keith on October 16, which is the one hundred and fifteenth anniversary of the death of John Hunter, the founder of the museum.

THE program of the Harvey Society for its course of lectures during the winter of 1908–9 is as follows:

October 24—"Intestinal Infection and Immunity in Tuberculosis": Professor A. Calmette, director of the Pasteur Institute of Lille, France.

November 7—"Fever": Professor W. G. MacCallum, Johns Hopkins University.

November 21—"Metabolism in Diabetes": Professor Graham Lusk, University and Bellevue Medical College.

November 28—"Therapeutics of Diabetes": Dr. Wilhelm Falta, University of Vienna.

December 5—"Anaphylaxis": Dr. M. J. Rosenau and Dr. John F. Anderson, United States Public Health and Marine Hospital Service.

December 19—"Osmosis": Professor A. B. Macallum, University of Toronto.

January 9—"The Relation of the Liver to the Metabolism of Fat": Professor J. B. Leathes, Lister Institute of Preventive Medicine, London.

February 6—"Some Problems in Immunity and the Treatment of Infectious Diseases": Professor Philip Hanson Hiss, Columbia University.

March 6—"Heredity in Man": Dr. C. B. Davenport, Station for Experimental Evolution, Cold Spring Harbor, N. Y.

The lectures are given under the patronage of the New York Academy of Medicine, on Saturday evenings at 8:30, at the Academy of Medicine, 17 West Forty-third Street.

ACCORDING to a notice in the *Journal of the American Medical Association*, the second meeting of the International Association of Medical Museums was held in Washington, October 1 and 2. Dr. William G. MacCallum, Baltimore, was elected president; Dr. Sims

Woodhead, Cambridge, vice-president; and Dr. Maud E. Abbott, Montreal, secretary-treasurer. It was decided to publish a bulletin and an editorial committee consisting of Drs. Aldred S. Warthin, Ann Arbor, Mich.; Dr. Aschhoff, Freiburg, Germany; and Dr. Frederick F. Russell, Washington, with the president and secretary ex-officio, was appointed. Among the subjects discussed at the meeting were "The Exchange of Specimens," "Elevation of the Medical Museum as a Teaching Medium," "Index Pathologicus," "Classification of Specimens," and "Methods of Technic." The next meeting of the association will be held in Boston in April next, following the meeting of the Association of American Pathologists and Bacteriologists.

Along the lines of the Erie Railroad in western New York a train will be run this fall by the New York State College of Agriculture at Cornell. The train will be known as the "Educational Special." On board will be about a dozen senior members of the agricultural faculty. At each station, where a stop of forty-five minutes will be made, the professors will talk to the farmers and answer any questions that may be asked by seekers for information about improved methods of farming. Circulars and posters will be sent in advance, so that the exact time of the arrival of the train may be known. Towns on the main line, the Rochester division and the Hornell and Attica division and their branches will probably be visited and the party will be on the road about ten days.

As a result of recent cooperative work with the state board of health of Rhode Island, the United States Geological Survey has accumulated a large amount of data in regard to textile and other factory wastes, the processes which produce them, their effects on streams into which they may flow, and methods by which their deleterious effects may be reduced to a minimum. This information will soon be made available to the general public through the medium of one of the survey's water-supply papers. The factory wastes studied in detail are those resulting from wool scouring, cotton-yarn bleaching, cotton-yarn dyeing, and cotton-cloth bleaching, and from the manufacture of fertilizer, glue and oleomargarine. Experimental purification of the wastes was undertaken with varying results. The details of the experiments, with estimates of probable cost and degree of purification, will be given in full in the forthcoming paper. It was found that all the wastes studied can be satisfactorily purified at a reasonable expense. The sewage from the manufacture of fertilizer, glue and oleomargarine contains enough valuable matter to pay the costs of treatment, and the recovery of wool fat and potash from wool-scouring liquor will in many cases result in a substantial profit. The pollution of streams and consequent destruction of natural water resources by such liquid wastes therefore seems to be unwarranted.

UNIVERSITY AND EDUCATIONAL NEWS

A bill has been introduced in the Vermont legislature appropriating $6,000 annually for the establishment of a department of pedagogy in Middlebury College.

Professor Liveing has given to Cambridge University almost the whole of the apparatus and material belonging to him in the chemical laboratory.

The attendance at the University of Cincinnati this year, exclusive of the external students, is as follows: liberal arts, 409; engineering, 191; teachers, 191; medical, 119; law, 82; graduate, 85.

We learn from the *Experiment Station Record* that in accordance with the law passed by the first state legislature of Oklahoma providing for the establishment and maintenance of agricultural schools of secondary grade in each supreme court district of the state, two schools have been established this year, one known as the Murray State School of Agriculture, located at Tishomingo in Johnston County and the other at Warner in Muskogee County. These state schools will offer no courses of instruction other than industrial courses. Each school has an appropriation for the first year of $20,000 for buildings and $12,000 for maintenance. One fourth of the maintenance fund for each school must