

PROFESSOR H. A. KRAMERS, University of Utrecht.

Quantum Mechanics and Classical Models. (First half.) Vector models for atoms and molecules. Rotation of polyatomic molecules.

PROFESSOR W. F. COLBY, University of Michigan.

Theory of Band Spectra. A development of the problem of molecular spectra. This course will cover the recent work, both in classification and theory of radiation from molecules.

PROFESSOR GEORGE E. UHLENBECK, University of Michigan.

Application of the Theory of Probability in Physics. This course will contain a detailed treatment of the fluctuation-phenomena, of the theory of Brownian motion, and of their recent applications.

PROFESSOR J. R. OPPENHEIMER, California Institute of Technology.

General Quantum Theory of Transitions. (First half.) Methods for investigation of elementary collisions. Interaction between radiation and matter.

PROFESSOR OTTO LAPORTE, University of Michigan.

Quantum Theory of Atomic Spectra. A study of the structure of atomic spectra from the theoretical viewpoint. Interaction of electrons within the atom. Laws governing term separations. Hyperfine structure.

THE BOTANICAL SOCIETY OF AMERICA

THE Botanical Society of America will this year hold two summer meetings: it will participate in the summer meeting of the American Association for the Advancement of Science at Pasadena, California, and it will hold an eastern meeting at Pennsylvania State College, State College, Pennsylvania.

The Pasadena meeting will be held from June 16 to 20. Regular sessions will be held in the mornings beginning on Tuesday, June 16. Excursions to places of special interest will be made in the afternoons.

Botanists will find the Pasadena region full of interest; the parks and gardens abound with tropical and subtropical exotics; the mountains, desert and sea

are easily accessible and exhibit an unusually diversified native flora.

In addition to the afternoon excursions arranged by the association, the Botanical Society will conduct a week-end (June 19-21) field-trip to places of special botanical interest, if enough botanists wish to go.

Those planning to participate in the meetings must forward the title and a short abstract of their papers so as to reach the chairman of the program committee not later than May 4. A request for a lantern, if desired, should also be made at that time.

The chairman of the program committee is Dr. L. R. Abrams, Stanford University, California.

The eastern meeting will be held from Tuesday, June 16, to Friday, June 19. On the evening of the sixteenth there will be a general gathering, followed by an address and an informal reception. The next three days will be devoted to an inspection of the experimental work in botany conducted at the College Experiment Station, to field trips, to round table discussions on various topics, and to demonstrations of scientific material by members of the society. On Thursday there is planned an all-day trip to Bear Meadows and the Alan Seeger Monument. The country around the college is diversified botanically and these trips should be of particular interest.

The meeting will be informal in character throughout and no scientific papers will be presented. Members remaining over for Saturday or the week-end will have opportunity for additional field trips, the privileges of the Country Club, or of cabins in the mountains, with a choice of golf, trout fishing and other diversions.

State College may be conveniently reached by rail, but is most readily accessible by motor car over good roads from all directions.

Suggestions as to topics for discussion and requests for space and apparatus for demonstrations should be sent to the chairman of the local committee, Professor Frank D. Kern.

SCIENTIFIC NOTES AND NEWS

At the annual meeting of the National Academy of Sciences, in Washington, D. C., an evening lecture will be given on April 27 by Professor James H. Breasted, of the University of Chicago. The subject is "The Rise of Man and the Dawn of Research."

THE John Scott Prize of the City of Philadelphia, consisting of a bronze medal and \$1,000, has been awarded to Orville S. Peters, Chevy Chase, Maryland; for his invention of the electric telemeter. Dr. Peters was from 1910 to 1918 assistant physicist at the Bureau of Standards.

THE doctorate of science will be conferred by the

Georgia School of Technology on Mr. Harry F. Guggenheim "in recognition of his high standing in the scientific engineering and aeronautical fields." The occasion of the conferring of the degree will be the formal dedication at commencement on June 6 of the Daniel Guggenheim School of Aeronautics.

PRESIDENT MASARYK, of Czechoslovakia, has conferred the Order of the White Lion, Fourth Class, on Dr. Frederick G. Novy, professor of bacteriology and chairman of the executive committee of the Medical School of the University of Michigan.

THE French Government has named Jerome Alex-

ander, consulting chemist of New York City, Officier de l'instruction publique.

WE learn from *Nature* that the prize for 1930 for an improvement in the science or practice of navigation offered by the Royal Society of Arts, under the terms of the Thomas Gray Memorial Trust, has been awarded to Messrs. Charles A. Stevenson and David Alan Stevenson, of Edinburgh, for their invention of the talking beacon installed at Cumbrae Lighthouse.

Museum News states that Mr. R. Lawford Knaggs has been awarded the honorary medal of the Royal College of Physicians, London, in appreciation of his services to the museum of the college.

AT the annual meeting of the American Association of Pathologists and Bacteriologists held in Cleveland, on April 2, the following new officers were elected: Ward J. MacNeal, *president*; E. T. Bell, *vice-president*; F. B. Mallory, *treasurer*; Howard T. Karsner, *secretary*; O. T. Avery, *incoming member of council*.

AT the meeting of the Royal College of Physicians of London held on March 30, Lord Dawson of Penn was elected president, in succession to Sir John Rose Bradford, Bt.

DR. C. W. HUNGERFORD, professor of plant pathology, assistant dean of the College of Agriculture and vice-director of the Agricultural Experiment Station of the University of Idaho, has been appointed dean of the Graduate School, effective on June 1.

Industrial and Engineering Chemistry reports that Mr. W. F. Fulton has left the Palmer Gas Products Corporation, Shreveport, Louisiana, to become head of the chemical department of the United Gas Public Service Company, Houston, Texas, where he is in charge of all laboratories of the system.

EDWIN C. BOUDREAUX, who has been acting chief of the New Orleans station, Food and Drug Administration, for the past year, has been appointed chief of that station. Mr. Boudreaux has directed the work there since the death, in 1925, of A. L. Burns, former chief.

THE Committee on Scientific Research of the American Medical Association has made a grant-in-aid to Dr. H. E. Himwich, of the department of physiology, of Yale University, for aid in work on fat metabolism in diabetes.

DR. JOHN M. T. FINNEY, professor of clinical surgery at the Johns Hopkins University School of Medicine, has been appointed consultant to the committee on the costs of medical care.

PROFESSOR GEORGE TISCHLER, of the University of Kiel, will serve as Speyer Professor at the Johns

Hopkins University during 1931-32. He will be in residence in Baltimore from November 1 to January 31. For a short time before and after his stay in Baltimore, Professor Tischler expects to be able to lecture in other institutions in this country. Any institution wishing to hear Professor Tischler should communicate directly with him at Kiel, or with Dr. Duncan S. Johnson, the Johns Hopkins University, Baltimore, Maryland.

MR. GEORGE J. MILLER, since 1913 a member of the department of geography of the State Teachers College at Mankato, Minnesota, will give a course of lectures at the University of London during the spring of 1931. These lectures, which will treat primarily of geographic education in American schools and the geography of the United States, will be offered in three of the colleges of the university, the London Day Training College, Birkbeck College and the London School of Economics and Political Science.

AMONG the speakers at the formal dedication on April 20 of the School of Medicine and Hospital of Duke University were Dr. David Linn Edsall, dean of Harvard Medical School; Dr. Lewis Hill Weed, director of the Johns Hopkins School of Medicine; Dr. William Henry Welch, of the Johns Hopkins; Dr. Watson S. Rankin, of Charlotte, director of the division of hospitals of the Duke endowment; Governor O. Max Gardner, of North Carolina, and Dr. Thurman D. Kitchen, of Wake Forest College.

PRESIDENT KARL T. COMPTON, of the Massachusetts Institute of Technology, will address the West Virginia University Scientific Society on May 12. His subject will be "The Spirit of Inquiry." On Wednesday, May 13, he will speak to the students at the convocation exercises upon "Engineering and Industry."

PROFESSOR OSKAR BAUDISCH, of the department of chemistry of Yale University, addressed the Physics Seminar at Purdue University on April 2 on "The Formation of Gamma Ferric Oxide and Its Magnetic Properties."

PROFESSOR L. E. DICKSON, of the University of Chicago, gave illustrated lectures on March 2 before the Western Society of Engineers and on April 4 before the American Mathematical Society on "The First Complete Proof of a Waring Theorem on Fifth Powers."

PROFESSOR R. D. CARMICHAEL, of the department of mathematics of the University of Illinois, addressed the Sigma Xi Club of the University of Alabama on April 23. His subject was "Some Recent Advances in Mathematical Thinking."

DR. ROBERT ROBISON, head of the department of

biochemistry of the Lister Institute, London, will deliver a lecture on "The Chemistry of the Calcification of Bone" at the Hospital for Joint Diseases, New York, on May 7 at 8:30 P. M. This is the first lecture given under the auspices of a fund established in the memory of the late Dr. Walter M. Brickner.

At the meeting of the Section of Diseases of Children of the Royal Society of Medicine, London, to be held on June 9, Professor A. Calmette, of Paris, will read a paper on the B.C.G. immunization of infants.

On the evening of April 22 Dr. E. P. Wightman, of the Kodak Research Laboratories, Rochester, New York, addressed The Camera Club, New York, on the subject of "Photographic Development." On the walls of The Camera Club was hung during the month of April a seventy-two print exhibition of pictorial photographs by Dr. Wightman.

On April 2 and 3 Dr. A. S. Pearse, professor of zoology, Duke University, lectured at the University of Michigan under the auspices of the department of zoology, on the following subjects: "Tropical Nature," "Migration of Animals from Ocean to Land and Freshwater" and "The Parasites of Nigerian Rodents" and Dr. Robert Chambers, professor of biology at the Washington Square College, New York University, lectured on April 7 and 8 on: "Micro-operations on Living Cells, Plant and Animal," "The Hydrogen-Ion Concentration of Protoplasm," and "Physical and Chemical Properties of Protoplasm."

DR. R. A. FISHER, chief statistician of the Rothamsted Experimental Station, Harpenden, England, will be on the staff of the Department of Mathematics, at the University of Minnesota, during the second half of the summer session, from July 27 to August 29. He will lecture on "The Theory of Estimation" and on "The Statistical Theory of Experimental Design." Professor Griffith C. Evans, of the Rice Institute, will also be in residence at the University of Minnesota during the entire summer session. During the first term, from June 17 to July 25, he will lecture on "The Mathematical Theory of Economics." In the second term he will present the "Potential Theory." The courses of Professor Evans and Dr. Fisher are in addition to the usual summer offerings of the department of mathematics.

IN connection with the celebration in London of the Faraday centenary, planned by the Royal Institution and the British Association of Electrical Engineers, the managers of the Royal Institution would be glad to hear of personal relics, apparatus and manuscripts of Faraday, and those who possess any such objects and are willing to lend them for exhibition

are asked to communicate with the General Secretary, Royal Institution, 21, Albemarle-street, W.1.

THE Board of Trustees of Stanford University has received and accepted an offer from an unknown donor to contribute \$2,500,000 toward the erection of a building for the Medical School on the condition that the university arrange to endow the same with not less than \$1,250,000. The university must raise this sum on or before February 1, 1932.

By the will of Colonel Henry W. Sackett, authority on libel law, who died December 9, 1929, Cornell University will receive over \$500,000. Colonel Sackett graduated from Cornell and was a trustee of the university. The bulk of the bequest is to be utilized for the protection and improvement of the landscape beauty of the campus at Ithaca. Columbia University, where Colonel Sackett lectured, received a \$12,000 fund to establish a senior scholarship for the School of Journalism.

DR. JOSÉ ALBERT, professor of the department of pediatrics in the University of the Philippines College of Medicine, Manila, recently gave his private collection of scientific books to the library of the Bureau of Science. This library is said to contain 125,000 volumes, including 600 current medical periodicals and 16,000 medical books and pamphlets.

By the will of Dr. John E. Teeple, the chemical engineer, who died on March 23, bequests of \$10,000 to the Carnegie Institution of Washington, \$10,000 to the American Chemical Society, and \$20,000 to Cornell University will be received after the death of Mrs. Teeple.

HARVARD UNIVERSITY, Boston, will receive \$20,000 by the will of Mrs. Frida Adler, widow of Dr. Isaac Adler, the money to be held in trust and the income used to "provide once in three years a prize for the best piece of original research produced within that period in the United States or Canada on any subject within the medical or allied sciences." The awards are to be known as the Isaac Adler Prizes.

DR. GANESH PRASAD, Hardine professor of higher mathematics in the University of Calcutta and president of the Calcutta Mathematical Society, has handed over to the society notes of the value of Rs. 1,400 for the creation of an endowment for the purpose of awarding a prize and gold medal in memory of his daughter.

GROUND was broken on April 17 for the construction of the Whitney Wing of the American Museum of Natural History by President Henry Fairfield Osborn. This new addition to the museum buildings, which connects with the Roosevelt Memorial under

erection by the State of New York, will be devoted in its entirety to exhibition of oceanic birds and will include aviaries for living birds so that intensive study of their habits may be made, also laboratories and study rooms. The building is due to the generosity of the late Harry Payne Whitney, who donated \$750,000 on the condition that the city contribute an equal amount. For eleven years Mr. Whitney maintained an expedition among the South Sea Islands in search of all forms of oceanic and island birds, and during this work there have been secured many species new to science and a number which were hitherto thought to be extinct. This field work, which has been directed by Dr. L. C. Sanford and Dr. R. C. Murphy, has had as leaders in the field such well-known collectors as Rollo H. Beck, Jose G. Correia and Hannibal Hamlin. At the present time Mr. William F. Coultas is at the Island of Kusaie, in the Japanese Mandate region, continuing the work.

Museum News reports that the Royal Ontario Museum, Toronto, has under construction a new wing which will provide over 134,000 square feet of floor space. This will more than double the present floor space for exhibits. The completed structure will resemble the letter "H," the new east wing being connected with the old by a cross bar. The east wing will house the four museums of geology, mineralogy, paleontology and zoology, besides furnishing space for offices, workrooms, storage, lecture rooms, and a tea room. The cross bar and the whole of the existing building, which is to undergo extensive alterations, will be occupied by the museum of archeology. To the south of the cross section, between the two wings, will be built a one-story garden court to house important monumental stone sculptures from China, which have not as yet been on exhibition owing to lack of space. Each of the five museums is readily accessible from the rotunda at the entrance of the new wing. The cost of the new building together with the proposed alterations to the present one will be in the neighborhood of \$2,000,000, and will be borne by the Province of Ontario.

THE National Geographic Society, Washington, D. C., has announced plans for an addition to the society's headquarters at Sixteenth and M Streets. The new building will extend along a 135-foot frontage on Sixteenth Street. It will house the society's scientific collections, its library of current geography and rare collection of historic voyages and travels, also the world's largest collection of geographic photographs, and the editorial rooms of its official journal *The National Geographic Magazine*. As designed by Arthur Heaton, architect, and approved by the United States Fine Arts Commission, the additional structure will carry out the general scheme of

the older headquarters building in the Italian renaissance style. The central motif will be a colonnade portal and ornamental pediment, with balancing wings of the building on each side.

THE report of the Royal Scottish Museum, Edinburgh, for the year 1930 states, according to the *London Times*, that the attendance of visitors continues to increase, the total for 1930 being 518,369, compared with 516,661 in the previous year. Lectures of an educational character on art and natural history for children of schools under the education authority were attended by 5,708 children in classes, and the museum is becoming more and more the resort, in their leisure hours, of children who have attended the lectures. It is no unusual sight to find little independent groups of children making notes or sketches of the exhibits in the museum. The collection of early scientific instruments gathered from all parts of the continent by the late Sir John R. Findlay is being exhibited in the Armour Hall of the museum. It must rank, the report remarks, as one of the finest collections of such objects, on account of the discrimination and taste shown by the collector.

AN institute of physicochemical biology at Paris was inaugurated recently with fitting ceremonies, according to the *Journal* of the American Medical Association. The institute is a three-story building adjacent to the Radium Institute. Its foundation is due to the generosity of Mr. Edmond de Rothschild, who contributed \$2,000,000 to the project. The erection of the building, together with its equipment, has cost \$600,000. The institute has large laboratories, well lighted and provided with the most modern equipment. Under the directorship of Professors Jean Perrin, Georges Urbain, Pierre Girard and André Mayer, it will afford the best opportunities for research to physiologists, chemists and physicists engaged in the study of phenomena pertaining to life from the point of view of their particular science. Mr. Edmond de Rothschild, who was a friend of Claude Bernard, hopes in this manner to aid in the realization of the program of study that this eminent physiologist marked out for himself and his successors, namely, to discover the relationships between vital phenomena and physicochemical forces.

THE Board of Trustees of the University of Illinois has adopted new requirements for entrance to the College of Medicine. Hereafter the students admitted must have gained an average of 3.5 in all pre-medical work. This means practically that the students selected will be from the upper third of their classes.

A CORRESPONDENT writes: "There is much variation in the pronunciation of chemical words. One chemist says "ām'-ide," "ā'-quē-ōūs" and "mōl'-ē-cūle," for example, and the next one to speak, unless he is very

polite, is likely to say "ă-mīde'," "ă-quē-ōūs" and "mol'-ē-cūle." It would be good to have some authoritative standards. Dictionaries differ. Teachers who have occasion to lecture both to student classes and to other audiences and chemists who are being called on to broadcast radio talks are feeling in particular the need for guidance. Accordingly an effort is being made by the Committee on Nomenclature, Spelling and Pronunciation of the American Chemical Society to determine usage for a considerable number of chemical words and with the aid of men experienced in phonetics and other phases of dictionary work it is hoped that some standards can be set up. This effort will require wide cooperation. A questionnaire and a list of words with various pronunciations have been mailed to many chemists. Those who are interested in this subject and would like to help in the work by checking the word list can obtain a copy by writing to the chairman of the committee, E. J. Crane, editor of *Chemical Abstracts*, Ohio State University, Columbus, Ohio."

THE *Journal* of the American Medical Association reports that Senator Guglielmo Marconi, president of the *Consiglio nazionale delle ricerche*, has reported to the Italian prime minister the activities developed during the year by the National Research Council in connection with public health and the program of studies for 1931. The committee on medicine will continue its investigations on irradiated foods, on rheumatism and on ancylostomiasis. It will study, also, the epidemiology of typhoid. The committee on biology has undertaken an inquiry on alimentation, which it will extend on a large scale to various regions and social classes. It will continue also the inquiry on the chemical composition of the food products of Italy, which when completed will permit the compilation of tables showing such composition, which to-day do not exist. On the basis of such tables it will then be possible to recommend suitable rations for the various classes of the civil and military population. The council has called attention to the need of scholarships for research workers, in order that they may devote themselves to scientific research that affects the progress of the nation.

THE sixth annual field course of the International Summer School of Geology and Natural Resources will go west through Canada and return east through the northern United States. The party, which will be led by Professors R. M. Field and Erling Dorf, will leave Princeton on July 27 and return about September 2. Following the established policy of the school, each locality visited will be demonstrated by one or more local authorities. The principal places to be visited are as follows: Silurian section at Niagara Falls; Pleistocene at Toronto; Mines and Pre-Cam-

brian section at Cobalt; Economic geology, mines and smelter at Noranda; Minaki; general geology of Jasper Park; Pleistocene and Tertiary at Vancouver and Victoria; lumber and forestation at Seattle and Longview; general geology at Spokane; copper mines at Butte; general geology of the Yellowstone Park. The final week of the course will be spent in the Big Horn Basin region, when the party will have an excellent opportunity to study remarkably striking examples of structural and stratigraphic geology. The men eligible for the course include: American university undergraduates who have had at least one course in college geology; American and foreign graduate students, and American and foreign instructors or professors of geology, and professional geologists. Applications should be sent to Professor Richard M. Field, Princeton University.

THE usual field course of the Louisiana State University will be held at Grand Isle, Louisiana, at the foot of Barataria Bay from June 12 to August 12. The group is made up of students from the state and surrounding states and independent workers from other sections who are interested in the gulf fauna and flora. Small problems on research are under way on questions of economic importance to the state; and some results have been achieved with the cooperation of the State Conservation Commission. This summer there will be guest lecturers from other schools in the state.

AFTER a successful trip of about 2,000 miles into the interior from Shanghai, the Marshall Field Zoological Expedition to Southern China has arrived in the mountains above Mouping in the province of Szechwan and begun the collecting of rare animals for Field Museum of Natural History. This was learned on April 2 in a report, dispatched by courier, from Floyd T. Smith, leader of the expedition. Large parts of the journey on the Yangtse River and its tributaries were made in native hand-propelled boats and other long stretches were made afoot. Mr. Smith, who is from Long Island, N. Y., is the only white man on the expedition. He is accompanied by about forty native hunters and skinners. A whole fleet of the small paddled boats was necessary to carry his caravan up the Yangtse, Ya and Min Rivers. On the land sections of the journey a long train of pack animals was employed to carry supplies. An immediate object of the expedition is to collect specimens of the rare goat-antelope called the takin, and one of these animals has already been obtained. Specimens of many other kinds of animals have also been collected. The expedition is to make a systematic survey of several years' duration in a number of provinces of southern China, some of which have never before been thoroughly explored.