partment. Study of the igneous rocks will be carried on by Dr. Edward H. Watson, of the Johns Hopkins University. The stratigraphy and structure of the mountains will be studied by Professor Lewis B. Kellum and Mr. Ralph W. Imlay, of the University of Michigan.

The survey of the San Carlos Mountains with a view to coordinating detailed studies made by specialists in several branches of natural science was planned by Professor Kellum who made a preliminary reconnaissance of the district several years ago.

The party will spend the months of July, August and September in the field. They will make the entire trip from Michigan to Mexico and return by automobile. Each member will work independently and will have with him a mobile camp outfit. The cars can be used in the mountains between points suitable for camps. Side trips into the less accessible portions of the range must be made on horseback and on foot.

The execution of this project has been made possible by grants of $2,500 from the National Research Council and $2,000 from the Faculty Research Fund of the University of Michigan. The scientific results of the expedition will be published as a University of Michigan publication.

PLANS FOR THE NEW BIOLOGICAL LABORATORY AT HARVARD UNIVERSITY

PLANS for the new Harvard biological laboratory have been made public by the architects, Messrs. Coolidge, Shepley, Bulfinch and Abbott, and it was announced at the same time that work on two of the three wings of the building will be started in the early fall. The building of the third wing will wait on the raising of further sums of money. It is believed that this building, when completed, will be the finest and most scientifically equipped laboratory for biological research and study that has as yet been erected in this country.

The new building will be on Divinity Avenue, Cambridge, between the Farlow Herbarium and the Semitic Museum, and adjoining the present University Museum. When completed it will form a quadrangle, balancing that of the University Museum.

Designed as a research laboratory, the building will afford scientifically arranged quarters for the four departments of the division of biology, including botany, physiology and zoology and the Bussey Institution. The architecture is in the modernized Georgian style, in keeping with the surrounding buildings. It is five stories high, with red brick exterior walls on a reinforced concrete frame and white steel casement fenestration.

Two wings of the building, the right and center wings, with a combined length of approximately six hundred feet, will be constructed at this time. The left wing will be part of the proposed future addition, and with its completion a quadrangular court will be formed.

The interior of the building will provide the most complete and comprehensive facilities for the exacting and innumerable experiments of modern biological research. There are convenient laboratories of one, two, three and four units furnished with every imaginable service, rooms where the temperature can be kept indefinitely at any desired stage, rooms far underground where no outside sound can penetrate, aquarium rooms, excellently equipped photographic studios and dark rooms.

Lecture and seminar rooms are conveniently situated on all floors and in addition an auditorium seating a hundred and fifty is placed opposite the main entrance lobby. Not the least of the difficulties encountered in providing for the great numbers of laboratories and lecture rooms was the question of ventilation. An elaborate system of ducts, operated by machines on soundproof platforms in the top story, changes the air in the entire building continuously.

A large greenhouse is provided upon what would ordinarily be the roof, with arrangements for sun-seeking and shade-seeking plants and stone walls with water running down them for such plants as make their homes in water.

An unusual feature is a frieze running around the building above the upper tier of windows, formed of projecting copper-covered bosses, each showing one of the symbols of biological science.

SCIENTIFIC NOTES AND NEWS

HARVARD UNIVERSITY at its commencement exercises on June 19 conferred honorary degrees with the following citations: William Morton Wheeler—Eminent as zoologist and dean of the Bussey Institution, profound student of the social life of insects, who has shown that they also can maintain complex communities without the use of reason.—Doctor of Science. Karl Taylor Compton—A professor of physics, renowned for his contributions to its latest mysteries, the new president of the Massachusetts Institute of Technology.—Doctor of Laws.

UNION COLLEGE has conferred honorary degrees on Dr. Albert Wallace Hull, research physicist at the Research Laboratories of the General Electric Company,

and on Dr. George L. Streeter, director of the department of embryology of the Carnegie Institution at the Johns Hopkins University.

THE doctorate of laws was conferred on Edward Ray Weidlein, director of the Mellon Institute of Industrial Research, at the commencement exercises of the University of Pittsburgh.

THE University of Michigan has conferred the degree of doctor of science on Dr. Alfred F. Hess, clinical professor of pediatrics at University and Bellevue Hospital Medical College, New York City, in recognition of his work on the activation of foods and sterols by means of ultra-violet irradiations.

PROFESSOR W. D. MACMILLAN, of the University of Chicago, was given the honorary degree of Sc.D. by Lake Forest College on June 7. He delivered the commencement address on "A New Interpretation of the Old Heaven."

AT the one-hundred and first annual commencement of Illinois College on June 11, the honorary degree of doctor of science was conferred on Dr. James Bertram Overton, professor of plant physiology at the University of Wisconsin, and on Dr. George Elmer Shambaugh, professor of otolaryngology at the Rush Medical School, Chicago.

REAR ADMIRAL RICHARD E. BYRD was elected an honorary fellow of the American Museum of Natural History, the highest distinction within the gift of the trustees, at a meeting held on June 19.

DR. HENRY S. PRITCHETT, president of the Carnegie Foundation for the Advancement of Teaching since its organization in 1905, has presented his resignation to take effect on August 1. He will be succeeded by Dr. Henry Suzzallo, who is a trustee of the foundation and was formerly president of the University of Washington. As president of the Teachers Insurance and Annuity Association, Dr. Pritchett will be succeeded by Professor James W. Glover, chairman of the department of mathematics of the University of Michigan.

DR. HENRY T. FERNALD, head of the department of entomology and director of the graduate school at the Massachusetts Agricultural College, will retire from active duty as professor emeritus at the end of June after thirty-one years of service. The department of entomology will be combined with the departments of zoology and geology, of which Professor C. E. Gordon is the head. Professor F. J. Sievers, director of the experiment station, will also direct the graduate school.

THE director and secretary of the Science Museum, London, Colonel Sir Henry G. Lyons, has been reappointed to hold his present office until October, 1933. Sir Henry Lyons was originally due to retire last October, on attaining the age of sixty-five years, but he was invited by the Board of Education to retain his post for a further year.

PROFESSOR HARRY E. CLIFFORD, since 1909 Gordon McKay professor of electrical engineering, has been made dean of the Harvard Engineering School, to succeed the late Hector J. Hughes, who died on March 1.

DR. M. T. TOWNSEND, associate professor of histology at the University of Oklahoma Medical School, has been appointed head of the department of biology at Illinois Wesleyan University, Bloomington.

DR. REGINALD D. MANWELL, of the School of Hygiene and Public Health of the Johns Hopkins University, has been appointed assistant professor of zoology at Syracuse University.

DR. CYRIL DARYLL FORDE has been appointed to succeed Professor H. J. Fleure in the chair of geography and anthropology at the University College of Wales, Aberystwyth.

DR. FIELDING H. GARRISON, now librarian of the William H. Welch Medical Library of the Johns Hopkins University, has been appointed resident lecturer in the history of medicine.

DR. BRADFORD WILLARD has resigned his position as assistant professor of geology at Brown University, to become associate geologist with the Topographic and Geological Survey of Pennsylvania.

DR. CHAS. M. A. STINE, chemical director of the E. I. du Pont de Nemours and Company, has been made vice-president and member of the executive committee. He is succeeded as chemical director by Dr. Elmer K. Bolton, who has been assistant chemical director under Dr. Stine.

DR. ARCHIBALD T. MCPHERSON, of Marceline, Missouri, has been appointed chief of the rubber section of the organic and fibrous materials division of the Bureau of Standards. Dr. McPherson will direct the section formerly headed by Mr. P. L. Wormelley, who has been called upon to take charge of the new section of specifications and testing. The change will become effective on July 1.

DR. HAROLD C. BRYANT, of Berkeley, California, has been appointed head of the new branch of education and research in the National Park Service. His official title will be assistant to the director and headquarters will be in the Washington office. Although his appointment will be effective on July 1, Dr. Bryant will not go to Washington until the fall, spending the intervening time in studying various natural history problems in the field.

DR. J. H. DELLINGER, chief of the radio section of the U. S. Bureau of Standards, was appointed official representative of the Institute of Radio Engineers at the seventh plenary meeting of the International Electrotechnical Commission in Copenhagen, Stockholm and Oslo, from June 27 to July 9. Dr. Dellinger sailed on June 17. It is hoped to hold the meeting of 1933 in the United States.

DR. EUGENE PASCU, of the University of Budapest, has been appointed assistant professor in the department of chemistry of Princeton University.

DR. FRANK BLAIR HANSON, professor of zoology in Washington University, is on leave of absence for the school year 1930–31. After July 1 he may be addressed care of The Rockefeller Foundation, Paris.

DR. D. J. HEALY, of the department of animal pathology at the University of Kentucky, has been granted a leave of absence for several months to go to Harvard University at the invitation of Dr. Roy Graham Hoskins, where he will be associated with Dr. Hoskins in work to develop technic in studying mineral metabolism and the functions of ductless glands.

DR. STANLEY D. WILSON, professor of chemistry and dean of the College of Science of Yenching University, Peiping, China, will spend the year 1930–31 in study and research chiefly at the University of Chicago.

AT the Polytechnic Institute of Brooklyn, N. Y., Professor Vladimir Karapetoff, of Cornell University, and Dr. Ernst Weber, lecturer in the Technical School at Berlin, Charlottenburg, have been appointed visiting professors of electrical engineering. Dr. Weber takes the place of Dr. Bernard Hague, who returns to the University of Glasgow. Professor Clyde Whipple, assistant professor of electrical engineering, has been given a year's leave of absence to enable him to serve as visiting professor at Princeton University.

DR. WILLIAM H. WELCH is visiting Pasadena, California, in order to make a study of the collection of books of the fifteenth, sixteenth and seventeenth centuries in the Harry E. Huntington Library.

AMONG foreign men of science who are expecting to visit the United States under the auspices of the International Institute of Education are Dr. Arthur Haas, professor of physics, and Dr. Eugen Oberhummer, professor of geography, both of the University of Vienna, and Dr. Basil M. Bensin, of the Agricultural Association of the Czechoslovak Republic.

PROFESSOR R. A. MORTON, of the University of Liverpool, lectured at the Iowa State College from June 11 to 13. His lectures dealt with the study of absorption spectra and applications of this study to chemistry and to biological problems. Dr. Filippo Silvestri, director of the College of Agriculture at Portici, Italy, delivered a series of lectures on economic entomology from June 16 to 19.

MR. C. F. KETTERING, of the General Motors Corporation, Dayton, Ohio, has given to Antioch College $200,000 for the study of certain phases of photosynthesis. Dr. O. L. Inman will be in charge of the investigation, which is planned as a ten-year research project.

AT the annual dinner of the faculty and alumni of Rush Medical College of the University of Chicago, on June 10, it was announced that Dr. Frank Billings, for many years professor of medicine and dean of the faculty, has given $100,000 to establish four fellowships at Rush Medical College. They are to be named in honor of Drs. Edwin R. Le Count, professor of pathology; Ernest E. Irons, dean and professor of medicine, and Wilber E. Post and Rollin T. Woodyatt, clinical professors of medicine.

THREE fellowships in fisheries research have been provided at the University of Michigan by the Michigan Division of the Izaak Walton League of America, and two additional fellowships are offered by the Institute for Fisheries Research. These involve both field and laboratory studies on some practical fishery problem in Michigan. The stipend varies from six hundred to twelve hundred dollars.

MR. AND MRS. CHARLES P. HOOD, of Boston, have made a gift to the University of New Hampshire of $125,000 to be used at the discretion of the trustees.

AN appropriation of $6,500,000 for the extension of the natural history building of the Smithsonian Institution would be authorized under the provisions of a bill (S. 3970), passed by the House on June 16. The bill would provide for additions to the east and west wings of the National Museum.

THE cornerstone laying ceremonies of Ryder Hall, the new electrical engineering laboratory of Union College, Schenectady, took place on June 14 in connection with the one hundred and thirty-fourth commencement. Harold Russell Ryder, New York, donor of the building, laid the cornerstone. Dr. Edwin W. Rice, Jr., trustee of the college and honorary chairman of the directors of the General Electric Company, officially presented the building to the college, and it was accepted by President Frank Parker Day.

THE forty-eighth annual meeting of the American Ornithologists' Union has been announced for the week beginning October 20, at the Peabody Museum at Salem, Massachusetts.

AT the last meeting of the College of Medicine of the University of Illinois Chapter of Sigma Xi, seven candidates for active membership and six candidates for associate membership were initiated. Dr. Lloyd Arnold presented his results on "An Experimental Study of Host Susceptibility to Vibrio Cholera Infections." For the ensuing year the following officers were elected: Dr. William F. Petersen, *president;* Dr. W. J. R. Camp, *vice-president;* Dr. William H. Welker, *secretary;* Dr. I. Pilot, *treasurer,* and Dr. Hugh A. McGuigan, *elective member of executive committee.*

AN appropriation of $50,000 to enable the Secretary of Agriculture to purchase a collection of moths and butterflies owned by the late Dr. William Barnes, of Decatur, Illinois, has been recommended by President Hoover. The collection, which consists of 473,000 specimens, would be housed in the National Museum.

THE American Engineering Council announces the appointment of a committee to cooperate in the publication of a new edition of "Who's Who in Engineering." The function of the committee, according to Mr. Lawrence W. Wallace, executive secretary of the council, is "to provide such advice on the qualifications of engineers as will enable the publishers to issue a work which shall be authoritative." The members of the committee are: R. F. Schuchardt, chief electrical engineer, Commonwealth Edison Company, Chicago; John S. Conway, Washington; Dr. Harry A. Curtis, Department of Chemical Engineering, Yale University; C. R. Dooley, Standard Oil Company, New York City; Colonel Frank M. Gunby, associate, Charles T. Main, Inc., Boston; Arthur Huntington, Iowa Railway and Light Corporation, Cedar Rapids, Iowa; B. A. Parks, Byron E. Parks and Son, Grand Rapids, Michigan; Dr. H. S. Person, managing director, Taylor Society, New York City; Dean A. A. Potter, School of Engineering, Purdue University, Lafayette, Indiana; George S. Rice, chief mining engineer, U. S. Bureau of Mines; F. F. Sharpless, consulting engineer, New York City; Robert Sibley, executive manager, California Alumni Association, University of California; Major Brehon B. Somervell, district engineer, U. S. Engineer Corps, Washington. The committee represents membership in the following societies: American Institute of Chemical Engineers, the American Institute of Electrical Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Agricultural Engineers, the American Society of Civil Engineers, the American Society of Mechanical Engineers, the Grand Rapids Engineers Club, the Society of American Military Engineers, the Society of Industrial Engineers and the Taylor Society.

DISCUSSION

THE QUESTION OF THE CENTRAL BODIES

IT has been suggested of late that the so-called central bodies (centrosomes, centrioles) long ago made known by Flemming, Van Beneden and Boveri, and later studied by many other expert cytologists, have no objective existence in the living cell—that they are, in fact, either coagulation-artifacts or the offspring of an unholy union between random granules in the cell and an over-developed will to believe on the part of the observer. Could this be substantiated, it would constitute an important discovery—psychological as well as cytological—and assuredly the questions thus raised should have every opportunity for critical test. In the meantime, I will briefly indicate some of the grounds for thinking that the central bodies may for the present maintain a modest footing in respectable biological society.

Two of the classical objects that have played a leading part in the development of our knowledge in this field are the germ-cells of the nematode *Ascaris megalocephala* and of the annelid *Chaetopterus,* the former having long ago provided the material for the pioneer researches of Van Beneden, Boveri and Brauer, the latter for the important later work of Mead. Both these cases are now in course of reexamination in the Columbia Laboratory. The work of H. P. Sturdivant, dealing especially with the sperm-forming divisions in *Ascaris,* and later to be reported by him in detail, has produced decisive confirmation of the most essential results concerning the central bodies made known by Boveri, O. Hertwig and Brauer. The case of *Chaetopterus,* including the history of the central bodies in maturation, fertilization and cleavage, is being reviewed by the writer in a study of Mead's original preparations and drawings, a large number of which have generously been placed in my hands for the purpose. Many of these preparations, as might be expected after thirty-four years, are now badly faded, though they show good promise of successful restaining. Fortunately, however, a sufficient number have retained their original brilliancy to make possible a close study, with the best modern optical apparatus, of all the essential phenomena recorded by Mead in 1898; and in a number of cases a thorough examination could be