

it is possible to remove groups of individual cells from the living body, and grow them in the body juices in such a way that their behavior can be watched under the microscope. This growing of groups of living cells is known as "tissue culture," and has constituted a great step forward in the study of living cells and consequently in the investigation of diseases. He has employed this method to trace the development of embryonic cells into differentiated cells, and his transplantations of pieces taken from an embryo into another place, or even into a different embryo, have elucidated much that was previously obscure.

Managing editor of the *Journal of Experimental Zoology* since its foundation in 1904, Dr. Harrison was the first to observe directly the outgrowth of the nerve fiber, showing that it is a mode of protoplasmic movement. His links with zoologists in this and other countries are many. He is a member of the National Academy of Sciences and the American Philosophical Society, a fellow of the American Academy of Arts and Sciences, and has been honored by scientific societies of Germany, France, Italy, Norway and Austria.

Professor Harrison's most intimate connections, how-

ever, are through the students trained in the Osborn Zoological Laboratories at Yale. During his directorship a total of 58 Ph.D. degrees have been conferred upon students from the department of zoology, of whom some forty are now professors in twenty-five institutions. In addition, post-doctoral research students come each year to Yale University to study his technique. In recent years they have included investigators from China, Russia, Belgium, France, Germany, etc.

The lectureship to which Professor Harrison has been invited was founded by William Croone, a successful practising physician and lecturer to the Company of Surgeons in London, who contributed information far in advance of his time on muscular physiology and the embryology of the chick. He was one of the founders of the Royal Society and in the remarkable group of its early members, which included Sir Isaac Newton, Sir Christopher Wren, Halley, the astronomer, and the two great diarists, Evelyn and Samuel Pepys, his contributions to the discussion of the society are noted in the records.

## SCIENTIFIC NOTES AND NEWS

THE University of Wisconsin will confer, at the annual commencement exercises on June 19, the doctorate of laws on Dr. Arnold Sommerfeld, professor of mathematics at the University of Munich, and the doctorate of science on Dr. James Aston, professor of mining and metallurgical engineering at the Carnegie Institute of Technology, Pittsburgh.

THE degree of Sc.D., *honoris causa*, will be conferred by the University of Cambridge on the Marchese G. Marconi and on Sir Frederick Gowland Hopkins, Sir William Dunn professor of biochemistry.

THE University of Liverpool has conferred the degree of doctor of science on Dr. Geoffrey Ingram Taylor, Yarrow research professor of the Royal Society.

FOR the development and promotion of agricultural exploration and the introduction of new and valuable plants into the United States, the committee on the Marcellus Hartley Fund of the National Academy of Sciences has awarded its Public Welfare Medal to Dr. David Fairchild, of the Division of Foreign Plant Introduction, Bureau of Plant Industry of the U. S. Department of Agriculture. The medal is given for "eminence in the application of science to the public welfare."

FOR chemical research work of high significance as pure science and of equally high value in its practical application, two research workers, Dr. F. B. La Forge and Dr. H. L. J. Haller, of the U. S. Depart-

ment of Agriculture, have been awarded the Hillebrand Prize of the Chemical Society of Washington, for the determination of the chemical structure of rotenone, a new substance used in insect poisons.

DR. DAVID EUGENE SMITH, professor emeritus of mathematics at Teachers College, Columbia University, has been decorated by Persia for his study of the mathematical works and philosophy of Omar Khayyam.

DR. E. D. MERRILL, director of the New York Botanical Garden, was elected a foreign member of the Linnean Society of London at the meeting on May 11.

DR. C. TATE REGAN, director of the British Museum (Natural History), has been elected a foreign member of the Royal Danish Academy.

A WIRELESS dispatch to *The New York Times* states that Professor Albert Einstein, who has received a professorship in the Collège de France, has been proposed for membership in the French Academy of Sciences. After favorable discussion, the proposal was postponed for inquiry as to whether Professor Einstein's election was possible under the academy's rules, which state that before a foreigner can be named as an associate member he must first have served as a corresponding member.

At a special dinner on May 5 at which the faculty of Harvard University and the governing boards of the university and of the Peter Bent Brigham Hos-

pital were present, a portrait of Dr. Harvey Cushing, who recently retired from the Moseley professorship of surgery at the university and as surgeon-in-chief of the hospital, was presented to the hospital, and a portrait of Dr. Henry A. Christian, Hersey professor of the theory and practise of physic and physician-in-chief to the hospital and from 1908 to 1912 dean of the medical school, was presented to the university.

INFORMAL exercises were held on May 21 in the Chemistry Library at the University of Illinois in connection with the presentation of portraits of three of its distinguished chemists, Professor A. W. Palmer, Professor S. W. Parr and Professor W. A. Noyes, by the Association of Illinois Chemists to the University of Illinois. Professor Palmer was head of the department of chemistry from 1894 to 1904, Professor Parr was professor of applied chemistry from 1890 to 1926, and Professor Noyes was head of the department from 1907 to 1926. Dr. Norman W. Krase, who had charge of the arrangements for the painting of the portraits, presided. Professor Roger Adams, head of the department of chemistry, after speaking briefly of the history of the department and of the accomplishments of Professors Palmer, Parr and Noyes, presented the portraits to the university. President Harry Woodburn Chase accepted the portraits. Professor W. A. Noyes related some of the facts connected with the development of the chemistry department with which he has been so long associated.

PROFESSOR CHARLES F. SCOTT, for twenty-two years chairman of the department of electrical engineering at Yale University, will retire from active teaching in June. His colleagues held a reception on May 19 in his honor, when Professor Russell H. Chittenden, formerly director of the Sheffield Scientific School, presented a collection of letters of congratulation and appreciation.

DR. H. A. BUEHLER was the guest of honor at a testimonial dinner at Rolla, Missouri, on May 10, in celebration of his twenty-fifth anniversary as state geologist of Missouri. He was appointed to this position in May, 1908, and has served continuously since that time. Dr. Buehler's distinguished services to the state and particularly his participation in the development of the mineral industry of Missouri were reviewed by a number of speakers.

DR. FELIX D'HERELLE has resigned from the professorship of bacteriology which he has held at Yale University since 1927. While in residence Dr. d'Herelle confined himself largely to the study of bacteriophagy as a laboratory phenomenon, since suitable clinical material was lacking. It is the hope of elaborating his work in the clinical field, possibly at

the new institute for infectious diseases at Tiflis, Russia, which now takes him abroad.

DR. LOREN ROSCOE CHANDLER, of the department of surgery at the Stanford Medical School, has been appointed dean to fill the vacancy caused by the recent death of Dr. Henry G. Mehrtens.

PROMOTIONS at Yale University include Dr. Harry Martin Zimmerman to a professorship of pathology and Dr. Dirk Brouwer to an assistant professorship of astronomy.

THE Senate of Queen's University, Belfast, has appointed Mr. P. T. Crymble to the chair of surgery in succession to Professor Andrew Fullerton.

*Nature* states that Dr. M. Dixon has been appointed to the university lectureship in biochemistry, established in connection with the scheme for the employment of the Rockefeller benefaction to the University of Cambridge, and Dr. E. G. Holmes has been appointed to the university lectureship vacated by Dr. Dixon.

DR. FRITZ KNOLL, of Prague, has been appointed professor of botany at the University of Vienna.

THE following new full-time appointments have been announced in the School of Medicine, George Washington University: Edward Bright Vedder, professor of experimental medicine and executive officer, department of pathology and experimental medicine; Dr. William Henry Waller, instructor in anatomy; Dr. Jesse Harmon, instructor in biochemistry; Dr. Hubert Scott Loring, instructor in biochemistry; Dr. James Leslie Snyder, instructor in pathology, and Dr. John Ralston Pate, teaching fellow in anatomy.

DR. JAMES ANGUS DOULL, head of the department of public health and hygiene of the School of Medicine of Western Reserve University, Cleveland, sailed from Vancouver on May 25, to spend the summer establishing experimental work for the Leonard Wood Memorial Foundation for the Eradication of Leprosy in the Philippine Islands. Dr. Doull will work at Culion and Cebu, where the foundation has leper colonies.

DR. E. D. MERRILL, director of the New York Botanical Garden, will attend the fifth Pacific Science Congress, Victoria and Vancouver, B. C., as an official representative of the U. S. Government, the National Academy of Sciences, the American Philosophical Society and the New York Botanical Garden.

PROFESSOR ARTHUR H. COMPTON gave a public lecture at the University of Iowa on May 12 on "Cosmic Rays on Six Continents." He also gave two technical lectures on May 12 and 13 on "Some Recent Experiments with Cosmic Rays."

DR. OSCAR RIDDLE, of the department of genetics of the Carnegie Institution, on April 28 addressed the Brown University Chapter of Sigma Xi on "Sex and Reproduction," and the Biology Seminar on "Hormones of the Anterior Pituitary."

DR. CHARLES R. STOCKARD, professor of anatomy, Cornell University, gave a lecture at the hospital of Duke University on the "Peculiar Form and Type in Man and Animals" on April 8; on May 3 Dr. Otto H. F. Vollbeahr lectured on old and rare books, and on May 15 Dr. Arthur Steindler, professor of orthopedics in the State University of Iowa, gave a clinic on "The Low Back."

DR. ROBERT P. FISCHER, secretary and chief chemist of the Board of Pharmacy of the State of New Jersey, will deliver the commencement address to the graduating class of the Connecticut College of Pharmacy at New Haven, on the evening of June 5. His subject will be "Pharmacy's Contribution to Public Health Service."

THE Bakerian lecture of the Royal Society was delivered on May 25 by Dr. J. Chadwick, who took as his subject "The Neutron."

THE Geological Society of Chicago held its last spring meeting on May 18. The speakers were Dr. Theo. A. Link, Imperial Oil Company, and Professor C. A. Heiland, Colorado School of Mines, whose subjects, respectively, were the exhibits of petroleum geology and of geophysical methods at the Century of Progress Exposition at Chicago.

THE annual initiation dinner and meeting of the New York University Chapter of the Society of the Sigma Xi was held on May 19 at the University Faculty Club. Mr. Barnum Brown, curator of fossil reptiles at the American Museum of Natural History, addressed the society on "Dinosaurs of North America, Particularly Those of the Cretaceous Period." At this meeting twenty-three new members were inducted. Officers were elected for the next academic year as follows: *President*, Professor R. R. Renshaw; *Vice-president*, Professor Charles W. Lytle; *Secretary-Treasurer*, Professor Harry G. Lindwall.

THE luncheon given by Section C and the Chicago Chemists Club at the time of the meeting of the American Association for the Advancement of Science will be at 12:30 on Tuesday, not Thursday as stated in the preliminary announcement.

A SYMPOSIUM on "Nationalism" will be held by Section L of the American Association for the Advancement of Science in the auditorium of the Chicago Historical Society at Chicago on Monday, June 26, at 8:00 p. m. This has been organized by

means of assistance generously provided by Dr. Duren J. H. Ward and the Far Reaching Foundation of Denver, Colorado. The presiding officer will be Professor James A. James, of Northwestern University, and the speakers and their subjects will be: Professor Bernadotte E. Schmitt, University of Chicago, "Nationalism in European History Since the Times of Napoleon"; Dr. Charles A. Beard, president of the American Historical Association, "Nationalism in American History"; Dr. Albrecht Mendelssohn Bartholdy, director of the Institute of Foreign Affairs, Hamburg, "Imperialism, Nationalism and International Peace." The discussion will be led by Professors Bernard Fay, of the Collège de France, and Charles E. Merriam, of the University of Chicago.

A ONE-DAY conference on problems relating to death from asphyxiation was held at the New York Academy of Medicine on May 24, under the auspices of the Society for the Prevention of Asphyxial Death. Dr. Paluel J. Flagg, president of the society, was chairman of the conference. Dr. Linsly R. Williams, director of the Academy of Medicine, delivered an address of welcome. The speakers included Health Commissioner Shirley W. Wynne, Dr. Harrison P. Martland, medical examiner for Essex County, New Jersey; Albert W. Whitney, associate general manager of the National Bureau of Casualty and Surety Underwriters; Dr. Daniel J. Donovan, chief surgeon of the New York City Police Department, and Dr. Yandell Henderson, professor of applied physiology of the Yale University Medical School.

THE annual excursion of the Physiographers and Geographers Club of New York City took place on May 20 as a bus trip for the purpose of studying the Triassic Basin of New Jersey, under the guidance of Dr. Bertram T. Butler, of the College of the City of New York. All the rock formations of the Triassic were studied in various quarries, the intrusive Palisade and Sourland Mt. ridges were visited as well as the surface lava flows forming the Watchung ridges. The large river systems, including the Delaware, were surveyed. Several volcanic centers, as Cushtunk Mt. and Bellvale, were included. Professor J. E. Woodman, of New York University, is president of the club; the secretary is Dr. Anna Welnitz. An innovation was the taking of moving pictures covering the details of the Triassic structures.

As previously announced, the undergraduate instruction in forestry at Cornell University is to be abandoned, and such work is to be concentrated in Syracuse University. Now it is officially stated that the Syracuse University College of Agriculture is to be discontinued.

THE Board of Estimate of New York City has

voted to set aside a plot of city-owned land in Manhattan Square, near the American Museum of Natural History, as a site for the museum's planetarium, a project to be financed through a Reconstruction Finance Corporation loan. The board stipulated that when the construction cost of the project is repaid through fees collected from the public, the property should revert to the city. The R. F. C. has approved a loan contingent upon the city's providing the site. Trustees of the museum recently organized an American Museum of Natural History Planetarium Authority to direct the project, naming the Mayor and other city officials to serve with officers of the museum.

THE sum of 2,000,000 kronas (about \$400,000), has been bequeathed for the purpose of erecting a building for the Technical Museum of Stockholm by the "Knut and Alice Wallenberg Foundation," created by the Swedish banker, Knut A. Wallenberg, and Mrs. Wallenberg. The conditions attached to the donation are that the government should place building space at the disposal of the museum free of cost and that the work in order to reduce unemployment should be begun as soon as possible, in any case before the end of 1934. According to Science Service the Technical Museum of Stockholm is at present temporarily housed in the Royal Swedish Institute for Engineering Research, the head of which is Commercial Counsellor Axel F. Enström, one of its active supporters. The director, T. Althin, has gradually brought together a collection of objects and exhibits illustrating the origin, history and development of the present technical methods and inventions. The majority of these objects owing to lack of space has been stored in different parts of the city, but will now be exhibited in the new museum. It will be constructed in three stories with a floor space of about 8,000 square meters and will, when ready, be the leading institution of its kind in the north. It will also contain spacious lecture rooms and a library.

AN expedition to Guadelupe, an island belonging to Mexico and lying off the coast of Lower California, to hunt specimens of elephant seal, largest of all seals, for a proposed group to be installed at the Field Museum of Natural History, sailed from San Diego, California, on May 28. The expedition is being made aboard the yacht *Velero III*, a 1,000-ton ship about 200 feet long, owned and commanded by Captain G. Allan Hancock, of San Diego, who has placed the vessel at the disposal of the museum for this expedition. Captain Hancock and Dr. Harry M. Wegeforth, president of the Zoological Society of San Diego, have made all arrangements for carrying out the project. Two members of the Field Museum staff, Julius Friesser and Frank C.

Wonder, joined the expedition at San Diego. The government of Mexico has issued permits to the expedition to collect the giant seals, which are rare and are under protection to prevent their extermination.

NINETEEN fellowships have been awarded by the New York State College of Forestry for the years 1933-34. Each scholarship carried a grant of \$500. Two men have been given a one-semester award in order to complete their work. Six of the scholarships will be for a Ph.D. degree and the balance for master's degrees. These men are considered by the faculty to be especially qualified to take up advanced work. All recipients of the fellowships agree to give instructional assistance or do routine departmental work not to exceed fifteen hours a week. The holder of the fellowship is expected to devote his full time for the period of his appointment as outlined by the committee on scholarships.

*Museum News* states that the Newark, New Jersey, Museum has curtailed its activities as a result of a cut in the city appropriation from \$100,000 to \$65,000. Eighteen trained staff members and eight other assistants have been dropped from the rolls. Salaries have been cut 25 per cent. The lending work of the educational department, which last year made 32,000 loans of objects to Newark schools, has been discontinued, also the work of the extension department through which loans of small exhibits have been made to stores, churches and other organizations. The museum will be open to the public from 12 to 5 daily, except on Mondays. Daily gallery talks and the hobby work will be continued and the museum's activities centered on making as full use as possible of the museum building and equipment.

THE *London Times* reports that Dr. A. Maher, Keeper of the Irish Antiquities in the National Museum, Dublin, in the course of excavation work at Store Park, Ballyglass, County Mayo, on Saturday unearthed a stone cist, containing the skeleton of a man of powerful build, about 6 feet high. The find turned out to be a cist burial of the early Bronze Age, dating back 3,000 years. In the same cist a small clay-baked urn, which differs from any in the National Museum and is decorated with strange markings, was discovered. From the position of the bones it appears that the man was buried in a crouched position, the typical manner in which the dead were placed in Ireland during the Bronze Age. The skeleton and urn have been acquired for the National Museum, and will be scientifically examined in the near future. This is the second Bronze Age burial to be discovered in this neighborhood in the same week.