

in the morning sessions. The afternoons will be devoted largely to informal conferences on a variety of topics concerning both experimental and theoretical physics and to sports. A picnic dinner will be held one evening in Enfield Glen, a gorge that contains many interesting geological features. One morning will be given over to the presentation of ten-minute contributed papers by members of the society. The remainder of the formal program will consist of invited papers.

At one of the sessions certain features of modern astrophysics will be presented by Dr. S. A. Mitchell, director of the McCormick Observatory, University of Virginia, who will discuss "Atomic Structure under Conditions of Temperature and Pressure found at the Sun's Surface," and by Dr. J. Q. Stewart, of the Princeton University Observatory, whose subject will be "The General Problems of Astrophysics with Special Reference to the Opacity of Gases."

Among recent developments in physics three topics of widespread interest will be considered in papers entitled: "Secondary Structure of Crystals," by Professor F. Zwicky, of the California Institute of Technology; "Improvements in Technique in the Study of the Raman Effect with Particular Reference to Excitation by Single Lines," by Professor R. W. Wood, of the Johns Hopkins University, and "X-Ray Scattering and Atomic Structure," by Professor Arthur H. Compton, of the University of Chicago.

An address that will be of special interest to scientists in general will be given by Sir William Bragg, director of the Royal Institution of Great Britain, who will speak on "Faraday's Diary."

With a limited formal program, it is hoped that those attending the meeting will have an opportunity, often lacking at more crowded meetings, for getting better acquainted and for leisurely discussion of scientific topics.

On the day before the program begins at Ithaca, those attending the meeting have been invited by the Corning Glass Works to be their guests at a luncheon at Corning, N. Y., and to visit the factories at Corning and at Wellsboro, Pennsylvania.

ESTABLISHMENT OF THE INSTITUTE FOR ADVANCED STUDY

PLANS are announced for the establishment and endowment of the "Institute for Advanced Study." The fundamental conception underlying the plans is

set forth in a letter addressed by Mr. Louis Bamberger, formerly head of L. Bamberger and Co., of Newark, and his sister, Mrs. Felix Fuld, wife of Mr. Bamberger's late partner, to those who will be trustees of the institute for its first year.

The Institute for Advanced Study will provide facilities with which eminent men of learning may devote themselves to research and the training of advanced students for and beyond the degree of doctor of philosophy or other professional degrees of equal standing. This, therefore, will be exclusively a post-graduate institution.

Mr. Bamberger and Mrs. Fuld propose to provide the institution with an initial endowment of \$5,000,000 to which they expect to make further additions to an extent which they hope will provide adequately for the purposes of the institute.

Dr. Abraham Flexner, formerly secretary and director of the Division of medical education of the General Education Board, will serve as the first director of the division of medical education of the services as members of the faculty and staff of outstanding and most promising teachers in their respective fields.

The institute will be located in Newark or its vicinity. At its inception it will probably occupy temporary quarters while plans for permanent buildings and equipment are being developed, while the faculty and staff are being selected and the organization work of the institute is being effected.

The trustees for the first year are the following:

- DR. FRANK AYDELOTTE, president of Swarthmore College.
- EDGAR S. BAMBERGER, of Newark, N. J.
- LOUIS BAMBERGER, one of the founders.
- DR. ALEXIS CARREL, member of the Rockefeller Institute.
- DR. ABRAHAM FLEXNER.
- DR. JULIUS FRIEDENWALD, of Baltimore, Maryland.
- MRS. FELIX FULD, one of the founders.
- JOHN R. HARDIN, of Pitney, Hardin and Skinner, Newark.
- THE HONORABLE ALANSON B. HOUGHTON, formerly U. S. Ambassador to Germany and later to Great Britain.
- THE HONORABLE HERBERT H. LEHMAN, Lieutenant-Governor of New York.
- SAMUEL D. LEIDESDORF, of S. D. Leidesdorf and Co., New York City.
- HERBERT H. MAASS, attorney-at-law, New York City.
- DR. FLORENCE R. SABIN, member of Rockefeller Institute.
- PERCY S. STRAUS, of R. H. Macy and Co.
- DR. LEWIS H. WEED, dean of the medical faculty of the Johns Hopkins University.

SCIENTIFIC NOTES AND NEWS

A PORTRAIT by Mr. Ralph Clarkson of Professor Eliakim Hastings Moore, head of the department of mathematics in the University of Chicago, given to

the university by his former students, colleagues and friends, will be hung in the new Eckhart Hall of Mathematics, Physics and Astronomy.

At the commencement of the University of California, the honorary degree of doctor of laws was conferred on Florian Cajori, the historian of mathematics, on Harvey Wiley Corbett, the architect, and on Frederick Hanley Seares, the astronomer.

THE University of Oxford will confer on June 23 the honorary doctorate of science on Sir Arthur Keith.

PROFESSOR ALFRED HETTNER, of the University of Heidelberg, is the twenty-seventh recipient of the Cullum Gold Medal of the American Geographical Society, New York City. The medal is awarded from time to time to those "who distinguish themselves by geographical discoveries or in the advancement of geographical science." Presentation of the medal will be made at the University of Heidelberg by Ambassador Sackett, who will represent the society.

DR. CARL E. GUTHE, director of the Museum of Anthropology at the University of Michigan, was awarded the Lapham Medal for distinguished service in anthropological research at a meeting of the central section of the American Anthropological Association held in Milwaukee on May 10.

PROFESSOR M. L. FERNALD, of Harvard University, has been elected a member of the Societas Phytogeographica Suecana. Professor Fernald will spend the summer in England and France, studying types of American plants. In August he will read an invitation paper at the fifth International Botanical Congress at the University of Cambridge.

PRESENT and former students of Dr. Wilder D. Bancroft, professor of physical chemistry at Cornell University, are planning a testimonial dinner in his honor on Saturday, June 21, at Ithaca. This dinner will be given after the close of the Colloid Symposium.

DR. FRANK BILLINGS will be the guest of honor at a banquet to be given by alumni of Rush Medical College at the Statler Hotel in Detroit on Wednesday, June 25, at 7 p. m. Moving pictures of the old Rush Medical College and of the new University of Chicago medical buildings, of the faculty and of the alumni will be shown.

THE board of managers and the medical advisory board of the National Jewish Hospital at Denver gave a dinner on May 27 in honor of the seventy-fifth birthday of Dr. Henry Sewall, professor of medicine emeritus in the University of Colorado.

THE insignia of a knight of the first class of the National Order of St. Olaf has been conferred on Dr. Augustus Trowbridge, dean of the graduate school of Princeton University, by Haakon VII, King of Nor-

way, in recognition of his work in assisting the Norwegian government to obtain funds from international sources for the erection of the Arctic Observatory.

THE president and council of the Royal Society have recommended the Prime Minister, Mr. MacDonald, and General Smuts for election into the society under the special statute which permits the election of "persons who, in their opinion, either have rendered conspicuous service to the cause of science, or are such that their election would be of signal benefit to the society."

THE services which have been rendered to the science of botany by Dr. George Claridge Druce, of Oxford, were honored on May 23, his eightieth birthday, when he was presented by Lord Grey of Falldon, on behalf of the Botanical Exchange Club and Society of Great Britain, with a check. With this gift Dr. Druce intends to acquire a plot of land, which will be handed over later to the Society for the Preservation of Nature Reserves or to the National Trust for the special purpose of preserving a plant that is now rare in the British Isles. The ceremony of presentation took place at a reception which was given to Dr. Druce in the Great Central Hotel in presence of a large company. Sir Maurice Abbot-Anderson was in the chair. Messages were received from universities and botanical gardens at Paris, Geneva, Copenhagen, Bergen, Brussels, Vienna, Harvard and New York, and from many English societies, including the Royal Horticultural Society and the Gilbert White Fellowship. Dr. Druce was the guest at a luncheon given in his honor by Lord and Lady Buxton at which the speakers included the chancellor of the University of Oxford and Lord Grey.

DR. HOWARD E. SIMPSON, of the State University of North Dakota, was elected to succeed Professor Robert M. Dolve, of the State Agricultural College, as president of the North Dakota Academy of Science at the recent annual meeting held in Fargo. Dr. G. A. Abbott, of the State University, was re-elected secretary, a position in which he has continuously served for several years.

MR. JAMES D. SISLER, associate state geologist of Pennsylvania, has been elected state geologist of West Virginia, and will assume his work at Morgantown, West Virginia, on July 1.

DR. HELEN THOMPSON WOOLLEY, professor of education and director of the Child Development Institute of Teachers College, Columbia University, has presented her resignation to take effect on September 1.

AT Yale University, Dr. Mark A. May has been appointed director of the statistical bureau of the

Institute of Human Relations. Professor Walter R. Miles and Dr. Catherine Cox Miles, of Stanford University, have been appointed research associates in psychiatry and psychology. Both have been assigned to the Graduate School, the School of Medicine and the Institute of Human Relations.

DR. SAMUEL T. ORTON has been appointed professor of neurology and neuropathology at the College of Physicians and Surgeons of Columbia University and Dr. Henry A. Riley has been appointed professor of neurology and neuro-anatomy.

DR. DAVID McCLELLAN DE FOREST, assistant professor of zoology at the University of Tennessee, has been appointed to the faculty of the American University at Beirut, Syria, as adjunct professor in zoology, for the academic year 1930-31.

DR. W. T. THOM, JR., of Princeton University, has resigned from the U. S. Geological Survey, and will divide the summer between university research and field studies contributing to a research project sponsored by the American Association of Petroleum Geologists. This latter project deals with the regional structure of the Dakota sandstone in the Northern Great Plains and Foothills regions, and is being pursued because of the light it may shed upon the causes and results of mountain building.

MR. J. M. F. DRUMMOND, regius professor of botany in the University of Glasgow, has accepted an offer of appointment as Harrison professor of botany and director of the botanical laboratories in the University of Manchester.

MR. J. S. L. GILMOUR, of Clare College, has been appointed curator of the herbarium and botanical museum of the University of Cambridge for five years.

M. G. FAYET, director of the observatory at Nice, has been appointed membre titulaire of the Bureau des Longitudes in succession to the late M. Andoyer.

PROFESSOR KARL JOHANN FREUDENBERG, of the University of Heidelberg, has been appointed Carl Schurz Memorial Professor at the University of Wisconsin for the second semester of the coming school year, beginning on February 9, 1931. Professor Freudenberg's chief researches have been along the lines of the chemistry of the tannins; lignins and cellulose; sugars; insulin, and stereochemistry. He will give two series of lectures on selected topics in advanced organic chemistry and will take a few well advanced students for research. Such students should have had previous experience in research in organic chemistry. Applications for permission to do such work should be addressed to Professor J. H. Mathews,

chairman of the department of chemistry. The lectures will be open to students who have had a full year's course in organic chemistry.

DR. WILLIAM MORRIS DAVIS, professor emeritus of physiography at Harvard University, is leaving Tucson, Arizona, and will spend the summer at the University of Oregon.

DR. A. C. LAWSON, professor of mineralogy and geology and dean of the college of mining at the University of California, has gone to Europe to attend the Walther celebration and in the interest of the program of the International Geological Congress in 1932. He is chairman of the program committee.

DR. ARTHUR KEITH, chairman of the division of geology and geography of the National Research Council, has sailed for Europe to attend the centennial of the French Geological Society.

DR. WILFRED H. OSGOOD, curator of zoology at Field Museum of Natural History, has returned from London where he has been engaged in research at the British Museum in connection with specimens of rare animals obtained by the recent William V. Kelley-Roosevelts Expedition to Eastern Asia for Field Museum.

DR. F. M. HAYES, professor of veterinary science in the University of California, will spend several months in Europe, with the object of studying, chiefly at the University of Giessen, bovine tuberculosis and Bangs disease. Dr. Hayes will attend the International Veterinary Congress in London during August, and later hopes to be present at the International Institute of Tuberculosis in Oslo, Norway.

PROFESSOR HOMER W. SMITH, of University and Bellevue Medical College, is on leave of absence as Fellow of the John Simon Guggenheim Memorial Foundation to visit Siam, Sumatra and Borneo, where he plans to study kidney function, the composition of the body fluids and allied biochemical problems in fresh-water elasmobranchs and terrestrial fishes.

DR. HANS BECKER, lecturer in geology in the University of Leipzig, is working at the University of Wisconsin on sedimentation under Professor W. H. Twenhofel, of the department of geology.

DR. JOHN C. MERRIAM, president of the Carnegie Institution, gave the commencement address at New York University on June 11.

At the convocation exercises of the graduate school of Brown University on June 14, Dr. Edwin Grant Conklin, of Princeton University, Henry Fairfield Osborn professor of biology at Princeton University, will be the speaker. The title of his address will be "Science and the Future of Man."

PROFESSOR F. K. RICHTMYER, of Cornell University, gave the address at the initiation meeting of the Society of Sigma Xi at Ohio State University on May 15. He also spoke before the physics seminar on "Secondary X-ray Spectra."

PROFESSOR CARL J. DRAKE, of the Iowa State College, Ames, lectured on "The European Corn Borer" in Davenport on May 16, the lecture being given by the Davenport Public Museum with the cooperation of the agricultural agents of ten surrounding counties in Iowa and Illinois.

DR. W. E. CASTLE, of the Bussey Institution, Harvard University, gave an address on May 21 on "The Significance of Sexuality in Organisms" before the Brown University Chapter of Sigma Xi at Providence.

DR. A. C. LANE, Pearson professor of geology and mineralogy, emeritus, at Tufts College, spoke on "The Age of the Earth" through the National Broadcasting Unit at 245 E Street, Washington, D. C., for Science Service on June 6. He has been consultant in science for the Library of Congress for this semester.

DONATIONS from the Rockefeller Foundation totaling \$887,500 to Johns Hopkins University for the increased support of the biological sciences, and \$100,000 for "a fluid research in the humanities," have been announced by President Joseph S. Ames. For the biological sciences \$387,500 will be given over a period of ten years and \$500,000 at the end of this period. The money for research in the humanities is to be given over a period of five years. The work in biology to be supported is being done by the following: Dr. Raymond Pearl, who has been director of the Institute of Biology, which has been financed over a five-year period ending this year. He will become professor of biology in the School of Hygiene and Public Health at the beginning of the next scholastic year. Dr. H. S. Jennings, Henry Walters professor of zoology and director of the laboratory; Dr. Duncan S. Johnson, professor of botany and director of the laboratory, and Dr. Burton E. Livingston, professor of plant physiology and director of the laboratory.

MR. JOHN D. ROCKEFELLER, JR., has offered to the city of New York a sixty-acre tract in Washington Heights, in northern Manhattan, for a public park, and has offered to spend about \$5,000,000 to make the tract, valued at \$7,000,000, suitable for public purposes. Mr. Rockefeller tendered the \$12,000,000 gift in a letter to Mayor Walker, who characterized it as "a very gracious offer."

MR. JOHN D. ROCKEFELLER, JR., has contributed \$200,000 toward the cost of a building for botany at the Botanical Gardens and Natural History Museum,

Paris, where it is planned to establish an International Botanical Institute. The French Government has also promised to contribute \$200,000 and subscriptions are being sought to the amount of \$320,000.

YALE UNIVERSITY will eventually inherit more than \$200,000 of the estate of Edward Anthony Bradford, editorial writer of *The New York Times*, who died in 1928.

FROM the profits from the sale of German dyes turned over to the United States by the Reparations Committee in 1920, Princeton University, Massachusetts Institute of Technology and the Philadelphia Textile School have received a total amount of over \$400,000 to be used for scientific research divided as follows: Princeton University, \$124,233; Massachusetts Institute of Technology, \$28,057, and the Philadelphia Textile School, \$248,507.

FORTY-THREE engineers and industrial executives, headed by Professor Robert Sibley, of the department of mechanical engineering of the University of California, sailed on June 3 to attend the second International Power Conference in Berlin to be held from June 16 to 25. The conference, which has been called by the German Government, will be attended by representatives of forty-seven nations. It is the outgrowth of a similar meeting held in London six years ago. A special effort is to be made at this year's conference to start a movement to regulate and standardize legal problems arising from international use of power resources.

ON May 9 and 10 the Nebraska Academy of Sciences held its fortieth annual meeting at Peru, Nebraska, State Teachers College, jointly with the Nebraska section of the Mathematics Association of America and the Nebraska Council of Geography Teachers. Lectures on the general program of the academy included: "Fossil Flora and Fauna of Nebraska," by Dr. E. H. Barbour, of the University of Nebraska; "The Use of Physical and Physico-Chemical Measurements in the Sciences," by Dr. F. E. E. Germann, of the University of Colorado; "Our Solar System and how we got it," by Dr. D. W. Morehouse, president of Drake University, and "Biological Aspects of Rocky Mountain National Park," by Dr. R. J. Pool, of the University of Nebraska. The outgoing president of the Nebraska Academy is Dr. A. E. Holch, professor of botany in the Nebraska State Teachers College, Peru. The newly elected officers are Dr. H. H. Marvin, of the University of Nebraska, *president*; Dr. H. von W. Schulte, of Omaha, *vice-president*; Professor M. P. Brunig, of the University of Nebraska, *secretary*, and Professor P. K. Slaymaker, of the University of Nebraska, *treasurer*. The meeting of the Nebraska Academy

in 1931 will be held in Lincoln and the 1932 meeting in Omaha.

THE New York State Geological Association held its sixth annual field meet at Union College, Schenectady, N. Y., on May 16 and 17, under the presidency of Professor Edward S. C. Smith. The first day was spent north of Schenectady near Saratoga and Schuylerville. The Precambrian, Cambrian and Ordovician rocks were studied. The Cryptozoon ledge, diabase dike cutting Grenville sediments, the overthrust at Bald Mountain and Stark's knob at Schuylerville were of special interest. That evening at the Mohawk Golf Club, President Day and Professor Emeritus Stoller, of Union College, addressed the geologists. Professor Stoller spoke of the Pleistocene and Post-Pleistocene drainage changes in the immediate region. On Saturday, the Helderberg escarpment and the Schoharie district were visited, a region of particular interest to paleontologists. Fossils were collected from the Devonian and Silurian outcrops. In the evening the members of the New York State Museum

were hosts to the geologists in the museum in Albany. Two hundred students and their instructors, representing twenty-four educational institutions, attended the field meet. Next year the association plans to meet in the Mineville-Port Henry district of the Eastern Adirondacks. Professor Harry N. Eaton, of Elmira College, was elected president, and Professor O. D. von Engeln, of Cornell University, secretary.

THE annual field excursion of the section of geology of the Ohio Academy of Science was conducted in eastern Ohio on May 30, 31 and June 1. Special attention was given to the physiographic features of Guernsey, Belmont, Monroe and Noble Counties. Studies were also made of the stratigraphy of the Pennsylvanian and Permian systems, and the structure of the Cambridge anticline and the Parkersburg-Lorraine syncline. Fifty-seven people participated in the excursion, which was conducted by Wilber Stout, state geologist, and Paris B. Stockdale, vice-president of the section of geology of the Ohio Academy of Science.

DISCUSSION

RACE MIXTURE AND PHYSICAL DISHARMONIES

PROFESSOR H. S. JENNINGS in his recent book on "The Biological Basis of Human Nature" devotes a chapter to the subject of race mixture and its consequences. Considering first the purely physical results, he mentions both advantages and disadvantages resulting from wide racial crosses. As an advantage he reckons hybrid vigor and the covering up in the immediate offspring of any recessive defects which may be present in either parent race. As a disadvantage he mentions possible disharmony in details of structure. It is to this latter point that I wish to give brief consideration, as it is a matter of considerable biological importance apart from its human interest.

Jennings says, on page 280:

Working probably to the disadvantage of some race mixtures in man is the fact that certain human races differ in such ways that union of their characteristics may yield combinations that are in details inharmonious. In the mixture of races found in the United States, as Davenport¹ has pointed out, some of the stocks differ greatly in physique from others. Some are smaller, having organs that go with a small body—small heart, small kidneys, small jaws, small teeth; such on the whole are the races that come from the Mediterranean region of Europe. Others have large bodies, with large kidneys, heart, jaws, teeth, and other organs.

Judging from what occurs in other organisms, when such diverse races are crossed, the offspring, receiving

genes from both sides, may well develop combinations of parts that lack complete harmony. If a large body is combined with small kidneys, the latter may be insufficient for the needs of the individual. Or a large body might be combined with a small heart that would not keep the blood properly circulated. Large teeth, resulting from the genes of one parent, may be crowded in a small jaw that results from the genes of the other parent. In consequence the teeth decay. Partly to it, Davenport (by whom the examples given above are suggested) ascribes the prevalence of defective teeth in the United States. According to him, crowded and defective teeth are less common in nations with races less mixed.

It is difficult to measure with certainty lack of harmony between body size and size of kidney or heart, so that direct proof that the possible inharmonious combinations mentioned above actually occur in man as a result of mixture of races is not available. But the occurrence of inharmonious combinations of certain bodily parts as a result of race crossing has been observed both in man and in other organisms. A striking case of this kind in the dog—comic rather than tragic in its consequences—is described by Lang.² A great St. Bernard dog was crossed with a dachshund. Some of the progeny had the large heavy body of the St. Bernard, resting on the short crooked legs of the dachshund. The result (figure 49) was neither beautiful nor efficient.

The occurrence of inharmonious combinations, in human race crosses, has been shown with respect to parts of the body that are measurable, in the recent study

¹ C. B. Davenport, "The Effects of Race Interbreeding," *Proc. Am. Phil. Soc.*, 56: 364-368, 1917.

² A. Lang, "Experimentelle Vererbungslehre," Vol. I, p. 727, 1914.