cise character of these radiations is not yet completely known. They appear to consist primarily of highly energetic particles, coming in from outer space. Thus, in a sense, they are not phenomena of the upper atmosphere. However, the scientists observe them most effectively in that region, and we have the best chance of observing them in their original state at the highest levels. As the rays descend, the filtering action of air molecules changes the characteristics of the powerful primary rays into secondary particles of lesser energy.

Cosmic rays possess sufficient energy to disrupt atomic nuclei. Thus, scientists consider them one of the primary tools for the study of nuclear forces and reactions. The short-lived mesons, whose masses are intermediate between those of electrons and nuclei, are of special interest.

Because of the fact that primary cosmic rays—some of them at least—possess a positive charge, the magnetic fields of the earth and the sun exert a focusing action upon the radiations. For this reason a redetermination of the magnetic field of the sun is extremely important.

There is even a possibility that changes in the solar magnetic field may, in some way, be responsible for the origin of cosmic rays. However, this recently made suggestion is extremely tentative.

The rapidly accumulating knowledge of conditions in the upper atmosphere will be especially useful at the time —which perhaps is not as far away as the more pessimistic have supposed—when jet or rocket planes may fly their way through the ionosphere. There is a decided acceleration of interest in the problems and information that comes from the indirect studies. Meteors, which are high-speed projectiles from outer space, give valuable data concerning the density, temperature, and pressure in the levels. The echoes of radio signals from the ionospheric layers contribute information of great value. Studies of terrestrial magnetism at high altitudes, measurement of brightness of the sky, and studies of solar radiation in general, all contribute to the knowledge.

NEWS and Notes

Leif Verner, who has been head of the Department of Horticulture at the University of Idaho for the past 14 years, will relinquish his administrative duties on July 1. He will be succeeded as department head by **James E. Kraus**, a member of the department since 1941. This change, effected at Dr. Verner's request, will enable him to devote full time to research and teaching in pomology.

Arthur W. Hixson, executive officer of the Department of Chemical Engineering, Columbia University, since 1940, retired this month. He has been succeeded by **Thomas B. Drew**, a member of the department since 1940 and a consultant to Brookhaven National Laboratory.

Charles M. Goss, professor of anatomy, School of Medicine, Louisiana State University, has been elected editor-in-chief of the *Anatomical Record.*

A. Henry Fretz, associate professor of geology at Lehigh University, will retire at the end of this month. Prof. Fretz has been a faculty member at Lehigh for the past 30 years.

Gottfried S. Fraenkel, lecturer at the Imperial College of Science and Technology, London, and widely known student of insect physiology, has been appointed professor of entomology at the University of Illinois.

F. Homburger, chief of the Department of Clinical Investigation and associate of the Sloan-Kettering Institute for Cancer Research, New York City, has been appointed research professor of medicine at Tufts College Medical School, Boston, and director of the newly created Cancer Research and Cancer Control Unit of the Department of Surgery. Beginning July 1 Dr. Homburger will have his office at the Joseph H. Pratt Diagnostic Hospital, 30 Bennet Street, Boston.

Carroll C. Pratt, professor and chairman of the Department of Psychology, Princeton University, received an honorary D.Sc. degree from Clark University at its recent Commencement exercises.

Robert B. Platt, of the Department of Botany, University of Pennsylvania, has been appointed assistant professor of biology at Emory University and will assume his duties in September.

Bryan L. Wade, director of the U. S. regional vegetable breeding laboratory in Charleston, South Carolina, has been appointed head of the Department of Horticulture, University of Illinois College of Agriculture. Dr. Wade succeeds **M. J. Dorsey**, head of the department for the past 8 years, who will retire on September 1.

Ivan E. Miles, director of the Soil Testing Division of the North Carolina State Department of Agriculture for the past 9 years, has resigned to become agronomist with the Extension Service of the Mississippi Agricultural Experiment Station, beginning July 1.

Hans A. Bethe, professor of physics at Cornell University, will join the Columbia University faculty as visiting professor in September. Dr. Bethe will give a graduate lecture course in advanced nuclear physics and a seminar on the theory of mesons. While at Columbia he will also join in the research work with the 400,000,000-volt cyclotron, now being completed at Irvington-on-the-Hudson.

Grants and Awards

A research program in adolescence, recently given support by the W. T. Grant Foundation, is to be carried on at Phillips Academy, Andover, Massachusetts, under the direction of J. Roswell Gallagher, school physician. The investigations will be in the fields of orthopedics, psychology, and physiology. It is contemplated that a yearly grant of $10,000 will be continued for a period of 5 years.

The Board of Trustees of the Rockefeller Foundation has made a grant of $45,000 to Princeton University for research on the psychology of perception, under the direction of Carroll C. Pratt. The grant covers a three-year period beginning June 1, 1948. Certain of the studies will be done in collaboration with Adelbert Ames, Jr., and will make use of apparatus which he has designed at the Hanover Institute.

The Association for the Study of Internal Secretions has just announced the following awards:

The Squibb award for 1948 has been conferred on Fuller Albright, of Harvard Medical School, who has made outstanding contributions on the functions of several of the hormones in man in health and disease. The Committee on Awards notes that "in many diseases such as hyper- and hypoparathyroidism, certain renal disorders, a variety of diseases of bone, and the diseases of the adrenal glands, our knowledge of internal medicine has been enriched by his investigations. Throughout his work his careful research methods and his lucid teaching have been a valuable stimulus to all his fellow students of endocrinology."

The Ciba Award for 1948 goes to Carl G. Heller, of the University of Oregon College of Medicine, "for his significant contributions to the study of physiology of reproduction, with particular reference to the diagnosis and treatment of disorders of reproduction in man."

The Ayerst, McKenna and Harrison Fellowship for 1948 has been awarded to Ernest M. Brown, Jr., of the George S. Cox Medical Research Institute, University of Pennsylvania. Dr. Brown will work with F. D. W. Lukens on the production of lesions of the islands of Langerhans.

Colleges and Universities

A large-scale research program in soils engineering, being sponsored jointly by Cornell University and the Office of Naval Research, will lead four engineer-investigators to widely separated parts of the world. Donald J. Belcher, Taylor D. Lewis, Charles H. Ladenheim, Raymond J. Hodge, and several graduate assistants in engineering and geology will head the field explorations in Greenland, Alaska, the Aleutian Islands, Europe, North Africa, and the United States. Results of these explorations will be combined with analyses of aerial photographs to determine requirements for construction equipment and the best construction methods for given areas. Soil engineers agree that this method may be used in the development of irrigation, drainage, or transportation systems and for the development of natural and agricultural resources. Emphasis will be placed on the main elements of soil characteristics in aerial photographs which are land form, surface drainage, erosion, and color. A staff of civil engineers and scientists, including several outstanding undergraduate students, are locating and defining land forms and planning a long-term program of exploration.

The Department of Botany, State College of Washington, has announced various additions to its staff which have been made since the beginning of the 1946–47 school year. These include R. F. Daubenmire, formerly of the University of Idaho, as associate professor (ecology); Adolph Hecht, formerly of the University of Chicago, as assistant professor (cytology); and Noe Higinbotham, formerly of the University of Notre Dame and Argonne National Laboratories, as associate professor (morphology). Arthur H. Cronquist, formerly of the University of Georgia, will join the staff September 16 as assistant professor (taxonomy). W. R. Hatch is chairman of the department.

The Goethe Link Observatory, built in 1939 on a high bluff near Brooklyn, Indiana, about 35 miles from Bloomington, by Dr. Goethe Link, of Indianapolis, has been given to Indiana University by Dr. and Mrs. Link. In addition, through the Goethe and Helen Link Foundation for Scientific Research, the University received a bequest of property, income from which will be used to maintain the observatory, the largest and finest in the state. Since its completion, the University's Astronomy Department, of which F. K. Edmondson is chairman, has worked closely with the observatory and has provided the service of James Cuffey, then a research fellow and now assistant professor. Dr. Link's policy of making the observatory available to as many people as possible will be continued, as will the series of public lectures which were inaugurated at his request. The University plans to add various pieces of equipment including a spectograph for use with the 36″ reflector and a 10″ wide-angle camera.

Summer Programs

The Fifth Annual Series of Summer Laboratory Clinics has been announced by the Institute of Polymer Research and the Division of Applied Physics, Polytechnic Institute of Brooklyn. The titles of the lectures and the dates for these clinics will be: June 28–July 9—Industrial Applications of X-Ray Diffraction, July 12–17—Advanced X-Ray Diffraction, August 9–13—Weight and Shape of Macro Molecules in Solution, and August 23–27—Polymerization Techniques. At the June 28–July 9 meeting registrants should have some background in physics, chemistry, and mathematics (including trigonometry), but no previous X-ray training will be expected. All standard techniques may be studied at this meeting. The July 12–17 laboratory course is offered to students who have attended previous summer clinics in X-Ray Diffraction. This course will range over a broad field, but each registrant will arrange in advance the subject matter of his own work. Some of the techniques offered for study are the Weissenberg goniometer, microcamera, small angle scattering, Fourier series, precision determination of lattice constants, and low temperature studies. The subject for discussion at the August 9–13 meeting will be experimental methods and theoretical evaluations of the different methods for molecular weight determination of polymers. For discussion and demonstration at the final meeting, August 23–27, the topic is laboratory techniques of polymerization in bulk, in suspension, and in emulsion. Latest experimental methods of obtaining polymers of high clarity and good color stability will be presented. Inquiries should be addressed to I. Fankuchen, Division of

Applied Physics, or H. Mark, Institute of Polymer Research, Polytechnic Institute of Brooklyn, 85 Livingston Street, Brooklyn 2, New York. Fees for the courses range from $100 to $200.

Reed College, Portland, Oregon, is preparing for its first Northwest Conference on Nuclear Science, to be held June 28–July 16. The broad program is designed to provide technical study for college and research laboratory scientists, a survey for high school science teachers, and orientation for laymen. Technical offerings are expected to cover elementary nuclear physics theory, properties of the elementary particles, elementary pile theory, nuclear physics instrumentation, radiochemistry, some problems and applications of nuclear physics and chemistry, and radiobiology and medicine.

The instructional staff will consist of three staff members of the University of Chicago's Institute for Nuclear Studies—Samuel K. Allison, director; Anthony Turkevich, associate professor of chemistry; and John A. Simpson, Jr., assistant professor of physics. Raymond T. Ellickson, who will succeed A. A. Knowlton as head of the Reed Physics Department next fall, will also be present.

Fellowships

The U. S. Public Health Service has announced that it will award a limited number of mental hygiene research fellowships for graduate work. These fellowships are open to psychiatrists, psychologists, social workers, anthropologists, sociologists, and others who have the proper qualifications. A predoctorate research fellowship carrying a stipend of $1,200 a year ($1,600 a year for those with dependents) is available to those with a bachelor's degree. For those with a master's degree or its equivalent in graduate work the stipend is $1,600 a year ($2,000 for those with dependents). Tuition will also be paid. Medical students who have completed one or two years of medical work may also apply. A postdoctorate research fellowship, to be awarded to qualified individuals holding a doctor's degree in medical or related fields, carries a stipend of $3,000 ($3,600 for doctors with dependents). Tuition fees are not included with this fellowship. Also offered is a special research fellowship to those who qualify for a postdoctorate fellowship and in addition have demonstrated outstanding ability or possess specialized training. This fellowship does not carry a set stipend, the amount being determined in the individual case. Application forms and additional information may be obtained from Division of Research Grants and Fellowships, National Institute of Health, Bethesda 14, Maryland.

Meetings and Elections

The Second Annual Symposium on Applied Mathematics of the American Mathematical Society will be held at the Massachusetts Institute of Technology, Cambridge, July 29–31, with the co-sponsorship of the American Institute of Electrical Engineers, the American Institute of Physics, and the Institute of Radio Engineers. The subject of the symposium is "Electromagnetic Theory." Programs and information concerning accommodations will be mailed early in July to members of the American Mathematical Society and also to others who request them from Associate Secretary T. R. Hollcroft, American Mathematical Society, 531 West 116th Street, New York City 27.

The 25th Annual Plant Science Seminar will be held at the College of Pharmacy, University of Washington, Seattle, from Monday, August 2, until Thursday noon, August 5. The first day and a half will be devoted to scientific papers, discussions, and demonstrations, while the latter part of the meeting will be held in beautiful Mount Ranier National Park, where an excellent botanizing tour of the mountain has been planned. Ralph F. Voigt, University of Illinois College of Pharmacy, chairman of the Seminar, has appointed H. W. Youngken, Jr., local secretary.

The 334th meeting of the American Mathematical Society was held at Columbia University April 16–17. According to T. R. Hollcroft, associate secretary, there was an attendance of about 350, including 306 members. Sixty-three research papers were presented, 28 in person and 35 by title. The two invitation addresses, on "Mathematical Methods in Ancient Astronomy" and "Some Classes of Functions Defined by Difference or Differential Inequalities," were given, respectively, by O. E. Neugebauer, of Brown University, and Charles Loewner, of Syracuse University.

The Second Annual Eastern Colleges Science Conference, which was held at Union College April 23–24 and which had as its theme "Relationships Between Pure and Applied Science," was an extremely successful one. The approximately 150 undergraduates who attended were conducted on tours through the General Electric laboratories on Friday afternoon. The opening address of the Conference was delivered that evening by Leslie F. Nims, chairman of the Biology Department at Brookhaven National Laboratory, on "Biology—A Meeting Ground Between Pure and Applied Science." On Saturday, in addition to the series of papers presented in the fields of chemistry, physics, astronomy, biology, geology, and psychology by undergraduates from the participating colleges, there were demonstrations and exhibits, a talk by Vladimir Rojansky, chairman of Union College's Physics Department, and an address on "Atomic Energy—Some of Its Problems and Possibilities," by Harry A. Winne, vice-president of the General Electric Company. Plans were made for continuing the Conference next year.

The West Virginia Academy of Science held its 1948 meeting at Montgomery, West Virginia, April 30 and May 1, with the West Virginia Institute of Technology serving as host. Approximately 150 Seniors were in attendance and as many, or more, Juniors. The two groups met jointly for the annual banquet, at which time recognition was given to leaders and to prize-winning Juniors. The annual exhibit, or Science Fair, which included displays of scientific apparatus, experimental projects of both high school and college students, and publications of the AAAS, was by far the

most extensive exhibit ever sponsored by the West Virginia Academy.

J. E. Judson, in his presidential address, gave a very thorough and timely discussion of "The National Science Foundation Policy." The evening lecture was delivered by K. Lark-Horovitz, general secretary of the AAAS, who spoke effectively on "Science in a Free Society." This served as a most fitting climax to a worth-while meeting and as an impetus to the execution of future plans of the Academy.

Officers for the coming year are: president, Nelle Ammons, West Virginia University; vice-president, S. Benton Talbott, Davis-Elkins College; secretary, N. Bayard Green, Marshall College; and treasurer, A. H. Van Landingham, West Virginia University.

The Illinois State Academy of Science held its 41st annual meeting in Benton on May 7–8. Hurst H. Shoemaker, secretary, reports that 134 papers were presented in the 12 senior and collegiate sections to a record attendance of 500 persons. Eugene S. Richardson, Jr., of the Chicago Natural History Museum, spoke on "Major Features of Earth Structure" before 350 Junior Academy members. The banquet speaker on Friday evening was Kenneth A. Reid, executive director of the Izaak Walton League, who spoke on "Land and Water Management in the Public Interest." On Saturday over 100 persons took part in biological, geological, industrial, and archaeological field trips. Research grants totaling $260.50 were awarded to William M. Bailey, Bernard Greenberg, J. V. Karabinos, R. Maurice Myers, James M. Sanders, and Sister M. Christine.

Academy officers elected for 1948–49 include: Robert R. Paton, president; Claude U. Stone, vice-president; W. W. Grimm, treasurer; Hurst H. Shoemaker (University of Illinois, Champaign), secretary; Dorothy Rose, editor; and Thorne Deuel, librarian.

Resolutions were passed (1) urging the preservation of certain unique, small, natural areas in the state; (2) recommending a transfer of the conservation agencies of the state to a commission form of government; (3) recommending that the value of the bottom lands along the Illinois River for wildlife and natural basins for the storage of flood waters be considered before approval is given to engineering projects involving further levees and dams; (4) calling attention to the recent neglect of science teaching in our secondary schools; and (5) urging construction of a new State Museum Building.

Deaths

Ernest G. Merritt, 83, emeritus professor of physics at Cornell University, died June 5 in the Tompkins County Memorial Hospital, New York. Prof. Merritt, one of the original editors of *The Physical Review,* had also served as first dean of the Cornell Graduate School and headed the Physics Department from 1919 until his retirement in 1935.

C. Frank Allen, 96, civil engineer and former professor of civil engineering at the Massachusetts Institute of Technology, died June 6.

Edwin Lincoln Moseley, 83, professor emeritus of biology at Bowling Green State University, died June 6 in Bowling Green. Dr. Moseley had attracted national attention by his long-range weather forecasting studies.

Edwin A. Trowbridge, 63, dean of the College of Agriculture and director of the Agricultural Experiment Station at the University of Missouri, died in Columbia on June 7.

John C. Olsen, 78, former head of the Department of Chemical Engineering at the Brooklyn Polytechnic Institute and past president of the American Institute of Chemical Engineers, died June 8 in the Caledonian Hospital, Brooklyn.

William D. Funkhouser, 67, entomologist, head of the Department of Zoology and dean of the Graduate School of the University of Kentucky, died June 9 after an illness of 6 months.

William T. Corlett, 94, president emeritus of Western Reserve University Medical School, died June 11 in Cleveland. Dr. Corlett, formerly a professor of dermatology and syphilology at Western Reserve, was internationally known for his pioneer work in skin diseases.

Leslie Sandholzer, 44, director of the Interior Department's fisheries technological laboratory at the University of Maryland, died June 11 at Prince Georges County Hospital after a long illness.

A program of graduate study has been established at the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Maine. This program, which will be developed in cooperation with leading graduate schools, is designed to make available to qualified candidates for the doctor's degree the Laboratory's genetically unique stocks of mice, rabbits, and dogs. Students must satisfy residence and course requirements of the graduate school of their choice and must be sponsored in research by a member of the Jackson Laboratory staff. Current research at the Laboratory centers on the relation of genetics to normal and abnormal growth processes and to the development of social behavior. Some part-time assistantships are available. Inquiries should be addressed to Graduate Study Committee, Roscoe B. Jackson Memorial Laboratory, Box 78, Bar Harbor, Maine.

Make Plans for—

American Astronomical Society, June 28–July 1, Mount Wilson Observatory, Pasadena, California.

First International Poliomyelitis Conference, July 12–17, Waldorf-Astoria Hotel, New York City.

International Congress of Zoology, July 21–27, Paris, France.

General Assembly and International Congress of the International Union of Crystallography, July 28–August 3, Harvard University, Cambridge, Massachusetts.

American Veterinary Medical Association, August 16–19, Palace Hotel, San Francisco, California.

International Society of Photogrammetry, September 1–10, Amsterdam, Holland.

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AAAS
Centennial Celebration
Washington, D. C.
September 13–17, 1948

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