News and Notes

Conference on Ionospheric Physics

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A conference on ionospheric physics was held at The Pennsylvania State College July 24–27, with an attendance of 236. Twenty technical papers were presented by leading workers in the field from all parts of the world. The conference was sponsored by the School of Engineering of The Pennsylvania State College and the Geophysical Research Directorate of the Air Force Cambridge Research Laboratories. The enthusiasm with which the program was received was very gratifying to the sponsors.

A general survey of the present status of our knowledge of the "Physics of the Upper Atmosphere" was given by S. K. Mitra, of Calcutta, India, and this paper served as a starting point from which subsequent papers could logically proceed.

An extremely interesting, though controversial, subject was discussed by Leiv Harang, of Norway, in his paper, "The Constitution of the Upper Atmosphere as Determined from Auroral Studies." Aurorae have always been of interest to scientists concerned with the study of the upper atmosphere and the ionosphere, and the discussion subsequent to Dr. Harang's paper indicated that existing theories of the origin and effects of the aurorae are far from being universally accepted at present.

The use of rockets as instruments for the investigation of the characteristics of the upper atmosphere has been adopted since the close of World War II, and papers by T. R. Burnight, of the Naval Research Laboratory, and E. W. Beth, of the Air Force Cambridge Research Laboratories, disclosed the progress that has been made in the rocket study programs since their conception. Scientists in the field of upper atmospheric physics have eagerly awaited the results of the rocket measurements—the first ever made by actually having the measuring apparatus at the height of the various ionospheric layers. It was gratifying to note the high degree of agreement obtained between the rocket measurements and previous radio measurements.

Sidney Chapman, of Oxford, England, presented a paper on "Corpuscular Influences upon the Upper Atmosphere." His presence at the conference was enjoyed by all, and more than one reference was made to his invaluable work on the effects of solar radiation on the upper atmosphere.

Some very worth-while work has been conducted in Australia during recent years, and three speakers who took part in the conference have been responsible for most of it. D. F. Martyn, of Canberra, contributed two papers on the dynamics of the upper atmosphere and served as discussion leader for a symposium on the same topic. L. G. H. Huxley, of Adelaide, also presented two papers, one on "The Motions of Very Slow Electrons in Air" and the other on "Ionospheric Cross Modulation." R. v. d. R. Woolley, of Canberra, gave a paper on the "Connection between the Solar Corona and Chromosphere and the Ionosphere."

A considerable portion of the conference was devoted to the important but vexing problems of ionization and recombination processes in the upper atmosphere. Several of the foremost authorities expressed their views on the matter. D. R. Bates, of London, England, J. Sayers, of Birmingham, England, Peter M. Millman, of Ottawa, Canada, and M. H. Johnson, of the Naval Research Laboratory, each presented papers concerning the formation and disappearance of ions and electrons and diffusion in the ionosphere.

Somewhat akin to this subject was the paper "Ionosphere Winds" presented by K. Weekes, of Cambridge, England. Considerable discussion on similarities and differences in methods of measuring winds in the ionosphere and the results obtained from these measurements ensued.

A problem that often comes to the fore in the study of the ionosphere by means of radio waves is that of scattering. Some new ideas were presented by H. G. Booker, of Cornell University, in his paper "Scattering of Radio Waves with an Application to Radio Astronomy." W. Dieminger, of Lindau, Germany, discussed the "Origin of Ionospheric Scattering."

The E layer of the ionosphere has been said to be the most well-behaved of all ionospheric layers, and the one about which we know most; yet, when it is considered in any detail, the existence of many complexities and abnormalities becomes immediately apparent. For this reason, several papers concerned with this topic were invited. The foremost was a paper entitled "Studies of Ionospheric Region E," by W. Pfister, of the Air Force Cambridge Research Laboratories. The paper by M. Nicolet, of Uccle, Belgium, on the "Effects of the Scale Height Gradient on the Variation of Ionization and Absorption" was also appropriate, not only in connection with the E region but also with the problem of ionization in general.

A change from the technical sessions was provided by the after-dinner talk of Lloyd V. Berkner, of the Carnegie Institution of Washington, on "Signposts to the Future of Ionospheric Research."

The high lights of the entire conference were the three symposia held for the purpose of exchanging ideas on recent developments and controversial points. All the topics presented in the papers, and more, were discussed to some extent in these meetings, and it was generally agreed that the symposia, because they allowed free intermingling of ideas and discussions in a somewhat informal atmosphere, were a real success.

Scientists in the News

Recent visitors at the National Bureau of Standards from abroad were: **S. Amari,** Radio Regulatory Commission, Tokyo; **F. L. Brady,** Marley Tile Co., Ltd., Sevenoaks, Kent, England; **Shinzo Okada,** Kyoto University, Japan; and a Swedish plastics group sponsored by the ECA.

F. Warren Bickel, technical director of the Diamond Wire and Cable Company, has been named project leader in a new rubber research laboratory at Armour Research Foundation of Illinois Institute of Technology. In his new position, Bickel will direct compounding operations and evaluation work with the various rubbers and elastomers. He will work with **Alfred G. Susie,** supervisor of rubber and plastics research.

Sigfried Bjerninger, of the Mechanical Engineering Institute of Agricultural Engineering in Sweden, recently visited the Davis campus of the University of California. He is in the U. S. under ECA sponsorship to make a study of wagons, trailers, tractors, blowers, and elevators, pumps for irrigation and for home water supply, automatic water supply systems, hydraulic lifts, and other tools for work simplification. **Costa Tarlatzis,** Department of Diagnosis, Veterinary Bacteriology Institute, Greek Ministry of Agriculture, also visited the Davis campus. Dr. Tarlatzis is studying American methods in veterinary bacteriology and control of animal diseases. **T. O. Bacher,** director of the National Greenhouse Experimental Service of Denmark, has been at Davis to study the work being done there on vegetables, small fruits, and flowers.

Walter M. Boothby, professor emeritus of the Mayo Foundation and a leader in medical research, has joined the staff of the School of Aviation Medicine, Randolph AFB, as research advisor. Dr. Boothby has been advisor on research in aviation medicine and physiology to the Swedish Aviation Medicine Council at the University of Lund for the past two years.

Harry Woodburn Chase, chancellor of the New York University since 1933, will retire on July 1, 1951, at the completion of his 32nd year as a major university administrator —one of the longest records of any figure in the history of American education. He also served as president of the University of North Carolina from 1919 to 1930 and as president of the University of Illinois from 1930 to 1933.

David Davis has joined the staff of the Connecticut Agricultural Experiment Station's Plant Pathology Department, replacing **Richard A. Chapman,** who resigned to become associate plant pathologist at the Kentucky Agricultural Experiment Station, Lexington. Dr. Davis will join the group of station researchers working on the chemotherapy project and will concern himself especially with its application as a control for the Dutch elm disease. One of Dr. Chapman's first projects at the Kentucky station will be an attempt to find a control measure for a root rot attacking the brace roots of corn.

The U. S. Geological Survey reports the arrival of **H. J. Evans,** mining engineer, of Zinc Corporation, Ltd., Melbourne. He will visit in Texas, California, New Mexico, and western Canada until January 1, studying recent developments in the potash, sulfur, oil, and gas industries.

John S. Lea, formerly with the Engineer Research and Development Laboratories, Corps of Engineers, Fort Belvoir, Va., has been appointed editor of the U. S. National Museum, Smithsonian Institution, succeeding **Paul H. Oehser,** who was recently made chief of the Smithsonian's Editorial Division.

Reginald D. Manwell, professor of zoology, Syracuse University, and **J. Fisher Stanfield,** head of the Botany Department, Miami University, were recently elected members of the board of trustees of The Rocky Mountain Biological Laboratory. **A. O. Weese,** professor of zoology, University of Oklahoma, was reelected president of the board for the 14th consecutive year, and **John C. Johnson** was continued as director, having held that position since the laboratory was organized in 1928.

Albert E. Marshall, past president, American Institute of Chemical Engineers, has resigned as vice president of Heyden Chemical Corporation, to open an office in the Industrial Trust Building, Providence, R. I., and resumed practice as a consulting chemical engineer.

Paul F. Russell, malaria adviser of the International Health Division of the Rockefeller Foundation and chairman of the World Health Organization Expert Committee on Malaria, is attending the WHO African Malaria Conference and a meeting of the committee, both in Kampala, Uganda, November 27–December 11. Following these meetings, at the request of WHO, he will also visit other areas of British East Africa, the Belgian Congo, French Equatorial Africa, and British West Africa. Dr. Russell will then establish his headquarters at the Superior Institute of Public Health, Viale Regina Margherita 299, Rome, Italy, as the International Health Division representative in Italy.

Charles H. Schauer has been appointed director of grants of Research Corporation, New York, to succeed **Robert R. Williams.** Mr. Schauer was formerly with the Philadelphia Electric Company, the Office of Scientific Research and Development, and the NDRC. For his work in the latter two positions he was awarded the Presidential Certificate of Merit. Dr. Williams, pioneer in the synthesis of vitamin B_1, the anti-beriberi vitamin, is now on a world tour seeking to better the nutritional status of rice-eating populations. On his return from the Orient next spring he will continue actively in the affairs of Research Corporation as a member of the Advisory Committee on Grants and as chairman of the corporation-administered Williams-Waterman Fund, of which he is co-founder.

John W. Taylor, president of the University of Louisville, has been appointed deputy director-general of Unesco. Dr. Taylor will take up his post in Paris on January 1.

Grants

Grants-in-aid of research in cardiovascular disease and related fields are being offered by the **Louisiana Heart Association.** Application blanks may be obtained from Dr. Russell Holman, chairman, Research and Fellowship Committee, Louisiana Heart Association, Inc., 1430 Tulane Ave., New Orleans. The deadline is *January 2,* and it is expected that the funds will be available July 1. Preference will be given to requests from Louisiana.

The U. S. Public Health Service has awarded $735,854 in teaching grants to U. S. medical schools for wider instruction of students in the best and latest methods for coping with heart ailments. The sum awarded in this program by the **Heart Institute** now amounts to $1,463,814. Psychiatrists, psychologists, nurses, social workers, and medical students in training will be aided by grants totaling $1,915,708 from the **National Institute of Mental Health** (USPHS). In addition, $1,179,003 will be made available to graduate students in the same fields. Twenty-one new mental health research grants, plus renewal of 44 earlier grants, were approved early in November.

Ten industrial grants-in-aid have been received by MIT for use in the extensive development program for education and research in broad areas associated with the technical interests of participating companies. Typical grant-in-aid agreements provide for an exchange of current concepts and techniques in fields of research of common interest. The agreements are an important part of a continuing program designed to stimulate professional associations of mutual benefit to industry and MIT in the advancement of technology. The two largest grants are $100,000 each for a five-year period. These came from the Anaconda Copper Mining Company and its subsidiaries, Anaconda Wire and Cable Company and American Brass Company, and from the Atlantic Refining Company. Other unrestricted grants were from Godfrey L. Cabot, Inc.—$50,000 over two years; Liquid Carbonic Corporation—$50,000 over five years; and North American Aviation—$50,000 over five years. Grants for work in specific fields are: Continental Oil Company—$25,000 for chemical engineering, geology, nuclear science and engineering, and electronics; National Dairy Products Corporation—$30,000 for biology and food technology; Saco-Lowell Shops—$20,000 over a two-year period for metal processing; Sperry Gyroscope Company—$15,000 for two fellowships in electronics and one in aeronautical engineering; and Sylvania Electric Products—$50,000 over five years, for electronics, nuclear science, and engineering.

The Office of Naval Research has made a grant of $5,179 to Joanne Starr Malkus, assistant professor of physics at Illinois Institute of Technology, for meteorological investigations. Primary purpose of the project will be a study of the life histories, structure, and behavior of cumulus clouds, to gain information on the early stages of the formation of such clouds and to make practical analyses of thunderstorms and violent gusts and drafts encountered by aircraft in later stages of cloud development.

A grant for olfactory research has been made to Northwestern University's Medical School by Airkem, Inc. Jules H. Masserman, associate professor of nervous and mental diseases, will conduct the work, which will deal with the olfactory components of neurosis and the influence and effect of smell upon individual reactions and impressions.

Fellowships

Information regarding the **Frank B. Jewett Fellowships** in the physical sciences, announced in SCIENCE, November 17 (page 608), should be obtained from M. B. Long, Secretary of the Jewett Fellowship Committee, Bell Telephone Laboratories, 463 West St., New York 14, and not from J. C. Boyce.

The **Atomic Energy Commission** has announced that 40 graduate students are now receiving training under the AEC special fellowship program in radiological physics. Twenty are at the University of Rochester, and the others are at Vanderbilt University. Fellows asigned to Rochester will complete their course with about two months of field training at an AEC installation. Those at Vanderbilt will move to the Oak Ridge National Laboratory after nine months at the university.

Colleges and Universities

A virus research laboratory which will concentrate upon childhood infections has been established at the **University of Louisville School of Medicine.** Its completion was effected by a grant from the recently organized Kentucky Child Health Foundation. Investigations will be supervised by Alex J. Steigman and James G. Shaffer, of the school's Child Health and Bacteriology Departments.

A new postgraduate course in the "airbrasive" dental technique for drilling teeth will be offered by the **University of Michigan School of Dentistry,** beginning January 8. The new method substitutes for the dentist's drill a stream of aluminum oxide powder shooting out of a small nozzle under pressure from carbon-dioxide gas, at a speed of 1,000 feet/second. This method is only supplemental to the present drilling methods, as there is some dental work where it cannot be used. The School of Dentistry plans to give seventeen consecutive one-week courses limited to 16 members each. The courses will be open to any licensed dentist. A fee of $100 will be charged Michigan residents; nonresidents will be charged $150. Further information may be obtained from Dr. William R. Mann, School of Dentistry, University of Michigan, Ann Arbor.

The fifth annual John O. McReynolds Lecture in Ophthalmology was given by Arlington C. Krause, Department of Ophthalmology, University of Chicago, at the **University of Texas Medical Branch,** Galveston, November 6. This lectureship was established in honor of the late John O. McReynolds, a well-known Dallas ophthalmologist, by his daughter, Mrs. Frank W. Wozencraft. Dr. Krause discussed some of

his recent experimental studies on eye injury. Arthur Purdy Stout, professor of surgical pathology, Columbia University College of Physicians and Surgeons, gave a series of lectures at the Medical Branch during the last week in October on "Tumors of the Soft Tissues" and on "Changing Concepts of Malignancy." Dr. Stout also gave a series of special lectures on cancer at Brooke General Hospital, San Antonio. Peter Gaillard, professor of cytology at the State University of Leyden, Holland, gave a special series of seminar discussions during the first two weeks of November on the cultivation of whole organs. Dr. Gaillard is doing special work in the Tissue Culture Laboratory of the Medical Branch in association with Charles M. Pomerat, director of the laboratory.

The University of Michigan's School of Public Health is offering an in-service training course in radiological health, February 5–8. The course is designed especially for health officers, engineers and sanitarians, industrial hygiene personnel, and nurses. The enrollment fee is $5.00. Applications should be sent to H. E. Miller, School of Public Health, University of Michigan.

In the Laboratories

A new and exceptionally strong steel has been developed by the research laboratory of **Carnegie-Illinois Steel Corporation.** With good resistance to corrosion, it remains tough even at temperatures below zero, where many structural materials tend to show some loss of toughness. Bearing the grade designation "T1," this new Carilloy steel composition is almost twice as strong as the high-strength, low-alloy steels and will effect savings in mobile equipment, since it can be made in quantity in standard open-hearth furnaces. It may be welded easily with welding electrodes now available, yet it possesses almost three times the strength of ordinary welding-grade structural steels.

The Naval Research Laboratory is seeking scientists and technicians to fill 46 positions, ranging in classification from GS-7 to GS-12. Civil Service status is not required. The list includes 13 physicists, 22 electronic scientists, 4 electrical engineers, and a few chemists or chemical engineers and technicians. Information regarding these positions may be obtained from Personnel Division, Code 1817, Naval Research Laboratory, Washington 25, D. C.

Meetings

A symposium on **"Recent Advances in Microbiology,"** sponsored by the Department of Bacteriology and the Graduate School of Indiana University, will be held December 7, in the Alumni Hall of the university. Speakers on the program will be P. W. Wilson, University of Wisconsin, J. M. Sherman, Cornell University, H. O. Halvorson, University of Illinois, W. J. Nungester, University of Michigan, Jorgen M. Birkeland, Ohio State University, William Burrows, University of Chicago, and Morris Scherago, University of Kentucky.

Speaking before the 18th annual meeting of the **Engineers' Council for Professional Development** held in Cleveland, A. R. Hellwarth, Detroit Edison Co., said that industry invests at least $10,000 and two years of irreplaceable time before a newly recruited engineer is able to accept the full responsibility of a job in a modern industrial organization. "For this reason," said Mr. Hellwarth, "men and jobs must be well-matched if the investment is not to be a loss to industry." To aid both students and industry, a program of facts and suggestions has been incorporated in a 200-page compilation gathered from a 15-year study of the training programs of 54 companies and a review of the published information about programs of about 80 other firms by the ECPD committee on professional training, under the chairmanship of A. C. Monteith, vice president in charge of engineering and research, Westinghouse Electric Corporation, Pittsburgh. Raymond Walters, president of the University of Cincinnati and chairman of the liaison Committee on the Relationships of Higher Education to the Federal government, in his talk before the group said that serious financial problems in the colleges and a severe shortage of trained personnel in industry, especially scientists and technologists, can result from the drafting of large numbers of college-age youths.

The Western Forestry and Conservation Association will hold its annual conference at the Sir Francis Drake Hotel in San Francisco, December 6–8. Sessions of the conference will consider problems of growing, protecting, and harvesting the forest crop.

The 6th **Southwest Regional Meeting of the American Chemical Society** will be held in San Antonio, December 7–9, at the Gunter Hotel. Among the features of the program will be symposia on carbonium ions, chemical education, and radiochemistry.

A **Middle East Tropical Disease Symposium** was held November 18–19 at the American University of Beirut, under the auspices of the Division of Medicine of the university and sponsored by the United Nations Relief and Works Agency with the help of WHO, the U. S. Naval Medical Research Unit III, Cairo, and the French Faculty of Medicine, Beirut.

The American Chemical Society will hold a symposium on radioisotopes at the Hotel Statler in New York, January 19, 1951. Scheduled papers are: "Carbon 14 and New Frontiers of Organic Chemistry"—Charles E. Crompton, Atomic Energy Commission; "Nuclear-Inorganic Chemistry"—Charles D. Coryell, Massachusetts Institute of Technology; "Some Applications of Radioactive Isotopes in Biochemistry"—David Rittenberg, College of Physicians and Surgeons, Columbia University; "The Commercial Potential of Nuclear Radiation Sources"—F. C. Henriques, Jr., Tracerlab Inc.; "The Use of Radioisotopes in the Petroleum Industry"—Paul H. Emmett, Mellon Institute of Industrial Research, University of Pittsburgh; and "Principles of Radioisotopes Technology"—Charles Rosenblum, Merck & Co., Inc.