

## SCIENTIFIC EVENTS

## THE FIRST HIGH-POWERED RADIO STATION WITHOUT STATIC

THE first high-powered radio station without static, employing an improved system of transmission and reception which, if widely adopted, will take the place of radios now in use, will be put into operation next spring, according to an announcement made by Major Edwin H. Armstrong, professor of electrical engineering in Columbia University, who designed and built the broadcasting equipment.

The new system will greatly relieve the danger of the air waves being monopolized, which has given so much concern to the Congress, by making available a service on the ultra-high frequency channels that are comparatively unused at present.

Arrangements have been made with station WQXR for the new station to receive and transmit the programs now broadcast from New York's "High Fidelity" station. John V. Hogan, radio engineer and owner of WQXR, has filed a petition with the Federal Communications Commission for permission to build a frequency modulated station in New York City. The studios and programs of WQXR will be used by W2XMN until such a time as Mr. Hogan's own station is erected.

Construction of frequency modulated receiving sets of the new type, which were at first labeled an "impractical dream" by radio corporations, has already been started on a commercial basis by the General Electric Company. The new sets, when produced on a quantity basis, will cost no more than the ordinary good set of to-day and will be able to receive both the old and the new kinds of broadcasting much the same as sets now receive both the short and long-wave programs. Arrangements are being made for the manufacture and sale of transmitters by the Radio Engineering Laboratories of Long Island City. Patents on the system have been granted to Major Armstrong in the important countries of the world.

The invention was publicly demonstrated before the Institute of Radio Engineers in 1935. At that time a sound reel recording was played comparing the reception during a thunder-storm of the old and new types of broadcasting. The recording was made from broadcasts received at a distance of 85 miles from the 2-kilowatt station in the Empire State Building, using the new method, and from WEA, a 50-kilowatt station. While WEA came through strongly, its program was made unintelligible by crashes of static. In contrast, the frequency modulated signals from the Empire State Building provided an uninterrupted, clear program, free from static, despite the fact that its power was only 4 per cent. that of the larger station.

Major Armstrong states that great credit for the development work necessary to perfect the high quality of the transmission must go to John Bose and James Day, two of his assistants. Apparatus for the station was designed in the Hartley research laboratories at Columbia University, where the most delicate parts were made. The remainder of the equipment was constructed at the Radio Engineers Laboratory in Long Island City and the RCA Manufacturing Company of Camden. Major Armstrong paid the highest tribute to the engineering skill of John Evans, of the RCA Company, who designed the high-power equipment and to Perry H. Osborn, who assisted in the construction.

The new station, built at a cost of several hundred thousand dollars, is owned by Major Armstrong. He first started to work on the problem of eliminating static from radio broadcasts in 1914 in collaboration with Professor Michael I. Pupin, after whom the Pupin laboratories at Columbia are named. Both men gave up the problem in 1922, convinced that there was no solution. A year or two later Major Armstrong started to look for a solution from a new angle that eventually led to the present discovery.

## GRANTS OF THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

THE National Foundation for Infantile Paralysis has announced grants of \$140,990 to universities and hospitals. They are as follows:

*For Scientific Research*

- Department of Internal Medicine, Yale University Medical School, \$6,500.
- Long Island College of Medicine, Brooklyn, \$15,000.
- Department of Bacteriology, University of California Medical School, Los Angeles, \$5,000.
- Department of Bacteriology, University of Southern California Medical School, \$10,000.
- Department of Bacteriology, Stanford University, California, \$12,000.
- University of Michigan, Ann Arbor, \$2,000.
- University of Wisconsin, Medical School, Madison, \$3,300.
- Department of Bacteriology, Ohio State University, Columbus, \$3,060.
- Western Reserve University, Cleveland, \$4,800.
- Washington University, School of Medicine, St. Louis, \$6,800.
- Grasslands Hospital, Valhalla, N. Y., \$7,500.

*For Prevention and Treatment of After Effects*

- Orthopedic Hospital-School, Los Angeles, \$7,800.
- Children's Hospital-School, Baltimore, \$7,500.
- St. John's Hospital, Springfield, Ill., \$2,500.
- Michael Reese Hospital; Samuel Deutsch Serum Center, Chicago, \$4,600.

James Whitcomb Riley Hospital, Indianapolis, \$6,000.

Children's Hospital, Marlin, Texas, \$2,500.

Society of New York Hospital, New York, \$4,580.

University Hospital of Iowa, Iowa City, \$8,500.

Hospital for Joint Diseases, New York City, Dr. Leo Mayer, surgeon in chief, \$4,250; Dr. Samuel Kleinberg, \$5,800; Dr. Samuel Johns and Dr. Isador Zadek, \$5,500; Dr. Jerome Weiss, director of division of poliomyelitis research, \$5,500.

Scottish Rite Hospital, Dallas, Texas, \$10,000.

The grants for research were made upon the recommendation of an advisory committee headed by Dr. Thomas M. Rivers, director of the hospital of the Rockefeller Institute for Medical Research. Dr. Philip Lewin, associate professor of orthopedic surgery at the Medical School of Northwestern University, was chairman of the committee which directed distribution of the grants for treatment.

Grantland Rice is chairman of a committee for raising funds prior to the birthday balls of President Roosevelt on January 30. This year the funds will be divided in half, one part to remain in the localities where the money is raised and the other half to be sent to the National Foundation for Infantile Paralysis for support of research and new treatment.

### THE ANNUAL MEETING OF THE SOUTHWESTERN DIVISION

THE nineteenth annual meeting of the Southwestern Division of the American Association for the Advancement of Science will be held from May 2 through May 5 at Alpine, Texas. Host institutions will be the Sul Ross State Teachers College and the new McDonald Observatory, the latter being located on top of Mt. Locke, 42 miles from Alpine. Presentation of papers in the various sections will be held at Alpine during the first three days, with the fourth to be spent at the observatory.

Alpine is located in the Big Bend region of Texas, almost due east of El Paso at a distance of 225 miles. It is on one of the main east-west highways (U. S. 90), all paved. The McDonald Observatory is a joint enterprise of the University of Texas and the University of Chicago, with Dr. Otto Struve as director. The principal telescope is a reflector of 82-inch aperture, second only in size to the 100-inch telescope of Mt. Wilson.

A partial list of other professional organizations which will meet in conjunction with the division are as follows:

Mathematical Association of America, southwestern section, *chairman*, R. S. Underwood, Lubbock.

Society of American Foresters, southwestern section, *chairman*, E. R. Smith, Albuquerque.

West Texas Historical and Scientific Society, *chairman*, Henry T. Fletcher, Marfa.

Texas Academy of Science, *chairman*, W. T. Gooch.

Texas Folk Lore Society.

Texas Archeological and Paleontological Society, Abilene, *chairman*, Dr. Cyrus N. Ray, Abilene.

Due to the fact that the meetings have been scheduled to coincide with the dedication ceremonies of the observatory, and that so many organizations from the eastern part of Texas will participate, the exact schedule of the program is still in the formative state. Regular features of the division meetings include the Powell Lecture, to be delivered this year by Dr. A. H. Compton, of the University of Chicago, on the topic "Physics Views the Future"; the presidential address, to be given by Dr. E. F. Carpenter, Steward Observatory, University of Arizona, and the division banquet. In addition, the Texas Academy of Science plans to hold a dinner meeting with a special speaker.

The schedule for Friday, May 5, promises to be unusually interesting with an astronomical symposium at Mt. Locke in the afternoon, a "chuck wagon" supper, and open house to the division members at the observatory that evening.

Many of the visitors will want to stay over until Saturday, May 6, to hear the symposium on "Galactic and Extra-Galactic Structures," which is being held by fourteen of the most distinguished scientists of this continent and Europe under the auspices of the observatory staff.

Field trips of special interest to biologists, geologists, anthropologists and historians are being arranged. The Big Bend of Texas is rich in early Spanish colonial history, being the region of five major Spanish expeditions. Over this is spread the events of Mexican authority, early Texas history and some of the latest conflicts of the U. S. Army and hostile Indians. Pre-history is represented by many evidences of primitive man, and in late years a large number of expeditions from archeological museums have established excavation sites of much interest to anthropologists. Within but a short distance from Alpine are to be found geologic structures of every description, as a consequence of which there is a large range in variety of life forms, all the way from those of the hot desert to those of the mountain tops.

The chairman of the Local General Committee is Victor J. Smith, director of the Big Bend Museum of the West Texas Historical and Scientific Society. C. T. Elvey is chairman of the committee in charge of activities at the observatory. Papers to be presented before the various section meetings must be in the hands of the respective chairmen of the sections by the first of April. Complete programs will be mailed to all members and all those presenting papers a week in advance of the meetings. Any special requests for programs should be sent to the secretary of the division.

V. C. KIECH,  
*Secretary*

UNIVERSITY OF NEW MEXICO