

described. A particularly interesting paper was presented on the acoustics of the ancient theaters at Orange and Vaison. The conference heard proposals for international standards of measuring airborne and impact sound both in the laboratory and in the field. These were also discussed at another conference following the general meetings, with the result that a revised form of this standard will be circulated through the International Standards Association to other nations.

Considerable interest greeted the news that acoustics research is being revived in Germany, the group under Erwin Meyer in Goettingen being the largest. It is expected that the *Akustische Zeitschrift* will be published again soon. Also, the formation of a French acoustical society, the "Groupement des Acousticiens de Langue Française," 24 Rue Bertrand, Paris 7, with Professor Y. Rocard as president, was announced informally. L.L.B.

NBS News

A highly sensitive variable resistor that transforms slight mechanical displacements into large changes in electrical resistance, current, or voltage, has been developed under the direction of W. A. Wildhack at the National Bureau of Standards. A conical spring is wound with variable tension so that its turns separate one by one rather than simultaneously and as a result its electrical resistance varies from that of a cylindrical tube to that of the total length of the uncoiled wire. Thus displacements as small as a hundred-thousandth of an inch can be measured without using an electrical amplifying device.

Wind tunnel tests by G. B. Schubauer and W. G. Spangenberg of the National Bureau of Standards have shown that fine wire screens, properly spaced, produce smooth, uniform flow of air through rapidly expanding ducts. Thus it is now possible to increase the cross section of an air stream in a much shorter distance of travel than heretofore, and still avoid undue turbulence. The characteristic action of the screen is to spread the air stream and so prevent separation of flow from the container walls.

Willard H. Bennett of the National Bureau of Standards has developed a radiofrequency mass spectrometer that detects, separates, identifies, and measures the negative atomic ions of the heavier metallic elements. It has been difficult to detect these ions because they lose their charges in very short distances. Experiments begun at the Bureau by Dr. Bennett in 1946 indicated that negative atomic ions might well exist in the many familiar forms of electrical discharge in vacuum tubes, but that they would not be detected if the distance through the tube between the discharge and the electrode was large. In its more advanced form, this two-stage spectrometer may be used for positive as well as negative ions. The equipment consists essentially of a multigrid tube in which an adjustable radiofrequency is applied to two grids while all other electrodes are held at the proper direct-current potentials, and the ion current is measured at the plate. The difficulties in negative-ion separation require the use of a

small magnetic field produced with coils, but if positive ions are being separated, no magnetic field is needed.

Preliminary experimentation at the National Bureau of Standards indicates that many specialized uses for this kind of tube will come to light as it becomes better known.

Vannevar Bush Resigns

Upon the retirement of Vannevar Bush after two years as chairman of the Research and Development Board of the National Military Establishment, President Truman announced the appointment of Karl T. Compton to succeed him in directing U. S. military research. Dr. Bush stated in his letter of resignation that he felt it wise to have a reasonable rotation in the civilian membership of the Board. He now returns to full time service as president of Carnegie Institution of Washington. Dr. Compton resigned his presidency of Massachusetts Institute of Technology and was elected chairman of the Institute's corporation. On his recommendation, his executive assistant, James R. Killian, Jr., was chosen to succeed him as president of MIT.

Physics Abstracts

Dwight E. Gray, on leave from his position as supervisor of technical reports at The Johns Hopkins Applied Physics Laboratory, is director of the study of physics abstracting first announced in the August *Physics Today*.

The project, under the co-sponsorship of the American Institute of Physics and the American Physical Society, is operating under contract with the Office of Naval Research.

The objective of this program is to find out what physicists, as a group, do not like about abstracting services now available to them, what they think would be an adequate abstracting service, and what it would cost in time, people, and money to provide the desired service.

Survey methods will combine personal interviews, round table discussions, and questionnaires. Volunteer comments and suggestions will be welcomed, it was announced, and should be mailed to the project's main headquarters: Dwight E. Gray, National Research Council, 2101 Constitution Ave., Washington 25, D. C.

Radioisotopes

Because three hundred qualified people applied for one of the three radioisotope courses offered during the summer, whereas only ninety-six students could be placed in all three, the Oak Ridge Institute of Nuclear Studies has scheduled four additional courses for the fall and winter months. Additional information and application blanks may be had from Dr. Ralph T. Overman, Oak Ridge Institute of Nuclear Studies, Post Office Box 117, Oak Ridge, Tennessee. Another note in this expanding field is the announcement from the Atomic Energy Commission that more than a hundred research institutions and hospitals in fifteen countries are now using radioisotopes, principally in medical and biological work. Twenty-one nations made arrangements to receive radioisotopes in the first year they were shipped abroad from the Oak Ridge pile.