

sonic variety) has been announced respectively by the Massachusetts Institute of Technology and the Johns Hopkins University. MIT's tunnel, part of the recently dedicated Naval Supersonic Laboratory in Cambridge, has already been operated at a Mach 2 level, and is expected to reach approximately four times sound velocity. Constructed under the auspices of the Navy's Bureau of Ordnance, the tunnel was designed under the direction of John R. Markham, director of the laboratory. The wind tunnel will be operated under the administration of MIT's department of aeronautical engineering headed by Jerome C. Hunsaker.

The Johns Hopkins wind tunnel is now being constructed with student assistance and under the sponsorship of the Office of Naval Research; it will be in operation within the next few months. Making use of four 1600 horsepower aircraft engines, air velocities in the tunnel are expected to reach about twice the speed of sound. The tunnel was designed by Francis Clauser and Leslie Miller, of the University's department of aeronautics.

RADIAC SYMPOSIUM

HELD AT SIGNAL CORPS ENGINEERING LABS

A decade or so ago the instrumentation needs of radiologists, of x-ray technicians, and of persons working in industrial radiography were met largely by a few manufacturers working in close cooperation with the x-ray division of the National Bureau of Standards. The special problems then encountered in physics laboratories were made relatively minor by taking sensible safety precautions. More recent developments in work with high energy particle accelerators and with nuclear reactors and weapons have extended the physicist's problem with regard to the energy range over which the instrument must give true dosage readings, the radiological intensity ranges which must be covered, and the numbers and types of personnel it may be necessary to protect—or risk, if such an occasion should arise.

The problem has now reached such proportions as to require the combined attention of government, industrial, and university groups. As a means of encouraging the interchange of information among such groups, a radiac symposium was sponsored by the Signal Corps Engineering Laboratories and held at Fort Monmouth, New Jersey during September 14–16, 1949. The topics discussed at this symposium (one of a series initiated by the Atomic Energy Commission) fall roughly into the following categories: design problems and instrument types; calibration problems; and investigations of components.

Although counting type instruments came briefly into discussion, the emphasis was in general limited to ionization chamber instruments, including personnel dosimeters. Francis R. Shonka of the Argonne National Laboratory discussed quartz fibre techniques and the use of these fibres in electrostatic instruments. He discussed in detail a personnel dosimeter of the direct reading type which was developed at Argonne and after outlining certain design problems which had to be solved in the development of such a dosimeter, Dr. Shonka mentioned briefly certain other instruments employing quartz fibre indica-

tors. Other papers covering special design features of specific ionization chamber instruments were presented by Robert W. Schede of the Oak Ridge National Laboratory and by Marvin G. Schorr of Tracerlab.

Calibration problems were discussed by Bureau of Standards personnel. Lauriston S. Taylor led this phase of the program with a discussion of the measurement of the roentgen by means of standard chambers. He discussed in some detail the problem of designing standard chambers for the measurement of dosage arising from hard x-rays or gamma rays. The types of calibration equipment that should be included in a production engineering laboratory also received some consideration. Other topics dealing with thimble chambers, secondary standard chambers, and results of calibration tests on AEC instruments were discussed by H. O. Wyckoff, H. F. Gibson, and F. H. Day, all of the NBS.

The discussion of components was divided somewhat as follows: high performance insulators by A. J. Warner of Federal Telecommunications Laboratories, Inc.; characteristics and measurement of high megohm resistances by K. E. Burmaster and R. K. Abele, both of the Oak Ridge National Laboratory; and problems associated with electrometer tube design by P. T. Weeks and H. F. Starke of Raytheon.

Lt. Colonel D. T. Griffin of the Signal Corps acted as chairman of the symposium, and G. Failla of the Radiological Research Laboratory, Columbia University, served as moderator. Of particular interest to those in attendance were the comments of Dr. Failla regarding certain new physiological aspects of gamma and x-radiation and their significance with respect to the design of equipment for military use.

—W. S. McAfee

ICI ON PARLE FRANÇAIS

CELSIUS, CENTÉSIMALE, AND CENTIGRADE

The decision of the Ninth General Conference on Weights and Measures, to substitute the name Celsius for the centigrade system has apparently caused some confusion and the Bureau of Standards recently issued a report explaining the confusion in which the decision was born.

The action had not been proposed in advance of the Conference and the decision arose from a question regarding preferred usage in French, the sole official language of the Conference, the Bureau report stated.

In preparation for the General Conference the National Bureau of Standards submitted a revised text defining the International Temperature Scale to supersede that adopted in 1927. The proposed text was drafted in English and, in accordance with common English practice as well as the official French text adopted in 1927, it used the name "centigrade." This name was carried over into the French translation prepared for consideration by the Advisory Committee on Thermometry in May, 1948. However, in the printed report of that meeting, the term "centigrade" had, in most cases, been changed to "centésimale," the term that is used in the French law governing weights and measures. When asked to choose between the two the International Committee on Weights and Meas-

ures and the General Conference voted to substitute "Celsius."

In the interest of eventual uniformity of practice, the use of "Celsius" appears desirable, the Bureau report states, but "it is not practicable to impose this term on those who prefer 'centigrade.'" The report considered the decision as strictly applying only to French because the choice was made on that basis.

SOUND IN ST. LOUIS

ACOUSTICAL SOCIETY MEETS

The small number of papers at the thirty-eighth meeting of the Acoustical Society of America, held in St. Louis November 17-19, 1949, made it possible to dispense with simultaneous sessions and to have a relatively uncrowded program with ample allowance for discussion. The result was an intimate, relaxed atmosphere which was reminiscent of the prewar meetings of the Society.

Because of the distance of St. Louis from the population centers on the East and West Coasts and perhaps also because of the letdown from the twentieth anniversary meeting, both the number of papers presented (47) and the number of registrants (181) were the smallest in some years. On the other hand, the number attending the technical sessions and the banquet represented an unusually large fraction of the registration.

In the first paper of the meeting Hale J. Sabine reported a beginning in the task of reconciling the absorption coefficient values measured by different methods and in different test chambers. Activities in this field had come to an abrupt halt in 1939. The remainder of the morning session was concerned with other problems in architectural acoustics. An invited paper by H. C. Roberts began the Thursday afternoon session in which he reported work in determining experimentally the natural frequencies of the vibration of large structures such as bridges. Large mechanical vibrators and strain gauge detectors are used. H. M. Trent described a different type of "experimental" determination of the normal modes of slim, elongated structures such as skyscrapers and ships; in this method two cross-coupled electrical transmission lines, suitably tapered, are used to simulate the vibrational characteristics of the structure. Electrical measurements on the transmission lines permit the determination of the first few normal modes of the structure represented. Other papers on vibration were presented on the same program.

The Friday sessions on psycho-acoustics were the most outstanding sessions of the Society within the writer's memory. All of the nineteen papers were interesting and were well presented. Highlights of the program were S. R. Silverman's impressions of speech and hearing activities abroad; H. K. Dunn's demonstration by tape recordings of the life-like vowels produced by his electrical transmission line simulator of the vocal tract; Wayne Rudmose's work in resolving a discrepancy existing since 1933 between the thresholds for minimum audible field and minimum audible pressure; a theory of A. MacDonald and R. H. Bolt to explain the masking effect of reverberation on the intelligibility of speech; J. C. R. Lick-

lider's discussion of the mechanism of the auditory frequency selectivity; and the discussions of the anatomy of the ear and of the fenestration operation by Walter P. Covell, M.D. and T. E. Walsh, M.D.

The Saturday sessions carried the papers whose subject matter did not fit into the previous sessions. Two independently developed ultrasonic microphones were described by Clayton H. Allen and by Herbert W. Cooper. The current status of the electrostatic speaker development at Harvard University was treated by Arthur A. Janszen. Two papers by P. J. Westervelt and by U. Ingard and S. Labate were concerned with the nonlinear phenomena connected with sound passing through circular apertures. A very detailed experimental and theoretical analysis of the modes of a rectangular whistle was given by W. L. Nyborg and C. L. Woodbridge.

—R. Clark Jones

ARTS AND SCIENCES

150TH ANNIVERSARY OF CONNECTICUT ACADEMY

The Connecticut Academy of Arts and Sciences, founded in 1799 by a group of colonial scholars who first met in the old State House in New Haven, celebrated on November 4 its one thousandth meeting with a special program in the Yale University Art Gallery. This, according to a Yale announcement, featured a discussion of cosmic rays by Thomas H. Johnson, chairman of Brookhaven's physics department, an excursion into biology by Berkeley nuclear physicist Max Delbruck, and a concerto for trumpet and bassoon composed by Paul Hindemith, professor of the theory of music at Yale.

Ezra Stiles, Yale's seventh president, attempted as early as 1781 to stimulate interest in founding an academy dedicated to art and science, the announcement stated, but the then uncordial relations between Yale and Connecticut authorities led the State legislature to refuse to charter the proposed organization. Some eighteen years later the path became smoothed, perhaps, it is suggested, because the governor and the lieutenant governor had been made Yale College Fellows by virtue of their office, and the academy received its charter. Its first president was Timothy Dwight of Yale and its first vice president was Jonathan Trumbull, then governor of Connecticut.

HONORS AND AWARDS

PHYSICISTS HONORED IN GREAT BRITAIN

One of the two Royal Medals for 1949, awarded following recommendations made by the British Royal Society Council which were formally approved by King George, has been presented to Sir George Thomson in recognition of his many contributions to atomic physics, and especially for his work in establishing the wave properties of the electron. Among the other medals recently presented by the Royal Society are the Copley Medal, awarded to G. C. de Hevesy for his work on radioactive elements and tracer techniques; the Sylvester Medal, awarded to L. J. Mordell for his mathematical work in the theory of numbers; and the Hughes Medal, awarded to C. F. Powell for his work in recording the tracks of high energy particles in photographic emulsions.