kilowatt hour, are obtained by combining these units and by extending the scale of measurement. The units then are transferred to higher frequencies by appropriate techniques.

Services offered by the Calibration Center cover three broad frequency ranges: (i) low-frequency (zero frequency through about 30 kc); (ii) high-frequency (30 kc through about 300 Mc); and (iii) microwave (above 300 Mc).

Somewhat more than half of the initial instrumentation program has been completed, and the center now is able to provide the most urgently needed services. Additional standards and instrumentation, beyond the present program, will be required in the future to replace those made obsolete by technological advances and to extend the capabilities of the center as new calibration requirements arise. The eventual goal is to measure and standardize in the center all electronic quantities for which there is a substantial calibration need. Calibrations required only infrequently may often be obtained elsewhere in the bureau.

The importance of proper environment for precision measurement operations is widely recognized. A well-lighted area that is free of mechanical vibration and shielded against radio and other electrical interference, that has regulated and well-filtered power lines and dust-free air of controlled temperature and humidity is essential to calibration work where the primary standards are concerned. All of these features have been incorporated into the new center. In addition, nearly all of the electrical equipment has been installed in consoles, for the convenience of the operating personnel and for the protection of the sensitive equipment. Incorporating all the latest technological advances, this laboratory could well serve as a model for standardizing laboratories throughout the world.

Artificial Insemination

A new method for preserving and shipping bull semen that promises to cut operating of artificial insemination programs has been reported by O. T. Stalcup of the University of Arkansas Agricultural Experiment Station. The method, which is the result of a 2-year research program, reduces the number of collections and cuts shipping costs in half.

Basic principles of the process involve adding carbon dioxide and glycine to an extender composed of egg yolk, distilled water, antibiotics, and other ingredients. Carbon dioxide keeps the spermatozoa alive in the absence of free oxygen. Glycine is an amino acid containing protein that protects and nourishes the spermatozoa. Another chemical, glutathione, is added to activate the spermatozoa when ready for use, thus increasing the period of time they can be stored successfully. Field trials indicate that semen processed and shipped with this extender can be safely used for 3 to 4 days, compared with 2 days for present extenders.

Grants, Fellowships, and Awards

Fluid mechanics. A $3000 Boris A. Bakhmeteff research fellowship will be available for the 1959–60 academic year to support a research project of an original and creative nature in the general field of mechanics of fluids. The recipient must be a full-time graduate student who is a candidate for the master's or doctoral degree. He may not hold any other fellowship or major income-producing commitment that will interfere with his research work and study on a full-time basis. The study and research may be undertaken at an institution of the fellow's choice. Applications must be filed by *15 February 1959.* Forms may be obtained from: Dean William Allan, School of Technology, City College of New York, New York 31, N.Y.

General, for women. Sigma Delta Epsilon, graduate women's scientific fraternity, has announced its predoctoral fellowship for 1959–60. These fellowships are awarded to women who give evidence of ability in scientific research, and who need financial assistance to further a well-defined project contributing to the Ph.D. or equivalent degree. Candidates should be graduate students in the physical, biological, or mathematical sciences who during the fellowship tenure will be devoting more than half time to a thesis or to thesis research. The stipend is $1600. Application forms, which must be returned by *1 February 1959,* may be secured from: Dr. Geneva Sayre, Department of Biology, Russell Sage College, Troy, N.Y.

Parasitology. The American Society of Parasitologists has announced that it will confer annually, or less often, an award for meritorious research in parasitology. The award, sponsored by Parke, Davis & Company, will consist of a check for $1000, a medal, and a $150 travel allowance for the recipient. The new prize has been named in honor of Henry Baldwin Ward, who founded the society's *Journal of Parasitology* and served as the society's first president. Members of the society whose accomplishment occurs within 15 years after the completion of academic training are eligible for the award.

Psychiatry. The Hofheimer Prize of $1500 is awarded annually by the American Psychiatric Association for an outstanding research contribution in the field of psychiatry or mental hygiene which has been published within a 3-year period up to the date of the award. It is imperative that contributions submitted for consideration be published, since studies in press or in preparation are not eligible. This competition is open to citizens of the United States and Canada who are 40 years of age or under at the time the study was submitted for publication; or to a research group whose median age does not exceed 40 years.

The next award will be made at the annual meeting of the association in April of 1959. Eight reprints or duplicated copies of each entry, as well as the necessary data concerning age and citizenship, must be sent *by 15 February* to John I. Nurnberger, M.D., Chairman, Hofheimer Prize Board, 1100 West Michigan St., Indianapolis 7, Ind.

News Briefs

The American Association of University Professors has announced receipt of a grant of $10,000 from the Fund for the Republic. This money will go into the association's Academic Freedom Fund. It will be used to help teachers who have been discharged or suspended without pay in clear violation of academic freedom. Assistance will also be given the faculty of a college or university where a general crisis threatens freedom in education.

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Two Congressional subcommittees announced on 7 December that they had started an investigation of whether "bottlenecks and red tape" in the Atomic Energy Commission were holding back the nation's nuclear programs. The chairmen of the subcommittees, representatives Melvin Price, Democrat of Illinois, and Chet Holifield, Democrat of California, said that the Joint Atomic Energy Committee had become "increasingly aware of delays in contract negotiations and delays in acting on requests by the joint committee and the Congress."

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When Project Vanguard was transferred from the Navy to the National Aeronautics and Space Agency on 1 October, NASA gave to the 150 members of the Vanguard staff the option of transferring to the new agency or remaining at NRL. Most of them have elected to go with the project. NASA is in full operation administratively, but as yet it has no laboratory quarters. For probably a year or more, Hagen and his associates will remain where they are, either at NRL or at Cape Canaveral and the various tracking stations. But henceforth