of physics of the glassy state by E. U. Condon of the Corning Glass Works in the February *American Journal of Physics*. Glass, in modern terms, is strange and complicated stuff, requiring such elaborate tools as x-ray diffraction analysis and the quantum theory of specific heat to unravel its structure. Dr. Condon, a former Director of the National Bureau of Standards, discusses various aspects of the constitution of inorganic glasses in this article, the first of a series with the above title.

Microwave impedance measurements between 400 and 1600 megacycles can now be made rapidly and conveniently with a new instrument developed at New York University, in contrast to expensive and tedious slotted-line techniques currently in use. A Smith chart overlay on an oscilloscope is used to record measurements made with the new method, and the results can be presented either as a continuous plot or on a point-to-point basis.

Measurement and control of the level of liquid refrigerants inside enclosed vessels, where the liquid level cannot be observed visually, is often a problem in cryogenic laboratories. One solution to the problem has been found by W. E. Williams, Jr., and E. Maxwell of the National Bureau of Standards, who use a cylindrical condenser having for its dielectric the liquid and the vapor above it. Since the two phases have different dielectric constants the capacitance of the condenser depends upon the liquid height, and measuring this capacitance with an automatically balanced bridge yields the desired information immediately. For cylinder radii of $\frac{3}{8}$ and $\frac{1}{2}$ inch the capacitance changes per inch of height are 1.3 $\mu\mu$f for helium, 5.2 $\mu\mu$f for hydrogen, and 10.4 $\mu\mu$f for nitrogen. The device also contains a means for regulating the liquid level with pneumatic pressure. It is fully described in the February issue of *The Review of Scientific Instruments*.

New Installations

Dedication of the new Electronic Defense Laboratory in Mountain View, California, took place on March 4th. The Laboratory, a facility of Sylvania Electric Products, Inc., will undertake experimental studies and field tests of electronic equipment under a contract with the Army Signal Corps and will employ about 250 persons, most of whom will be physicists, chemists, engineers, and systems and circuits designers and analysts. Henry Lehne, former vice-president of Republic Aviation Corporation, is director of the Laboratory. Chairman of the Board D. G. Mitchell, speaking at the dedication ceremony, said that Sylvania recently had completed an analysis of the electronics industry in which it was estimated that electronics, which only a few years ago was confined principally to the radio business, now is an $8 billion industry, and that its sales and revenues will exceed $13 billion within the next six or seven years. The same analysis, Mr. Mitchell said, estimates that government purchases of electronics equipment amounted to about $25 million in 1941, rose to $7.8 billion in 1953, and are expected to be in the vicinity of $3.8 billion in 1960 (an estimate "based on the assumption of no shooting war"). It also was estimated that government purchases of electronic equipment today comprise six percent of all government military expenditures, and that within the decade this figure may increase to ten percent.

Another new Sylvania facility is the Missile Systems Laboratory recently established in Queens County, New York. The Laboratory will concentrate on analysis and evaluation of scientific and engineering problems associated with guided missiles. The first project is to be a long-range study of missiles for the Army Ordnance Corps. Particular emphasis will be placed on the systems approach, in which attention is focused not only on the missile itself but also on factors associated with the actual use and maintenance of missile systems. O. G. Haywood, Jr., formerly manager of engineering planning in Sylvania's New York office, has been appointed manager of the new Laboratory. F. S. Manov, former chief of the operations analysis directorate of the Allied Air Forces in Central Europe, will be manager of the systems analysis department. M. E. Bell, who has just returned from England where he was scientific director of ONR's London branch, has been named manager of the plans department. Ernest Schlieben, former head of engineering research and development at ONR's Special Devices Center, has been made manager of the electronics department.

A low-power nuclear reactor similar to the "swimming pool" reactor at Oak Ridge is to be constructed and housed on the campus of The Pennsylvania State University. The reactor, designed to operate at a power level of 100 kilowatts, will be the second privately owned reactor for which the Atomic Energy Commission has authorized the use of fissionable material as fuel. The first, built by the Consolidated University of North Carolina, began operation last September 5th. Actual transfer of fissionable material required for the Pennsylvania reactor will occur after the AEC has given final approval to health, safety, and security aspects of the completed reactor and the plan for its operation.

A baby cyclotron as today's machines go, but still capable of yielding isotopes and information, a 21-inch 6.5 Mev accelerator for Brazil has recently been completed at the University of Chicago's Institute for Nuclear Studies. Designed and built under the supervision of H. L. Anderson and Lester Kornblith, the device is probably the smallest synchrocyclotron in existence. Funds for the construction of the cyclotron, some $85 000, were provided by the Brazilian government through its National Research Council. The U. S. Office of Naval Research cooperated in the venture by supplying funds for the salaries of the American staff during the design and construction.

A mass spectrometer containing a magnet weighing almost two tons is being installed in the chemistry

building of Iowa State College by the Ames Laboratory of the Atomic Energy Commission. The instrument, which is to be used as a research tool to measure relative amounts of stable isotopes, is being installed by D. H. Bergis of Consolidated Engineering Corporation, Pasadena, California.

Paul G. Agnew died at his home in New York on January 8 at seventy-two years of age. One of the pioneer leaders in standardization in this country, Dr. Agnew served as secretary of the American Standards Association from 1919 until his retirement in 1947 and was the first recipient of the Standards Medal, an annual award to an outstanding contributor to voluntary standards. He helped in the formation, in 1946, of the present International Organization for Standardization. Previous to his work with the ASA, Dr. Agnew was a physicist with the National Bureau of Standards from 1906 to 1919. He was a member and a former vice-president (1919) of the Washington Academy of Arts and Sciences.

Julian L. Coolidge, professor emeritus of mathematics at Harvard University, died on March 5 at the age of eighty. Dr. Coolidge served on the Harvard faculty for forty years, retiring in 1940. He was president of the Mathematical Association of America in 1925, and vice-president of the American Mathematical Society in 1918.

Fritz London, professor of theoretical chemistry at Duke University since 1938 and one of the world's outstanding low-temperature physicists, died on March 30 at his home in Durham, North Carolina. He was fifty-four years old. Dr. London received his PhD from the University of Munich in 1921. In 1927 and again in 1931–2 he was awarded Rockefeller fellowships; he also served as lecturer at the University of Berlin, and as a research fellow at both Oxford University and the Centre National de la Recherche Scientifique in Paris, where he later became director of research. In 1953 he was awarded the Lorentz Medal for scientific achievement from the Dutch Royal Academy of Sciences, the first person from an American institution to be so honored. He was the author of the book *Superfluids* (John Wiley and Sons, 1950) and many other scientific writings. He was a fellow of the American Physical Society.

Jacob Mazer, coinventor (with W. S. Trader) of the perforated acoustical building material used for soundproofing, died April 1st while visiting in Miami Beach, Florida. Mr. Mazer, who was 69 at the time of his death, lived in Germantown, Pennsylvania. He studied at the University of Pittsburgh and later at Cornell University, where he received a degree in civil engineering and served as a lecturer on architectural acoustics. He was a member of the Acoustical Society of America.