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Meetings

Gaseous Electronics

THE Twelfth Annual Gaseous Electronics Conference met on October 14-16 at the National Bureau of Standards in Washington. As usual, the Conference was cosponsored by the host institution and the Division of Electron Physics of the American Physical Society. The rapid growth of the fields of atomic and plasma physics and undiminished interest in many other classic problems in gas discharges engulfed the organizing committee with an unmanageable 86 contributed papers. Although in previous years this Conference made a practice of rejecting a few papers, usually for inappropriateness of subject matter, this "topical conference" was faced with a choice between acceptance of most of the papers at the cost of multiple sessions or selection of only half of the papers in order to adhere to single sessions for only three days with adequate time for presentation and discussion. The committee, chaired by W. P. Allis of MIT, persevered in an earlier determination to take the second course. Forty-seven papers were combined with four 40-minute invited papers to make up the program.

The topic selected for emphasis this year was atomic collision phenomena. Participants in the Gaseous Electronics Conferences have always shown great interest in basic phenomena which occur in ionized gases, and a large part of the Twelfth Conference was devoted to cross sections and rate coefficients for important collision processes.

Interest in collision cross sections has been stimulated both by advances theoretically and experimentally in interactions involving atomic hydrogen, as well as the relevance to high-energy plasmas of atomic and ionic collision cross sections over a wide energy range. The subject of ionic collision theory was treated in two invited papers. D. R. Bates of Queens University, Belfast, discussed the methods of approximation used in the calculation of collisions involving atoms and ions. Ta You-Wu of the National Research Council, Ottawa, described calculations of cross sections for ionizing and charge exchange collisions involving mu-mesic atoms. The contributed papers on scattering theory dealt primarily with the problem of elastic scattering of electrons by atomic hydrogen.

The experimental counterpart to the subject of Professor Bates was given in an invited paper by W. L. Fite of General Atomic, who described crossed beam experiments between ions and hydrogen atoms, which gave strong support to calculations in the low-energy region using the method of perturbed stationary states.

Experimental papers on inelastic collisions were largely concerned with excitation or ionization of hydrogen, helium, and molecular nitrogen.

Two sessions of papers on swarm experiments and related theory primarily reported data on electron collision frequencies and recombination coefficients. The invited paper of A. V. Phelps of Westinghouse dealt both with electron collision frequencies in nitrogen determined from electron mobilities at very low E/p , and also with the three-body attachment coefficient of electrons to molecular oxygen. The latter topic introduced a session of papers devoted primarily to attachment and detachment of electrons in oxygen.

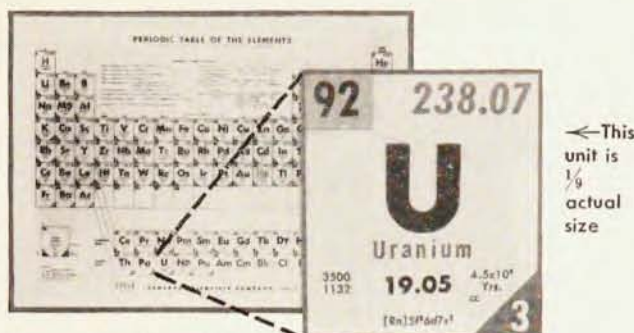
For the remaining three sessions the Conference turned to plasma physics, with a special concentration of interest on cyclotron radiation from plasmas and strong shock waves. The final session dealt with electrical breakdown and arc discharges.

Despite the acceptance of only about half of the papers submitted and the competition of the premiere performance of the new APS Plasma Physics Division in Monterey on the 3rd of December, 400 physicists registered. Attendance at almost every session threatened to exceed the seating capacity of 348 in the Bureau's East Lecture Room. Since the advanced registration was 342, it appears that the number of physicists who show up unannounced in spite of the pleas of the secretary for advanced warning almost exactly equals the number who, on any given day, prefer the inspiration of visiting the National Gallery or the Standard Kilogram.

Although the number of ladies who expressed a desire to participate in the Ladies' Program was rather small, those who did so were rewarded by a pleasant tea at the home of Mrs. S. J. Smith and several congenial expeditions on the following day.

The Twelfth Conference was noteworthy in several respects. First, the participants were surprisingly polite and restrained in their failure to complain about (a) climbing three flights of stairs to the lecture room or (b) discovering after Chairman Allis' invitation to adjourn for free coffee after the morning business meeting that the coffee was ordered only for the afternoon. Second, the Conference banquet was quite well attended and noted for the wit, interest, and brevity of Professor Margenau's after-dinner speech on "Physics and Operational Definitions". Professor Allis' introduction of the after-dinner speaker was of equal wit, interest, and length, and dealt not with the considerable contributions of Professor Margenau to the subject of gaseous electronics but to the solution of the mystery of why the Copley and the Wardman are not the Copley and the Wardman anymore. Finally the Business Session did not open with a stampede for the corridors but was the occasion for a lively discussion of the future of the Conference and the choice between simultaneous sessions, four-day meetings, and cutting back the subject matter of the Conference.

The decision for the Thirteenth Conference is in the hands of the new committee, whose secretary is



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N. L. Oleson of the US Naval Post Graduate School in Monterey, California, and which is expected to select Monterey as the site for the meeting. By October, 1960, the new committee, which includes W. P. Allis, L. B. Loeb, W. L. Fite, R. Geballe, G. Schulz, and L. M. Branscomb, will have had an opportunity to see a topical conference on plasma physics run with simultaneous sessions. There are rumored to have been some 136 contributed papers submitted on time to the committee for the first meeting of the APS Plasma Physics Division, also in Monterey in December, 1959. The Thirteenth Gaseous Electronics Conference will also mark the first such meeting on the West Coast, in recognition of rapidly expanding interest in the field from San Diego to Seattle.

L. M. Branscomb, *Secretary*
Twelfth Annual Gaseous
Electronics Conference

Low Temperatures

AN international colloquium on "Recent Progress in Low Temperature Physics" was held in Belgium (November 9-10) in commemoration of the founding in 1934 of the Laboratory for Low-Temperature Physics at the University of Louvain. The Laboratory, one of the few in the world of its kind at the time of its founding and for about twenty years the only low-temperature

laboratory in Belgium, was established by A. Van Itterbeek, who is still its director.

Papers on magnetic resonance at low temperatures, superconductivity, semiconductors, liquid helium, and ultrasonics were given by scientists from eight European universities. These reports are scheduled for publication in the Communications of the Royal Flemish Academy of Science (Brussels).

Science Teachers

SCIENCE teaching at all levels from kindergarten through the twelfth grade will be treated in detail by symposia speakers and panelists at the eighth annual convention of the National Science Teachers Association, which will convene from March 29 to April 2 in Kansas City, Mo. General sessions and an exposition of science teaching materials will be held in the Kansas City Municipal Convention Center. Current science topics will be reported by college and research scientists speaking on recent developments in their respective fields. The roster of scheduled speakers includes Linus C. Pauling, Walter H. Brattain, George B. Kistiakowsky, and John R. Heller. Questions concerning the convention should be directed to Beatrice M. Gudridge or M. Ruth Broom, National Education Association, 1201 Sixteenth Street, N. W., Washington 6, D. C.



Participants at the international colloquium which was held at Louvain on the occasion of the 25th anniversary of the founding of the Cryogenic Laboratory

From left to right. *First row:* O. Van Paemel and H. Myncke (Louvain), Mrs. A. Michels (Amsterdam), R. Planck (Karlsruhe), M. Poupko (Brussels), A. Van Itterbeek (Louvain), K. Mendelssohn (Oxford), L. De Greve (Louvain), N. Kurti (Oxford), B. Blaisse (Delft). *Second row:* W. Van Dael, L. Van Gerven, and Miss W. Van Itterbeek (Louvain), C. Gorter (Leiden), W. Peelaers (Louvain), J. Lamb (London), G. van den Berg (Leiden), R. Kronig (Delft), A. Rutgers (Gent), J. Van Wolput (Louvain), J. Beenakker (Leiden). *Third row:* O. Verbeke and J. Smits (Louvain), E. Justi (Braunschweig), C. Manneback, L. Bouckaert, H. Zink, J. Van Biesen, L. De Laet, J. Witters, L. Stals, and F. Steffens (Louvain). *Fourth row:* A. Kastler (Paris), R. Hilsch (Göttingen), M. Steenland (Eindhoven), A. Cops and G. Forrez (Louvain).