

# Meetings

## *Conference on Invariance*

THE Latin American School of Physics organized a series of seminars during the past summer in Mexico City. The principles of invariance, a most timely subject, was the general theme of the conference but two of the lecturers, Marcos Moshinsky of the University of Mexico and Maurice Levy of the Ecole Normale, digressed to subjects which are even more at the center of attention. Moshinsky lectured on  $\beta$  decay, traced the influence of invariance principles on the theory of these phenomena, and the even more profound influence which the phenomena exerted on the theory. He concluded with a review of the  $\beta$  decay in the light of the universal  $V-A$  interaction. Levy spoke almost exclusively on dispersion relations and covered, in a relatively short course of lectures, an extremely broad field. Even for one who came from one of the homes of dispersion theory, his lectures, with their traditional French elegance, had much to offer and proved most instructive. He concluded his lectures, which dealt mostly with the applications of dispersion theory to collision problems, with some of the most recent advances of the theory: the applications to vertex operators and Wightman functions.

The two other lecturers, J. Leite Lopes and the present writer, stuck more closely to the theme of the conference. Lopes reviewed the various symmetry principles, including reflections and charge conjugation, the limits of their validity, and traced the influence of invariance principles, both accurate and approximate, on

the laws of physics. The present writer's review concerned the application of symmetry principles to practical problems, the classification of atomic and nuclear energy levels, and on collision problems. This last review contained a comparison of the "standard" theory of angular distributions and directional correlations, developed chiefly by Blatt and Biedenharn, with the more recent formulation of Jacob and Wick.

All the lectures were given in English and took place on Tuesdays, Thursdays, and Fridays. The conference lasted six weeks, from July 20 to August 30. Hearing four lectures in a row was often somewhat exhausting—most lecturers and many in the audience attended all four courses—but it provided a long and leisurely week end. Mexico is one of the world's most interesting countries, full of color and fascination. Even those who were less interested in the archeological relics, of which Mexico has more than any country which this writer has visited, could marvel at the natural beauty of the surroundings, at the life of a bustling city, at the proximity of the most modern to the old culture and way of life.



Excursion on Lake Xochimilco. A. Tejera, T. A. Brody, D. Holliday, Mrs. Moshinsky, Mrs. Tyera, J. Leite Lopes.



Participants at the Latin American School of Physics held last summer at the University of Mexico. M. Vazquez, M. Bauer, J. Leite Lopes, E. P. Wigner, D. Holliday, M. Levy, G. Cocho, M. Moshinsky, Miss C. Thions, C. Mallman, F. Alba, G. Jacob, W. T. Sharp, F. Prieto, I. Renero, J. Oyarzabal, M. Colon, J. M. Lozano, and F. M. Medina in front of the Van de Graaff Laboratory.

Mexico City is at an elevation of 10 000 feet and the climate is always pleasant and invigorating. It is surrounded by majestic mountains and volcanoes—and also charming lakes, brooks, and forests. One of the pictures was taken during a joint excursion of the participants when they went for a boat ride on Lake Xochimilco.

About 35 students participated at the conference. Eight came from the United States, one from Canada, and the rest from all over Latin America, with a natural preponderance of Mexican students.

Marcos Moshinsky was the moving spirit behind the conference and he was responsible also for most of the arrangements. These were excellent. The conference was sponsored by the Nuclear Energy Commission of Mexico, but special grants were provided also by the US Department of State and UNESCO. A similar conference will be held during the coming summer in Brazil, with a program to be announced later.

The writer hopes that the preceding lines have conveyed the impression that participating at the conference was not only profitable but also enjoyable and that students and staff deeply appreciated the cordial hospitality of University and people.

**Eugene P. Wigner**  
*Princeton University*

#### *APS New York State Section*

**E**NERGY conversion and science teaching were the topics of two symposia of invited papers held October 30–31 at the University of Rochester on the occasion of the Fall Meeting of the New York State Section of the American Physical Society. About 160 physicists attended the meeting.

At the Friday symposium ("Modern Advances in the Useful Conversion of Energy") David Douglas of General Electric outlined the history and principles of fuel cells, in which the chemical energy of a conventional fuel is converted directly and usefully into low-voltage dc electrical energy. In the ensuing discussion, led by George Evans of National Carbon, it developed that while present cells will yield 0.8 to 1.15 volts, and hydrogen cells are widely used in special applications, there are a "good many years" to technical feasibility of large-power high-temperature cells. R. R. Heikes of Westinghouse, in describing the principles of thermoelectric converters, pointed out that the same figure of merit of a thermoelectric material is of interest for both power generation and refrigeration, and is a function of thermal conductivity, resistivity, and the Seebeck coefficient. He discussed, in a well-organized presentation, the fundamental parameters in materials such as doped semiconductors upon which the macroscopic parameters depend.

Converters relying upon radiant energy input received attention as Joe Loferski of RCA and Peter Glaser of A. D. Little discussed fundamentals of the photovoltaic process and of arc or sun-imaging systems and applications, respectively. The General Electric work on thermionic converters was detailed by J. M. Houston, who described the various means for over-

## EXPERIMENTAL PHYSICISTS

**for work in  
Solid State Physics  
and Cryogenics**

An unusual opportunity for physicists who desire to do applied research in the development of new devices. A limited number of senior level positions and a supervisory position are open in a new group being set up at General Electric's Advanced Electronics Center at Cornell University.

Projects will include the development of several devices including masers, coherent optical sources, micro components and infra red camera tubes. A PhD or equivalent is required plus 3–5 years' experience in applied research.

The Advanced Electronics Center at Cornell University is right in the heart of New York's Finger Lakes Region. A location that combines pleasant, small-community living with all the educational and cultural benefits usually found in metropolitan locales.

*Please address inquiries to  
Mr. James R. Colgin, Div. 51 MC.*

**LIGHT MILITARY ELECTRONICS DEPT.**  
*A Department of the Defense Electronics Division.*

**Advanced  
Electronics  
Center at  
Cornell University**

**GENERAL  ELECTRIC**

ITHACA, NEW YORK