

problems, Professor Loeb presents not only the conclusions but the thoughts along the way. This produces a scientific notebook quality to the book which makes it both interesting to read and scientifically rewarding to those in search of information and guidance about the corona mechanism.

PHYSICS AND SOCIAL PROBLEMS

THEORIE PHYSIQUE ET RECHERCHE PREVISIONNELLE. Conf. Proc. (Paris, May 1962). J.-L. Destouches, ed. 180 pp. Gauthier-Villars, Paris, 1964. Paper 28F.

by *R. Bruce Lindsay*

Immediately after the conclusion of World War II there was organized in l'Ecole Centrale des Arts et Manufactures in Paris a "Centre de Recherche Scientifique" in order to bring to bear on industry the enormous development of basic research in this century. Such subjects as the physics and chemistry of metals, thermodynamics and fluid mechanics began to be intensively studied in this center. In 1961 a new section was inaugurated, dedicated to "Recherches Prévisionnelles." Its purpose was to take advantage of the new developments in cybernetics and modern planning theory to make intensive studies forecasting future progress in many fields of human activity. The project was conceived on a rather ample scale. Thus it was intended to include predictions of future developments in theoretical physics, e.g. the possible reformulation of quantum mechanics, as well as the forecasting of developments in the economic and social fields, e.g. city planning.

The volume under review is a report of the proceedings of the first international conference held under the auspices of the new center in May, 1962, organized by J.-L. Destouches under the presidency of L. de Broglie. It constitutes No. 14 in the series "Les Grands Problèmes des Sciences". M. Destouches, well known for his searching investigations into the mathematical foundations of quantum mechanics, is professor at the Sorbonne and director of the Centre de Recherches Prévisionnelles de l'Ecole Centrale.

The reader will find the book a rather singular one, since the first half is made up of six articles on quantum mechanics and elementary particle theory, whereas the second half is devoted to papers on probability and statistics with applications to linear programming, operations research, city planning and automation. In this melange there is indeed a common thread, namely that the same general philosophical principles at the basis of theorizing in an abstract science like physics are also applicable to a wide variety of problems in other domains of human intellectual activity. Whether this will lead sociologists, economists and industrial engineers to immerse themselves in the intricacies of quantum physics and its methodology is open to doubt, but the challenge is obvious.

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R. Bruce Lindsay is dean of the graduate school at Brown University.

SYMMETRY FOR THE PASSERBY

LIE GROUPS FOR PEDESTRIANS. By Harry J. Lipkin. (North-Holland, Amsterdam) Wiley, New York, 1965. \$6.00.

by *John G. Taylor*

One of the most important advances in our understanding of the elementary particles in the last few years has been through the use of symmetries of various sorts, both in nuclear and high-energy physics. The relevant symmetry groups are generally assumed to be Lie groups, and the appearance of energy levels grouped close together or with certain regularities is taken as an indication of which Lie group and its representations are important. In order that ideas involved and methods used be understood by more than experts, it is necessary that a suitable introduction be written describing these ideas and methods. There are two traps into which such an introduction can fall; either that of excessive simplicity, in which case the reader ends up not knowing much

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A professor at Rutgers University, John G. Taylor has published extensively on mathematical physics.



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by *V. V. Batygin and I. N. Toptygin*

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