ADVANCES IN
NUCLEAR PHYSICS

VOLUME 2

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ADVANCES IN NUCLEAR PHYSICS

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PREFACE

The aim of *Advances in Nuclear Physics* is to provide review papers which chart the field of nuclear physics with some regularity and completeness. We define the field of nuclear physics as that which deals with the structure and behavior of atomic nuclei. Although many good books and reviews on nuclear physics are available, none attempts to provide a coverage which is at the same time continuing and reasonably complete. Many people have felt the need for a new series to fill this gap and this is the ambition of *Advances in Nuclear Physics*. The articles will be aimed at a wide audience, from research students to active research workers. The selection of topics and their treatment will be varied but the basic viewpoint will be pedagogical.

In the past two decades the field of nuclear physics has achieved its own identity, occupying a central position between elementary particle physics on one side and atomic and solid state physics on the other. Nuclear physics is remarkable both by its unity, which it derives from its concise boundaries, and by its amazing diversity, which stems from the multiplicity of experimental approaches and from the complexity of the nucleon–nucleon force. Physicists specializing in one aspect of this strongly unified, yet very complex, field find it imperative to stay well-informed of the other aspects. This provides a strong motivation for a comprehensive series of reviews. Additional motivation arises from outside the community of nuclear physicists, through the inevitable occurrence of the nucleus as an accessory or as a tool in other fields of physics, and through its importance for terrestrial and stellar energy sources.

We hope to provide a varied selection of reviews in nuclear physics with a varied approach. The topics chosen will range over the field, the emphasis being on physics rather than on theoretical or experimental techniques. Some effort will be made to include regularly topics of great current interest which need to be made accessible by adequate reviews. Other reviews will attempt to bring older topics into clearer focus. The aim will be to attract the interest of both the active research worker and the research student.

Authors will be asked to direct their article toward the maximum number of readers by separating clearly the technical material from the more basic aspects of the subject and by adopting a pedagogical point of view rather than giving a simple recital of recent results.

Initially, the *Advances* are scheduled to appear about once a year with approximately six articles per volume. To ensure rapid publication of the papers, we shall use the “stream” technique, successfully employed for series in other fields. A considerable number of planned future articles constitute the source of the stream. The flow of articles from the source takes place primarily to suit the convenience of the authors, rather than to include any particular subset of articles in a given volume. Any attempt at a systematic classification of the reviews would result in considerable publication delays. Instead, each volume is published as soon as an appropriate number of articles have been completed; but some effort is made to achieve simultaneity, so that the spread in completion dates of the articles in a given volume is much less than the interval between volumes.

A list of articles published in Vol. 1 and a list of articles planned for future volumes is given on page v. The articles published or in preparation still fall short of our long-range aims for coverage of the field of nuclear physics. We continue to need more articles on experimental topics. We shall eagerly receive and discuss suggestions of topics for additional papers, and especially suggestions of suitable authors to write them.

M. Baranger

E. Vogt

October 15, 1968

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