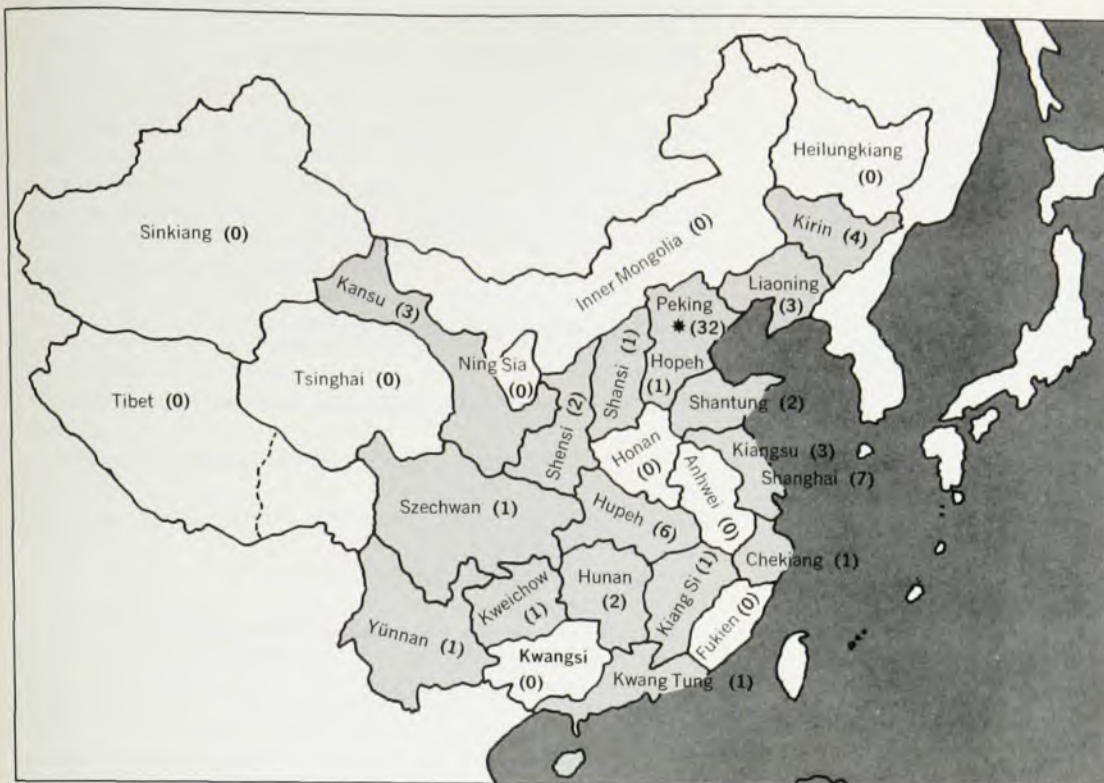




Science in mainland China. Numbers in parentheses represent physical-science institutions within a particular province or city. (From *Directory of Scientific Institutions in Mainland China*.)

assisted by Yuan-li Wu and Robert B. Sheeks. The information contained provides a broad view of the structure of Chinese scientific institutions and their managing personnel. The 490 institutions listed appear under the following categories: Chinese Academy of Sciences, Chinese Academy of Medical Sciences, Academy of Agricultural Sciences, institutions attached to central, provincial and municipal governments, industrial research institutes, professional societies, colleges and universities. Under each entry, a brief description is provided of the institution's research activities, achievements, history and organization, as well as brief biographies of its key personnel. There are three appendices to the Directory: A Wade-Giles to P'in Yin and P'in Yin to Wade-Giles conversion table for the latinized names of the individuals and institutions; a listing of additional research and development institutions, and a series of maps that give a quick view of the geographical distribution of the institutions. Separate indexes for the key personnel, fields and institutions are provided for quick reference.

This book is obviously of value to scholars who are interested in the scientific activities of Mainland China and their historical development. It might also be useful to trade groups and travel agencies working with trade groups, especially since many of the institutions described appeared to have a very practical orientation. Much of the actual planning and engineering that we normally associate with private industry apparently takes place within some of these institutions. The Shanghai

Academy of Textile engineering and the famous Chiao-T'ung University are typical examples. Finally, the structure of Chinese scientific organization as revealed by this book may very well be of interest to planners in the US.

Generally speaking, this book is well written. However, there are a number of mistakes. For example, Map 1 is not compatible with Map 7 for Tsinghai province, and a famous physicist, K. Huang, who is listed under entry 52, is not listed in the index. Surprisingly, certain important aspects of the biographies of key personnel have been left out. There are numerous examples; however, a few will suffice. There is no mention of the French Academy of Science's physics award to Ch'ieu San-ch'iang, and of the fact that Ch'ieu Hsueh-shen was a favorite student of T. von Kármán, and was sent to Germany as a US Air Force colonel to head a delegation for the evaluation of German rocket development in 1945. It is also disappointing that a classic book on lattice dynamics written by K. Huang and M. Born and a book on semiconductor physics by Tse Shi-Tei were not mentioned. The term "Mainland China" appears to be used only in the title, because in the text only "Communist China" is used.

This Directory is not adequate for the purpose of promoting communication between scientists working in a given research area in China and the US. I have looked up all the papers published in the Chinese Journal of Physics between the years 1966 and 1967 and failed to find one author whose biography is included in the Directory. This is not surprising because most of those

included are administrative personnel. Let us hope that the cultural exchange that existed between China and US before 1967 may soon be restored.

Raphael Tsu

IBM Thomas J. Watson Research Center
Yorktown Heights, N. Y.

Excitation Mechanisms of the Nucleus, Nuclear Theory Series, Vol. 2

By J. M. Eisenberg, W. Greiner
370 pp. American Elsevier, New York, 1970. \$19.25

Physics books are written with some primary purpose—to teach the elements of a subject, to introduce the reader to a new area of research, to explain the basic ideas that dominate a field, to discuss technical details of theoretical calculations or to present experimental data and discuss their analysis. The "handbuch" tries to do all these things in one package. At the present stage of development, a nuclear-physics handbuch is hardly possible. Even in the limited area of nuclear structure, there is simply too much material to cover in a unified way. The volumes of Aage Bohr and Ben Mottelson are a valiant attempt to tell all. They make a clear demarcation between presentation of basic ideas, detailed calculations, and discussions of data. Nuclear structure is discussed in a unified way so that one sees how each type of experiment and its theoretical analysis fit into the grand design.

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size principles and fundamental ideas, select topics to be covered thoroughly, and refer the reader to detailed treatments of topics that are only briefly covered. The present attempt by J. M. Eisenberg and W. Greiner (another trilogy, of which this is the second volume) suffers from confusion of purpose. It devotes almost 100 pages to electrodynamics and the quantum theory of radiation, subjects that are easily available (and more clearly presented) in other books. It gives extremely detailed calculations that are often abruptly terminated in midstream and capped with a page-filling formula. There is little discussion of ideas and little effort to show a clear connection between the experimental data, their analysis, and theories of nuclear structure.

This second volume discusses electromagnetic and weak interactions. It gives considerable detail about photo-nuclear excitation, but omits completely the subject of gamma-ray emission. It also contains brief discussions of beta decay and Coulomb excitation, and a section on muonic atoms and muon capture.

Morton Hamermesh
University of Minnesota

Relativity and the Question of Discretization in Astronomy

By D. G. B. Edelen, A. G. Wilson

186 pp. Springer-Verlag, New York, 1970. \$10.50

There are many features of the universe that current theories make little, if any, attempt to explain. One of the most remarkable is the existence of hierarchies of well defined discrete classes of structures such as stars and galaxies, particularly if we accept the explanation that the universe evolved from a relatively uniform primeval state. The present work makes no direct attempt to discuss this kind of discretization, but is largely concerned with the possibility that there are quantized sequences of the forms of elliptical galaxies.

This monograph is the result of a collaboration between a mathematician, Dominic Edelen, and an astronomer, Albert Wilson. Its first part consists of a discussion (within the framework of the general theory of relativity) of the forms of isoplethic surfaces. These surfaces are characterized as surfaces at which jump discontinuities in the momentum-energy tensor occur. They are identified as boundaries of galaxies by the geometric requirement that time-wise cross sections must be homotopic to the surface of an oblate spheroid in three-dimensional space. This does not mean that the apparent forms of the gal-