traditional textboks, are covered in this book also. These include the anatomy and physiology of the speech mechanism, phonetics, acoustics, gesture and body movement in speaking, the organization of speeches, types of speeches, motivational appeals, and oral style.

The level at which the authors treat their subject is definitely introductory; they state in the preface that their coverage of subject matter is "general in nature and limited in detail" and that they assume the student will eventually take more advanced courses. It is a sobering comment on our high schools that a beginning textbook at the college level, even one written by authors whose sensitivity to the depths and ramifications of their field is clearly evident, would reflect as much regard as this one does for the representative freshman's unfamiliarity with anything resembling substantial knowledge and the discipline involved in theorizing.

The major purpose of the authors appears to be that of stimulating the student's interest in speech, and they provide an abundance of practical exercises, materials to be analyzed and evaluated, and suggestions for speaking performances. Moreover, as has been suggested, they introduce the student to ways of thinking about thinking and talking about talking that are decidedly likely to be corrosive of apathy and self-satisfaction. After studying this book it should be harder for the student to feel at home at home and easier for him to live comfortably, and even a bit creatively perhaps, in mid-air, which is where modern men seem to have taken up their abode for the foreseeable future.

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**Methods of Quantitative Micro-Analysis.** R. F. Milton and W. A. Waters, Eds. St. Martin's, New York, and Arnold, London, ed. 2, 1955. xi + 742 pp. Illus. $15.

Quantitative microanalysis has grown so rapidly that the editors found it necessary to revise and expand the first edition of this book, which appeared in 1949. Two chapters have been added: one dealing with chromatographic analysis and the other describing microbiological techniques, each written by specialists in the respective field. Of necessity only comprehensive presentations of typical examples of each experimental method have been included, but each has been augmented by fully referenced tables of similar published analytic procedures placed at the end of each chapter. Thus it has been possible to present a representative account of modern microanalysis in one volume.

The book consists of eight parts and covers the following topics: gravimetric and general microchemical techniques, microanalysis of organic compounds, volumetric analysis, colorimetric analysis, electrochemical methods of microanalysis, gasometric methods of microanalysis, chromatographic analysis, and biological methods of microanalysis. Apparatus and the presentation of data are well illustrated with figures. Author and subject indexes conclude the book. The printing, paper, and binding are good.

The second edition of this valuable book will be welcomed by all analysts who make use of microtechniques.

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**Elementary Theory of Nuclear Shell Structure.** Maria Goeppert Mayer and J. Hans D. Jensen. Wiley, New York; Chapman & Hall, London, 1955. xiv + 269 pp. Illus. $7.75.

This is a good book for those who want to evaluate the current status of the nuclear shell model and for those who want to get a short, clear summary of the fundamental concepts and salient facts of nuclear physics today.

Since the proposal of the shell model in its present form in 1949, mainly by the authors of this monograph, it has become a dominant idea in nuclear physics. Although it is not yet derivable from laws about nuclear forces, it nevertheless provides a satisfactory framework for systematizing hundreds of facts about both stable and radioactive nuclei. It is perhaps the concept most used by the nuclear scientist today in assimilating new data. Do they or do they not conform to shell-model expectations? If not, are they related to other misfits?

Here will be found comprehensive discussions of nuclear moments, beta decay, gamma radiation, and light nuclei in relation to the model. Conveniently collected in this one book are Schmidt diagrams, graphs showing variation as a function of nucleon number of quadrupole moments, isotope shifts, energies of first excited states of even-even nuclei, tables of ground state data, beta-decay data, stripping-process data, and so on. The authors realize that a possible step toward understanding why the shell model works so well is the assessment of its breakdowns. The failures of the model are carefully pointed out. Some of the individual chapters have interesting summaries, but there is no over-all summing up.

The experienced scientist may be disappointed at the lack of a fairly complete bibliography of theoretical papers related to the model. The authors excuse this deficiency on the grounds that the book is intended as an introduction and not as a compilation.

The brevity and compactness will appeal to the beginning student or nuclear technologist who wants to familiarize himself with ideas fundamental in all nuclear discussions today. For the newcomer this book offers many short, but beautifully clear, explanations of such concepts as parity, isobaric spin, pairing energy, nuclear matrix element. There is a convenient review of atomic structure to help with the nuclear ideas. Acquaintance with quantum mechanics is taken for granted. Mathematical details are not omitted but are collected in several appendixes. Indeed, as the authors clearly intend, the novice can gain, with the help of this book, a pretty good working knowledge of the main facts about radioactivity and stable nuclei. He will find quickly in what a spectacular way many of these facts are given order and meaning by the shell model and will learn certain of the limitations of this systematization. These perceptions will illuminate the whole field of nuclear physics for him and will perhaps lead him to the deeper understanding of nuclear structure we are all seeking today.

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**Canadian Cancer Conference.** vol. I. Proceedings of the first Canadian Cancer Research Conference, Honey Harbour, Ontario, 16 June 1954. R. W. Begg, Ed. Academic Press, New York, 1955. xii + 443 pp. Illus. $8.80.

The Canadian National Cancer Institute ensembled grantees and research fellows from all over the country to a 4-day informative conference in which 33 Canadian, one Danish, and seven United States scientists discussed results and methods of experimental cancer research. The main issues were induction and transplantation of tumors (8 papers), tumor-host relationship (9 papers), enzymes and metabolism (9 papers), and biological effects of ionizing radiations (3 papers). In some studies, developments in the respective fields were extensively reviewed (Andervont, Armstrong, Furth, Johns, McHenry, Mider, More, Parker, Quastel, Rossiter); in others impressive accounts were given on laboratory research in Canada (Allard, Begg, Cantero, Franks and associates, Goranson, McEwen, Selye, Skipper, Skoryna and others).

Four papers dealt with human cancer and cancer in general. The conference