Some Problems in Chemical Kinetics and Reactivity, Vol. 1 (2nd Revised Edition). By N. N. Semenov. Translated from Russian by Michel Boudart. 239 pp. Princeton U. Press, Princeton, N. J., 1958. Paperbound $4.50. *Reviewed by Henry Wise, Stanford Research Institute.*

To the student in reaction kinetics the significant scientific contributions by the Russian School under Professor Semenov are well known. The present book is of interest not because of its novel approach to problems in chemical kinetics but rather because of its review of current Russian thought on this subject. As pointed out in the introduction, this book is the outgrowth of a Symposium on Chemical Kinetics and Reactivity held in Moscow in 1955. The author did not intend to write a sequel to his treatise on *Chemical Kinetics and Chain Reactions* published some twenty years ago. Instead he attempted to present the "state of the art". As a result this volume represents a review of some of the work in the field of chemical kinetics, particularly by Russian scientists. The topics included cover a range of subjects such as the reactivity of mono- and diradicals, the dissociation of molecules, the recombination of radicals by homogeneous and heterogeneous reactions, and chain initiation by ions of variable valence. Whereas the reactivity of radicals is considered in some detail from a kinetic and thermodynamic viewpoint, the treatment of heterogeneous reactions appears oversimplified, especially in view of recent applications of solid-state research to problems in catalysis by metals and semiconductors.

This book is valuable because of the extensive bibliographies with special reference to Russian research including some doctoral dissertations. As a matter of fact, if one were to judge by the references quoted in the chapter on "Wall Initiation and Termination of Chain Reactions", one gains the somewhat erroneous impression that this subject has been the purview of Soviet scientists. It indicates the high level and quality of research on the kinetics and mechanisms of chemical reactions.

The Earth and Its Gravity Field. By W. A. Heiskanen and F. A. Vening Meinesz. 470 pp. McGraw-Hill Book Co., Inc., New York, 1958. $12.50. *Reviewed by Serge A. Korff, New York University.*

Two of the best-known experts on the subject of gravity have collaborated to produce this excellent and certainly authoritative text. The book goes thoroughly into many aspects of geophysics and is on a level suitable for advanced graduate students. Indeed an expert may find it a useful reference book on many occasions.

The first chapter of the book is a summary, and is in itself a review, good enough so that this reviewer has to resist the temptation to quote at length from it. The chapter could well be read by persons who wish to get a brief view of the subject. The second