of the most definite information on the Cordilleran geosyncline—a major feature of the map—has been found in that part of the Basin-Range country. On evidence much less secure, the authors have not hesitated to represent the "Beltian zone" as a continuous unit from northern Mexico to a high latitude in Canada. Even the Front and Laramie ranges are represented as "Beltian." And the map gives no place to the zone of deformation commonly known as "Laramide," though inclusion of Tertiary lava fields implies an aim to present a complete structural picture. The significance of the large areas indicated as being Precambrian is not clear. Figure 36 (plate 11), though drawn to smaller scale, presents the general tectonic features of the Cordilleran region more satisfactorily than does plate 12.

The brief list of source references cited for "The Cordilleran Drama" suggests that the authors may be unfamiliar with much of the published information. Another weakness of this section, and of the entire volume, is the lack of reference in the text to pertinent illustrations. Careful search through the pages dealing with North America has failed to locate one such reference, and in the entire volume the textual citation of figures is extremely rare, though some references are made to illustrations in the earlier volumes, on *Biosphère* and *Petrogénèse*. Captions of plates 12 and 13 in the present volume are skeletal, and readers must look to the text for explanation of many details. Text and illustrations should be mutually complementary, and the reader would be helped, with respect both to economy of time and total return from his study, by a more systematic welding of the two forms of exposition than is evident in the Termier volume.

I do not feel competent to analyze critically much of the treatment related to other continents, but another unfavorable comment on the drawn illustrations seems in order. Most of the many maps have neither scale nor latitude-longitude coordinates. Lack of scale is unfortunate, especially for foreign readers, in such diagrams as plates 47 (Armorican massif), 50 (the Vosges), 51 (Black Forest), and many others. Anyone who is not familiar with these areas can comprehend the diagrams only by reference to an atlas, whereas a scale printed with each figure would give proper perspective at a glance. Plates 46 (Harz Mountains), 59 (part of Spain), and a few others have scales. Why are these so favored? Maps showing areas of continental dimensions should have both scale and latitude-longitude markers. Plate 28 (East Siberia) has these; why not plates 23 (Asia), 33 (Africa), 43 (South America), and others? The general viewpoint of geographers and geologists was once expressed by Isaiah Bowman in the form of a riddle: "When is a map not a map? When it has neither scale nor coordinates." It seems axiomatic that a structure-section too must have a scale, but this primal rule is not strictly observed by the Termiers, as witness their figures 116 (Fallot's Beltic Cordillera) and 119 (Argand's western Alps), both major cross sections reproduced without indication of their horizontal extent.

The numerous tables that summarize orogenic history are an admirable feature of the Termier volume. These tables are generally well executed and serve the reader not only as a useful guide in his reading but also as a ready source for reference in a search for specific information.

No doubt other readers of the volume will find weaknesses not listed here. It is a work that required stupendous labor—the digesting of geologic literature in several languages, involving countless manhours spent in analysis and compilation. In the nature of human things, the result cannot be perfect. An over-all appraisal must recognize the high merit of this work as an attempt to integrate the results of geologic study into a global picture. Perhaps the result demonstrates that the task is too great for a small team in one country. Surely the most glaring weaknesses in the treatment of North American materials might have been eliminated through the aid of a well-informed structural student on this side of the Atlantic. In addition to the language difficulties, the size of the fast-growing mass of literature makes judicious summarizing and accurate graphic representation ever more difficult. The next major step may be a project similar to that represented by the volume *Orogénèse* but carried out by a competent international team. Meanwhile, the Termiers merit our gratitude for their devoted labors. Their volume is a highly useful reference work, and should be a stimulus to further cooperative studies in megatectonics.

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Virus in the Cell. J. Gordon Cook. Dial Press, New York, 1957. 208 pp. Illus. $3.

This book is part of a *Science for Everyman* series and is written in very simple language. The first eight chapters deal with the principal virus diseases of man, and the emphasis is on epidemiology as well as on the history of the development of vaccines, from smallpox to poliomyelitis. The four chapters that follow deal with the viruses of animals, insects, bacteria, and plants. The title *Virus in the Cell* best fits the last six chapters, which are devoted to basic research in virology. A fair number of illustrations, mainly from authoritative sources, is included.

It is a pleasant, exciting, and informative book to read. The degree of accuracy is adequate for a book of this type, though there are a few oversimplifications. For example, the typhus rickettsia is called a virus, and the distinction between virulent and temperate phages is not made. But, in general, the author does not shun complicated problems or recent advances.

This book is most appropriate for laymen and young readers. Perhaps some will be inspired to take up the study of virology.

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The Quicksilver Doctor. The Life and Times of Thomas Dover, Physician and Adventurer. Kenneth Dewhurst. Wright, Bristol, England, 1957. ix + 192 pp. Plates. 21s.

The advent of the antibiotics—biologic and chemotherapeutic agents—has reduced the compound powder of ipecacuanha and opium to a very lowly place in the physician's therapeutic armentarium. Yet for the past two hundred years, almost every physician has employed this useful diaphoretic and sedative, familiarly known as "Dover's powder," in the minor respiratory infections, and almost every teacher of pharmacology has passed on to his students the romantic, if not quite historically accurate, comment that its inventor was the pirate physician, Thomas Dover. But the fascinating story of this 18th-century physician needs no embroidering.

The younger son of a Royalist captain of horse, Thomas Dover became a pupil of the great Thomas Sydenham, from whom he acquired something of the true Hippocratic approach to clinical medicine and common-sense approach to therapy at a period when the practice of physic had been reduced, by theoretical systematists, to the imbecilities satirized by Molière. From successful medical practitioner at Bristol, he turned aside to become one of the leaders in the most successful privateering expedition of naval history, in which he rescued Alexander Selkirk, the prototype of Daniel Defoe's Robinson Crusoe, from the island of Juan Fernandez, stormed the city of Guayaquil, and circumnavigated the globe. Thence, he continued his travels to Asia Minor, to return and lose all, a virtual bankrupt, in the South Sea "bubble." Finally, as an epilogue to this romantic and checquered career, in his 70th year he engaged in one of the great

polemics of medicine with his advocacy of heroic doses of metallic mercury, from which he derived fame as the "Quicksilver Doctor," which episode gives title to this book.

This is a very enjoyable book, providing us not only with almost all that is known about Thomas Dover but placing him in his contemporary setting among his teachers, friends, acquaintances, and critics. Many a famous name—Radcliffe, Sloan, Mead, Dampier, Woodes Rogers, Lady Montagu—enters into the narrative. There are many details of Thomas Dover's life which are obscure or unknown, but the author, Kenneth Dewhurst, seems to have searched all possible sources and is thus able to expand the little that is known of his subject. However, the author gives 1662 as the date of Dover's birth, against 1660 in *The Dictionary of National Biography,* without apparently recognizing the inconsistency between his own sources—the admission register of Gonville and Caius and the baptisimal register—and other entries. Likewise, Thomas is accepted as the editor of the 1770 edition of the *Annalia Dubrensia* memorializing his grandfather, whereas the internal evidence points to Thomas' older brother John. Supporters of the "light blue" will be a little disturbed to find (page 12) Cambridge's greatest ornament, William Harvey, "amongst the vanguard of Oxford pioneers." But these are trivia, in a tale exceptionally well told.

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The Defect Solid State. T. J. Gray, D. P. Detwiler, D. E. Rose, W. G. Lawrence, R. R. West, and T. J. Jennings. Interscience, New York, 1957. 511 pp. Illus. $11.

This volume consists of a rather diffuse collection of essays, six of them by T. J. Gray and the other six by colleagues of his at the Alfred University College of Ceramics. Since little more than half of the material presented has anything to do with "the defect solid state," one might perhaps wonder why that title was chosen; perhaps the authors felt that it has a fashionable ring at the present time. At any rate, the book should prove interesting to some who work in other fields, notably ceramics and metallurgy.

Of the articles by Gray himself, it is difficult to write constructively. The author roams over the extensive field, or series of fields, to which he has contributed, touching in his path on the electrical properties of semiconductors and on dislocations, solid state diffusion, adsorption, oxide film growth, corrosion, magnetism, and catalysis. Unfortunately, the result is highly disorganized; good critical comments lie next door to wild and inaccurate statements. It is staggering to find, for example, the sentence (page 34): "An accepted criterion for a semiconductor is that the material possesses a measurable Hall coefficient." More generally, a particular piece of mathematical work (or a particular argument) may crop up three or four times—often in a different notation each time—with no indication that the same territory has been covered in an earlier section. This trouble is worsened by what seems to have been remarkably sloppy proof-correcting of the equations. For example, in the five equations on pages 39 and 40 and the accompanying text, there are six typographical errors; of the equations, the fourth is irrelevant (quite apart from the fact that one of the symbols and one of the phrases associated with it are left unexplained and do not seem to occur again), while the fifth turns out, on close inspection, to be no more than an approximate form of the first, except that *every symbol is different*!

The most disappointing chapter is that on "Defect Structure and Catalysis." Precisely because this is such a woolly subject and because so much nonsense has been writen on it, one looks for something better in the way of a critical survey than that offered here. One seeks in vain for some quantitative correlation, for example, between the activation energy of a catalyzed reaction and the position of the Fermi level (in the bulk or at the surface) in the catalyst. The chapter on "Magnetic Properties of Solids" is better, but it ignores almost everything that has been done in electronic paramagnetism in the last quarter century; electronic paramagnetic resonance (as distinguished from ferromagnetic resonance), for example, is not mentioned, and there is not even a reference to the modern work on crystal fields, which has led to an essentially complete solution of the problem of anomalous g-values.

The chapter by D. P. Detwiler on "Certain Theoretical Aspects of Semiconductivity" may be of use as an elementary introduction to the subject, and the chapter on "Dielectric Materials" by the same author is a competent, if not particularly novel, treatment of the static and dynamic electrical properties of insulators.

D. E. Rose's chapter on "Phase Equilibria" is a good piece of pedagogy and should be useful, both as an introduction and for reference purposes, to metallurgists. Detwiler's chapter on "Intermetallic Compounds" is too brief to be of much value. On the technological side, there are sections on "Experimental Techniques" by R. R. West (differential thermal analysis) and on "Microbalance Techniques" by T. J. Jennings. Possibly the best, and certainly the best written, article in the book is W. G. Lawrence's chapter on "Ceramic Materials for High Temperatures." I am not competent to criticize the accuracy or comprehensiveness of the material in this chapter, but that material is well organized and attractively presented. It is a pity that the same cannot be said for all of the rest of the book.

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Proceedings of the International Symposium on Algebraic Number Theory. Tokyo and Nikko, Japan, September 1955. Science Council of Japan, Tokyo, 1956. 267 pp.

This volume records a successful symposium, organized by the Science Council of Japan under the joint sponsorship of the International Mathematical Union. The subject of algebraic number theory was well chosen, for the current developments of this subject are not only fruitful in their own right but reach effectively into other fields such as homological algebra and algebraic geometry. The location of the symposium in Japan was suitable, for the crown of algebraic number theory lies in the class field theory, which owes much to the pioneering papers published in 1920–22 by the Japanese mathematician T. Takagi (honorary president of this symposium). This interest has remained active, as witness the current contributions of Japanese mathematicians such as Iwasawa, Nakayama, and Tannaka to the beautiful recent developments of class field theory.

The symposium assembled some ten mathematicians from abroad, as well as 55 from Japan. This volume, after presentation of introductory material, presents the mathematical addresses which they delivered at the symposium. Noteworthy is the rapid development of the study of the "complex multiplication" which arises in the description of class fields over certain special algebraic number fields (imaginary quadratic fields). Recent work here was stimulated by papers of A. Weil, of about 1950, and was carried further by M. Deuring, who reports here on his results. Further essential progress has been achieved by the young Japanese mathematicians G. Shimura and Y. Taniyama, whose results overlap current ones of Weil (all reported here), and the discussions at the symposium between these men and others manifestly contributed more ideas for the future (see, for example, pages 9, 32).

Many other developments are represented: modern methods in class field theory involving the study of *idèle* class group (E. Artin, A. Weil) and of cohomology groups; the use of such geo-