retained. Formulas for tristearin and various fatty acids are given in a "long" form, such as CH_3CH_2-$CH_2CH_2CH_2CH_2CH_2CH_2CH_2CH_2CH_2CH_2CH_2CH_2$-$CH_2COOH$ for palmitic acid rather than the conventional shortened form, $CH_3(CH_2)_{14}COOH$ (pp. 119–121).

In general the book should prove to be a valuable teaching aid for instructors and a stimulating textbook for medical students. To quote from the foreword by John T. Edsall, it

> . . . has a freshness and vitality, in its general outlook and in the pattern of the presentation which give it a distinctive place among all the texts of biochemistry for medical students of which I am aware.

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The Theory of Metals. A. H. Wilson, Cambridge Univ. Press, New York, ed. 2, 1953. 346 pp. Illus. $8.50.

This edition is a new work, not only in format, but also in that it is mostly rewritten and has been considerably enlarged. This, in spite of the fact that two chapters of the former edition (the one on optical phenomena and the one on superconductivity) and also the appendix on surface phenomena, including rectification, have been eliminated. Some of the other 10 chapters follow the original outline with the ones on metallic structures and the structure of alloys now forming a special chapter each. A great deal of progress has been made in the last 10 or 15 years, particularly in the understanding, preparation, and theory of semiconductors. These are now discussed in a special chapter, but conductivity in semiconductors and thermoelectric effect, as well as magnetoresistance of semiconductors, are treated in the chapters on the formal theory of conduction and on the mechanism of conductivity. These two chapters are the core of the present work and are the most interesting and most carefully prepared. The book closes with an application of the variational principle to conduction phenomena (a method that was introduced in 1948 by Kohler and expanded by Sondheimer); although mathematically more difficult, it is more powerful. The very large amount of both experimental and theoretical material that has been accumulated in the last decade has made it necessary to limit the material discussed to a certain arbitrary selection of fields.

The British literature is discussed in some detail, but a large amount of material, particularly that of the Russian literature, such as the investigations of Pekar on effective mass, the important investigations of Gurewich on the contribution of phonons to thermoelectricity at low temperatures, and Shifrins' investigations on semiconductors, has not been discussed by Wilson.

The chapter on thermal and magnetic properties of metals contains a very careful discussion of lattice specific heat, electronic specific heat, and a comparison of the experimental data on specific heat with theory. Some of the magnetic properties, such as spin paramagnetism of free electrons and diamagnetism of free and quasi-bound electrons, as well as the rather complicated phenomena of the de Haas-alphen effect, are discussed in detail and up to date.

One may wish that in a future edition the chapter on semiconductors—for the theory of which the author has laid the foundation—would be somewhat enlarged and brought up to date. It is a surprise to read "that cuprous oxide has been given more attention than any other semiconductor." With all the past and present work on germanium it is also somewhat surprising that a numerical example chosen for germanium is one that would hardly be found in practice (10^{20} impurity centers/cm^3 and an activation energy of 0.03 ev). The author is well known for his careful and elegant mathematical deductions and considerations. The reader will find a large amount of material, particularly in the chapter on the mechanism of conductivity, that is not available in this form in other books in the field.

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Abhandlungen aus der Sowjetischen Astronomie. Folge II. Gesellschaft für Deutsch-Sowjetische Freundschaft; Otto Singer, Ed. Verlag Kultur und Fortschritt, Berlin, 1951. 223 pp. Illus. DM 12.20 ($2.93).

This volume contains 13 German translations of Russian papers published in 1950. Most of these are of cosmogonical interest which is not surprising as Russian astronomers have made important contributions in this field in recent years. The publication of these volumes, as the publication of companion volumes on Russian physics, can only be heartily welcomed since the number of Western scientists capable of easily reading Russian papers in the original is still much smaller than the number of those who can read German.

The volume opens with two papers by Schain and Hase (*Uspekhi Fiz. Nauk* **43**, 3 [1950]; *Izvest. Krimskoi Astrofiz Obs.* **5**, 24 [1950]) on the occurrence of C^{13} in stellar atmospheres.

The second group of papers is by Parenago and Massewitsch (*Astr. Zhur.* **27**, 41, 137, 150, 202, 329 [1950]). Two papers deal with the mass-luminosity-radius relation. The first paper considers the empirical data and the second tries to give a theoretical interpretation of these data. The other three papers in this group deal respectively with star velocities showing the differences between high and low velocity stars (Baade's populations are, however, nowhere mentioned!), with the gravitational potential of our galaxy, and with masses of eclipsing binaries.

Then follows a paper by Gurewitsch and Lewin (*Astr. Zhur.* **27**, 273 [1950]) on the formation of

binaries. This discusses the statistics of formation and disruption of binary systems without, however, mentioning Chandrasekhar's work in this field.

Next is a polemic between Woronsow-Weljaminow and Ambarzumjan (*Astr. Zhur.* **27**, 211, 228 [1950]) on the question of whether or not hot giants occur in so-called associations—which play such an important role in recent Russian cosmogonical theories.

The longest paper of the volume is one by Ambarzumjan (*Soob. Bjurakońskoj Obs.* **6**, 3 [1951]) which summarizes his work and that of his group on fluctuations and their importance for apparent star distributions on the celestial sphere.

After an article by Hetmanzew and Ginsburg (*Zhur. Eksp. Teoret. Fiz.* **20**, 347 [1950]) on the possibility of localizing radio sources by studying the diffraction of radio waves by the moon, the volume closes with an article by Woronsow-Weljaminow (*Astr. Zhur.* **27**, 285 [1950]) on planetary nebulae.

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The Manual of Antibiotics, 1954–1955. Henry Welch, Ed. Medical Encyclopedia, New York, 1954. (Order from American Pharmaceutical Assoc., 2215 Constitution Ave., N.W., Washington). 87 pp. $2.50.

This book presents for the first time in one source a ready reference to antibiotics and their preparation. It lists the preparations, therapeutics index, trade and generic names, and the names and addresses of producers and manufacturers of all existing antibiotics and their preparations commercially produced and on markets at the time of publication.

It should prove valuable as a reference, because of the multiplicity of trade names for the same antibiotic, to members of the health profession, especially the physician, dentist, veterinarian, pharmacist, and others engaged in the use of these drugs.

The antibiotics and their preparations are alphabetically tabulated by their generic terms. The trade names given these products by each manufacturer are listed side by side with the generic equivalent. Under each of the generic terms is found the indication for each drug and preparation. The antibiotic preparations also, for ease of use, are alphabetically tabulated, both by trade and generic terms in separate indexes and in an index of all manufacturers with their addresses.

It is necessary to check only the trade-name index to identify a trade-name product. Opposite the trade name in question is the page number on which is the generic term, along with the active ingredients and indications for the preparation, in addition to all other trade names assigned to the products.

The author states that periodic revision of this manual is planned to keep up to date the ever-increasing list of antibiotics and their pereparations.

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Formation des Continents et Progression de la Vie. H. Termier and G. Termier. Masson, Paris, 1954. 135 pp. Illus. + plates. Paper, Fr. 750.

Orogenesis and tectonics, stratigraphy and paleontology are carefully used to introduce the reader to the initial appearance and subsequent expansion of life on the earth. Little credence is put in phantom continents, or those that have had only a legendary existence, and the authors work toward an over-all synthesis that precludes acceptance of the continental drift theories of Wegener and Argand. The Termiers make a distinct contribution by giving present-day examples of phases of the geologic process, illustrated, for instance, by the photo of a group of starving hippopotamuses wallowing in a diminutive mudhole left by the drying up of Lake Rukwa in Tanganyika in 1950. These huge mammals were unable to escape catastrophe by migrating in time to a more humid area.

Even the spectacular geologic phenomena obey regular laws, but a disconformity was experienced in the evolutionary process with the appearance of man who is capable of thought processes. The lack of specialization of his hands and the possession of a brain gave him superiority over all other animals. The authors regard as significant the fact that up to about 100,000 years ago man lived only in the hot and subtropical zones. During the first three glacial epochs man migrated equatorward with the other fauna. By the time of the fourth period of glaciation he could clothe and warm himself and was able to adjust to climatic extremes. Modern man has proved to be a powerful *geologic* agent, in such activities as mining coal, damming streams, reclaiming land from the desert and from the sea, and so on.

This succinct, well-written work is recommended to the general reader.

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Pigment Cell Growth. Proc. of the Third Conference on the Biology of Normal and Atypical Pigment Cell Growth. Myron Gordon, Ed. Academic Press, New York, 1953. 365 pp. Illus. + plates. $7.

It may be questioned whether or not the study of pigment cell growth is developing rapidly enough to justify publication of comprehensive reports every few years. Nevertheless, for anyone who wants to become familiar with current work and find a guide to that of the past, this volume forms an adequate introduction.

The papers consist for the most part of more or less extensive reviews of recent investigations in pigmentation. To a biologist, the coverage will seem to be narrow—that is, to be weighted on the side of human and mammalian pigment cells. Two papers are concerned with structure of melanins and melanin synthesis, three with lower vertebrates (fish, frog, axolotl), two with the chicken, five with the mouse, and ten with man. The emphasis is also heavy on disease: