content, and the results of his theoretical analysis of the causes and engineering control of slides in clays.

Collin's methods and conclusions opened a new era in civil engineering. He recognized the significance of geologic relationships in engineering practice and differentiated clearly between cohesive and cohesionless soils. He concluded that the slip surface is the result, not the cause, of failure, as had been previously proposed by his contemporaries. The fundamental cause of failure of clay slopes was determined to be inadequate shear strength. He showed that such features as the type of clay and the conditions of service to which the slope is exposed may determine the stability. He described and examined theoretically various procedures for the prevention and repair of slides on slopes and embankments.

The book includes 21 plates which are photographic reproductions of Collin's drawings of the profiles of slides described in the text, his geometrical methods of analysis, and methods of preventing and repairing slides. The value of the plates is restricted by the fact that most of the symbols to which Collin refers in the text are illegible.

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Our Atmosphere. Theo Loebsack. Translated from the German by E. L. Rewald and D. Rewald. Pantheon, New York, 1959. 256 pp. Illus. $5.

The rediscovery of the romance of the atmosphere has brought forth an outpouring of popular books in all languages. Not since the heyday of the free balloon has the public imagination been so caught by the phenomena of the earth's air mantle. With space travel only a step away, many of the physical and chemical problems of the atmosphere, which seemed utterly academic only a decade back, are now practical questions. And the ever-changeable weather, with its influence on human activities, has been with man since the dawn of his existence and will remain a governing environmental factor for a long time to come.

As a guide into this realm, the biologist and science writer Theo Loebsack gives us a well-rounded picture. His exposition grips the reader's imagination as he takes us through the world between the earth's surface and space. The origin of the atmosphere, its composition, the sound phenomena, and the optical properties, from blue sky to rainbows and mirages, are well sketched. Polar lights and the endless procession of clouds are adequately described. The nature of winds and weather phenomena, including the drama of hurricanes, tornadoes, and jet streams, comprises a substantial part of the book. Professional meteorologists will appreciate the author's plea for tolerance of their efforts at forecasting. Loebsack also tries valiantly to dispel many myths about cycles, as well as myths that originated in the "hundred-year calendar"—a European forerunner of some of our weather almanacs.

A slight difficulty for the American reader is introduced by the translators' use of British terminology throughout. More serious, however, are the large number of small inaccuracies and loose statements. Here is a random sample of these. One reads that colors of the sky can be caused by comparatively low humidity. The physical laws of the atmosphere are credited to Leverrier. There is a badly scrambled diagram of tornado occurrences and the basic flow patterns that lead to tornadoes. The conflagration of Hamburg, one is told, added water vapor to the air to cause rainfall. The buran is made into an African snowstorm. The word *tension* is misused, in one place to designate potential and in another to indicate tonus. The role of blizzards in destroying crops of coffee, corn, and bananas in the Gulf of Mexico area is considerably overstated. It should have been easy to avoid these slight errors by proper review, and one is surprised to find credit given in the preface to certain experts for such an effort.

It is a pity to have to note these lapses in an otherwise well-written book, which has some very unusual and appealing features. Among these are the interesting discussions on the possible role of an earlier stage of the atmosphere in the generation of life, and the chapter on the relation of the air environment to breathing. The appraisal of radioactive fallout and radiation damage by a neutral observer is sobering.

The book is well illustrated and contains some excellent color reproductions, but the proofreading was carelessly done. On the whole, the merits of the book far outweigh the faults; these could be easily eliminated in another printing.

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Traité de Biochimie Générale. vol. 1, parts 1 and 2, *Composition Chimique des Organismes*. P. Boulanger and J. Polonovski. Masson, Paris, 1959. 1476 pp. Illus. Cloth, F. 24,500; paper, F. 22,000.

This large handbook of biochemistry will be published in three volumes. Volume 1 deals with the chemical composition of organisms; volume 2, with the enzymes; and volume 3, with the metabolic processes and their coordination. The first of these volumes has been published, in two parts. The editors emphasize in their foreword that the work is written to acquaint students with the present state of biochemistry and to supply them with references to sources where they will find directions for experimental work. Two of the principal initiators of this work, M. Polonovski and M. Javillier, died before publication of the first volume. The present editors are M. Florkin, P. Boulanger, M. Lemoigne, J. Roche, and R. Wurmser.

In the first chapter of part 1, M. Javillier and D. Bertrand discuss the discovery of different elements in organisms and their concentration in organs and tissues. The same authors treat the inorganic compounds of biological importance in a second short chapter. The bulk of the two volumes is formed by chapter 3, which deals with the organic body constituents. In a last short chapter F. Tayeau discusses complexes which are formed by the permanent or temporary combination of two or more of the simpler materials. Lipoproteins, glycoproteins (mucoproteins), glycolipids, and complexes formed by antigen plus antibody, by apoenzyme plus coenzyme, or by enzyme plus substrate are briefly treated in this chapter, which, as the author points out, forms a link between classical biochemistry and biophysics.

Chapter 3, which comprises 1254 out of a total of 1397 pages of text, consists of a short introduction, written by Roche, and six other sections. In the first of these Lespagnol discusses the reactions, derivatives, and syntheses of carbohydrates. The very logical classification and nomenclature seem to be typical of French biochemistry; the designation *heterosides* is used for complexes formed by the conjugation of sugars with aglycons. In the next section Naudet and J. Polonovski report on fatty acids, glycerides, phospholipids, and "cerides," while sterols are treated by Bar. The term *cerides* is used for waxes, glycerol ethers, and similar derivatives. A subsequent short section is devoted to the discussion

of isoprene derivatives, phenols, and organic acids. The last three sections deal with proteins and their derivatives. These sections are introduced by an excellent discussion on the general chemistry of amino acids (P. Desnuelle), followed by a similar section on peptides, written by P. Boulanger and G. Bizerte. The same authors also describe the isolation, the properties, and the classification of the proteins; the physical chemistry is treated by Wurmser and Tonnelat. In the section "Heteroproteins" J. Montreuil reports on glycoproteins, on phosphoproteins, and, in collaboration with P. Boulanger, on nucleoproteins; chromoproteins, discussed by Roche, Bar, and Bizerte, are classified as porphyrinic and nonporphyrinic pigments. In the final section of the chapter on proteins various amines and alkaloids are discussed by Nguyen van Thoai and Robin.

I was impressed by the logical, clear-cut classification and presentation of most of the material. This makes the work extremely valuable to students and other persons who want to know more about biochemistry than a good textbook can offer. Most of the chapters contain a wealth of references, so the reader can easily find more specific literature.

The question may be raised as to whether in the present era of rapid progress in biochemistry the publication of such a voluminous handbook is justified. An enormous amount of time and effort on the part of outstanding biochemists is consumed in such a project. I feel that the time has passed when handbooks can be written by experts of a single nation, and that the writing of handbooks of this type sooner or later will be a cooperative enterprise to be undertaken by scientists of many nations. Despite my opinion on this point, however, I consider the *Traité de Biochimie Générale* an admirable survey of the present state of biochemistry and believe it has great value as a didactic and reference work.

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Ecological Processes. Alan Mozley. Lewis, London, 1959. xi + 68 pp. 9s.

By "ecological processes," Mozley means groups of changes occurring with respect to time in ecological situations in nature. He illustrates these processes chiefly from studies of fresh-water mollusks harmful to man—his own field of research. Little is said about other organisms in the ecosystems discussed.

The most interesting sections of the book are those dealing with animals in changing environments. Succession in animal communities has not been thoroughly studied. Although no quantitative data are presented or referred to, the author's suggestion that pest species are most successful in intermediate stages of a sere, following disturbances of a habitat, is of both scientific and practical importance.

A number of statements, such as "Personally, I expect the numbers of animals in a given place to fluctuate more or less," detract from the book. Much of the material is not expressed in a quantitative manner, nor are there many references to research reports of original data. This serves to underscore the need for quantitative observations and adequately designed experiments in this field, as the author indicates. However, in some sections—for example, those on fluctuations and population stability—important advances are not mentioned.

In my opinion, population ecologists will not find this slender volume especially stimulating. The book seems intended rather to advance the author's plausible suggestion, based on extensive observations, for controlling intermediate hosts of parasites and other pest animals.

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Notes of a Soviet Doctor. G. S. Pondoev. Consultants Bureau, New York; Chapman and Hall, London, 1959. iii + 238 pp. $4.95.

This is an awkward translation of a cloying, chauvinistic "doctor book" written by an elderly Russian physician "for young doctors . . . and medical students." It reads more like a lecture on the facts of life delivered to a group of none-too-bright adolescents by an elderly deacon, not too bright either, but bright enough to stay out of trouble.

A chapter purported to describe the origins of medicine mentions Harvey, ties Darwin and Marx into one sentence, and from there on stays within the Russian borders. It will be interesting to see whether Chinese histories of medicine will contain as many Russian names!

To Western ears, the proud assertions that "the Soviet doctor is a government agent" and that this gives him freedom and assures "the highest moral standard," sounds like double talk. In our society, the individual and government are competitive, and balance is maintained through a dynamic equilibrium of checks and diversity. In Soviet society, the individual and the government are one, and competition is unthinkable.

In these times, when species suicide is a real possibility instead of a mad dream, an understanding of the differences between the two cultures must be attempted. Reading this book in this context may be of some small assistance, but the road is rough. If only the Soviets could develop a touch of a sense of humor and see the world in colors and shades instead of in the dreary black-and-whites of the Marxist-Leninist religion!

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Circumpolar Arctic Flora. Nicholas Polunin. Oxford University Press, New York, 1959. xxviii + 514 pp. Illus. $20.20.

Although the circumpolar arctic flora is a small one in number of species, any attempt to describe it is fraught with discouraging difficulties. The exact location of the southern boundary of "the arctic" is a matter of controversy, so more or less arbitrary limits have to be set in the listing of species. Vast areas in the north are still unexplored or poorly explored from the botanical standpoint. Although there has been a resurgence of arctic botanical investigation during the past three decades, international communication among botanists has not kept pace with it. Last but not least, a relatively large proportion of the species are polymorphic and difficult to define.

Polunin has recognized and dealt with all of these difficulties in the introduction to the present volume. The introduction also includes a map which defines "the arctic" for immediate purposes, an explanation of how the book is to be used, and a statement about the truly impressive source materials upon which it is based. The treatment is confined to the vascular flora and opens with a key to the families. Keys to the genera appear in the ensuing text, and if there are more than eight species in a genus, descriptive keys to these species are provided. All the descriptions of