As a textbook in human biology, it is as modern and packed with data as one would hope for, as interesting as any available text, and almost indispensable as a reference aid to all elementary biology teachers, because of its extensive and up-to-date coverage. Another feature of special value, in addition to its physicochemical foundations, is the list of pathologies appended to each chapter, whether the chapter deals with muscle, nerve, skin, bone, glands, or digestion. True, heredity, ecology, behavior, and experimental embryology are omitted, but no one would cite this in complaint. However, the issues that this specific approach raises are of another character. One cannot but wonder whether this volume has been pretested to establish whether so much precooked and ready-to-serve material can be consumed and digested by the beginning student. Moreover, should science be taught in this manner, without providing any historical perspective for the questions raised, the theories offered, discarded, accepted, modified, and challenged, or the controversies stirred up between such giants as Pasteur and Liebig, for example, which reveal the very essence and drama of growth and evolution in science as well as the meaning of theory and truth? Should the student memorize these thousands of facts with no motive, no evidence, no challenge, and, above all, with no knowledge of how they came to be established and upon what foundation they rest? Ultimately, each teacher must choose the kind of text that suits his outlook and attitude.

MARK GRAUBARD
Natural Science, Interdisciplinary Program, University of Minnesota

Russian Genetic Elysium

Problemy Radiacionnoi Genetiki. N. P. Dubinin. Gosatomizdat, Moscow, 1961. 468 pp. Rub. 1.84.

A book on genetics published in the Soviet Union is interesting in two ways. First, and most obvious, one looks for the facts and ideas contained in the book. Second, because for about a quarter of a century the Soviet Union has discriminated against genetics and favored theories that elsewhere have long been considered obsolete, one looks for the denouement of this weird story. In this book Dubinin, who is probably the outstanding living Soviet geneticist, reviews a tremendous amount of information (the bibliography contains 886 entries, 186 of them in Russian and the remainder in other languages, chiefly English), and he casts off Lysenkoist pseudogenetics like a bad dream.

The first chapter (81 pages) is a masterfully condensed exposition of the basic facts and principles of transmission genetics, cytogenetics, and molecular genetics. This is followed by a discussion of the physical nature of radiations (36 pages) and by a long chapter (112 pages) on the genetic effects of ionizing radiations. The remaining chapters are shorter and deal with the genetic effects of ultraviolet and of visible light, the radiation genetics of mammals including man, and the applications of radiation genetics in agriculture, and "Concluding remarks." Population genetics, particularly of *Drosophila*, is scarcely mentioned; this is a conspicuous omission, especially so for an author who has been one of the pioneers in and major contributors to the field. Despite this glaring omission, the book gives the most complete and up-to-date presentation of radiation genetics available, to my knowledge, in any language.

In a book review it is futile to try to summarize the contents of a book that is itself a summary. Suffice it to say that the book is full of interesting facts, interpretations, and ideas; as the author is well aware, some of the ideas will stand the test of time, others probably will not. For example, Dubinin considers human genetic materials to be far more sensitive to radiation damage than those of *Drosophila* or mice. His basis is chiefly his own work and that of his collaborators—M. A. Arsenieva, G. G. Tiniakov, Julius Kerkis, and L. A. Lebedeva—on chromosomal aberrations produced by radiations in the rhesus monkey and in tissue cultures of human cells. From these and other data, he deduces that the doubling dose for genetic changes in man is in the neighborhood of 10 r, a very low value. He then argues that the estimates of the genetic damage in man, based on studies in mice, are unsafe, and he strongly urges the need for "studies on the radiation genetics of monkeys and apes, the animals most closely related to man." At the same time, Dubinin is hopeful of eventually discovering methods of "therapy and prophylaxis of both the physiological and the genetic radiation damage."

The most remarkable and engaging quality of the book is perhaps its consistent and sober optimism. The leitmotiv is this: "Modern experimental genetics has created a new base for the discovery of future powerful methods of directed transformations of the heredity of organisms. . . . Without doubt, when the nature of the chemical coding of genetic properties becomes known, and chemical and physical methods of directed change in the molecules of nucleic acids are worked out, man will have gained an instrument for controlling living nature. By changing the relative positions of the atoms in the molecules of genetic materials, man should be able to create at will the desired new forms of plants, animals, microorganisms, and viruses. This is a way towards radically new solutions of the problems of selection."

Dubinin does not suggest that, in his genetic Elysium, desired new forms of humans may also be obtainable. Possibilities that this may open up surpass the limits of imagination of even the most optimistic geneticists.

THEODOSIUS DOBZHANSKY
Rockefeller Institute, New York

Panoramic Overview

Biennial Review of Anthropology, 1961. Bernard J. Siegel, Ed. Stanford University Press, Stanford, Calif., 1962. 338 pp. $7.50.

This second biennial review of anthropology covers the period from 1957–58 to about mid-1960, though, like its predecessor, it does not deal with all aspects of the discipline.

Two chapters—on peasant life studies by C. Geertz and on the anthropology of development by Vera Rubin—deal with a major current focus: the impact of urban-industrial systems on the world's peasant communities. Although the study of primitive tribal groups has not been abandoned altogether, applied or "action" anthropology is increasingly concerned with cultural change in the far more populous peasant societies. A. F. C. Wallace and R. Fogelson survey the research on culture and personality, now less avant-garde than a generation ago, and also now involved in action programs, from public health to education. These studies overlap into