

mostly well-known, often elementary, facts, largely known even outside the circle of specialists. The authors build on these data long reviews, with wide speculation and generalization in many directions. Such articles would never be accepted by a Western periodical, but the editors of the *Zhurnal*, after printing such an article by Diadichev in three issues ("Contributions to the study of the epidemic process"), ask for more works of this kind (No. 3, page 317). In none of these three articles does Diadichev give a single note of bibliography. The translation of such writing is distasteful to the translator, and many mistakes originate in such translations.

Westerners should bear in mind that the official philosophy to which every Russian scientist is supposed to adhere is that of dialectical materialism—that is, Marxism. With this official doctrine is connected, in Russia, worship of the physiologist Pavlov. This is chiefly because of his works and teachings about the function of the brain and nervous system. Long articles and discussions on these subjects are popular in the Russian periodicals. Such sections of Russian works will seem rather tedious and unreliable to the Western reader. Let us take as an example the article of Gordienko (No. 1, page 138). His "few words" are as long as five pages of small print and start with the quotation: "There must be a painstaking accumulation of facts and its correct understanding on the basis of theory of dialectical thinking." Translation of these articles is difficult because of lack of adequate expressions in English. For 40 years the Russians have hammered on this philosophy and produced a language unknown in the West.

The inclination of Russians to overestimate the achievements in science of their men who have done some experimentation or writing has been even more accentuated in the English translation. The Russians give a relatively poor 3½-by-2½-inch picture of Grigoriev; the picture of him in the English version is 5½ by 4 inches—large and very expressive. The Russian *Zhurnal* is printed on cheap, grayish paper; the English edition is on heavy, glossy paper.

E. DARZINS

Anoka State Hospital,
Anoka, Minnesota

The Limits of Mankind. R. A. Piddington. Wright, Bristol, England, 1956. vi + 153 pp. \$2.60.

"The overshadowing menace of our time is not the Hydrogen Bomb or War or Communism, but the fact that makes all those three spectres loom so large—namely, the increase of mankind by at

least thirty millions annually, and chiefly where the standard of living is so low that all the technical skill of the West, if devoted to the task, could not catch up with the enormous additional demands which that increase brings every year." So writes the author of this little book with big impact.

For too long, in discussions of human population, food has been given first attention. It is time, says the author, to look further. This he proceeds to do in an impressive exposition which deserves to be read by every thoughtful citizen. I would question, however, whether the food problem for the masses of living human beings around the world has, in fact, been solved. Even now the cost of food steadily rises in productive, rich America, and so recent an author as Cole [*Sci. American* 198, 92 (1952)] writes that, as one who would like to live on a meat diet, he cannot see very much to be optimistic about for the future.

Nevertheless, for the sake of Piddington's thesis, and in order to assure some much-needed attention to other problems, let us consider some of the author's further points.

For one thing, a minimum of habitable space, as implied also by Sears [*Science* 127, 9 (1958)], is essential to satisfactory living. Will the purpose of the human race be better served by 5000 million human beings than by 2500 million?

If man persists in destroying the balance of nature, thinks the author, he will contrive his own doom "as surely as if he let loose unlimited radio-activity in both hemispheres." There does seem to be much truth in the statement that "under the dominion of *Homo sapiens*, the world has steadily become denuded of bulky slow-breeding species and overrun by hordes of fantastically prolific vermin and insects."

Close-set, crowded populations facilitate infection. Also, as the epidemic diseases are brought under control, chronic ills seem to be increasing.

The expansion of intellectual civilization that has occurred in the past two centuries bids fair to be less useful than it should be, simply through being overlarge. The British Museum library, with 6 million books, now occupies some 73 of its 75 miles of shelving, and space remains for only 18 months of intake!

"Travel is a universal passion that grips like a drug" asserts our author, and "many unique treasures are being spoiled or destroyed at an accelerated tempo by the hands and feet of the ever-increasing pilgrimage that surges round or through them." We in the United States can see the deterioration proceeding before our very eyes in our own national parks.

"At present, each voter in Britain, in

an electorate of 20,000,000, has a one-twenty-millionth share in the government of others . . . but only a twenty-millionth share in the government of himself . . .," so he is a good deal more conscious of being governed than of governing! Since, in the United States, our population is greater, we are in even worse case; and what shall we say of India and China?

Seemingly, planetary colonization offers little hope for relief. Thirty million persons would have to be exported every year to keep the present population from increasing, and in a few more years the figure would be 60 million.

The author appropriately pays his respects to those who believe that those who feed well do not breed well, that all we have to do to solve our population problems is to build up our industries.

The author's treatment of this difficult subject of population regulation affords a novel approach to some of the things we will face as population continues to increase. It must be conceded that in the absence of effective thought and action, the living conditions of our children will leave much to be desired.

The book has an excellent index. A bibliography would have been helpful.

WALTER P. TAYLOR

Department of Zoology,
Southern Illinois University

Atlas of the Sky. Vincent de Callataÿ. Translated by Harold Spencer Jones. St. Martin's Press, New York; Macmillan, London, 1958. 157 pp. Illus. \$12.50.

Planned for "amateurs who do not have a telescope," the central offering of this atlas is a series of 36 charts with white stars on black background. The charts are designed to appear as much like the real sky as possible. No names or numbers appear on them, but white lines join the brighter stars of a given constellation to help identify its configuration. The first nine charts cover major areas of the celestial sphere; each of the rest pictures a few constellations in detail, including all stars brighter than magnitude 5.5. Each detailed chart is accompanied by one or more maps giving constellation boundaries and designations of the stars and by a listing of objects of interest to the naked-eye observer. With each chart is a short summary of knowledge about a specific topic of stellar astronomy; for example, globular clusters are described along with the chart of Hercules and diffuse nebulae with Orion. At the end is a series of 12 Mount Wilson and Palomar photographs.

The natural charts, although handsome in concept, suffer in two respects.

The broad-area charts do not discriminate brightness; the white dots are all about the same size. While the detailed charts faithfully allow for the brightness of individual stars, the lines joining them fluctuate greatly in intensity: here bold, there detectable only under special illumination. Another difficulty is that the beginning observer, living at a certain latitude, can nowhere find in the atlas specific instructions on where in the sky to look for a given object at the time and date he wants to look. Although the topical summaries are factual and instructive, they occur in random order. Here and there they are blemished by an error of fact or a misleading statement. I cannot agree, for example, that Mizar and Alcor "can be separated only by persons with very keen eyesight." The abbreviated summaries will have fulfilled an important function if, as the author hopes, they "induce beginners to read other works that are more complete and more learned."

STANLEY P. WYATT
University of Illinois Observatory

Algeria. The realities. Germaine Tillion. Translated from the French by Ronald Matthews. Knopf, New York, 1958. viii + 115 pp. \$2.50.

This concise, clear, devastating account of the impasse in French-Algerian relationships is the type of political essay that informs without overwhelming the reader with detail. Germaine Tillion is an ethnographer who did extensive field work in Algeria in the 1930's, was chief of a Resistance network from 1940 to 1942, spent three years in prison, and returned to Algeria in 1954 to restudy the people of the Aurès Mountains, the scene of her previous ethnological work. The combination of deep feeling and scientific objectivity with which the book is written was primarily generated by her recognition of the marked change for the worse among the rural people of Algeria between 1940 and 1954, in spite of the enormous economic effort that France had made to better their condition.

Miss Tillion cuts straight through the prevailing optimism—symbolized by "Point 4" in the United States—that it will be a relatively simple matter, involving some technical *expertise* and a small amount of easily found capital, to bring the underdeveloped countries up to a "developed" standard. She highlights, in the concrete knowledgeable discussion of one country, the danger that economists have been stressing for some time—that the gap between the early-industrialized and the not-yet-industrialized countries will be steadily widening, despite all the effort made to close it.

No one has stated more unequivocally

the problem of what an unindustrialized country needs in the way of immediate, full-scale construction of all of the facilities in which it pays no one to invest—schools, universities, health services, roads—in order to accomplish an immediate across-the-board transformation of the entire social system. After reading this account, no literate person can take any comfort whatsoever in the statistics of number of schools started or roads under way in the undeveloped countries of the world.

The closing section of the book deals with some of the simple political realities which are likely to be forgotten in planning, chief among them being the fact that Algeria today depends, for the merest inadequate subsistence, upon the right of unskilled Algerian laborers to work in France and bring or send their wages home—a completely politically based economy. One sees, simultaneously, Algeria as a model for the world situation in which various orders of benevolently designated activity (United Nations, "Point 4," development schemes of the various metropolitan powers, schemes for loans from the great powers to the small) are involved, and Algeria as a particular situation which must be dealt with in terms of special historical detail. The emphasis is on responsibility and possible courses of action. No time is wasted on recriminations. No time is wasted on a display of erudition. There is not an unnecessary phrase in the book. A reader who knows nothing about North Africa or mid-20th-century technical assistance can get—in a couple of hours—a satisfying grasp of both the ethical and the economic essentials.

MARGARET MEAD
American Museum of Natural History, New York

Introduction to Biostatistics. Huldah Bancroft. Hoeber-Harper, New York, 1957. x + 210 pp. Illus. \$5.75.

Quantitative methods continue to replace qualitative evaluation even in medical research. Diagnosis and therapy are increasingly based more on a rigorous biometric analysis of clinical, biochemical, and pharmacological data of numerous cases than on the result of the findings in individual cases. Although the indispensable tools for handling numerous observations on many individuals are the methods of statistical analysis, medical students as well as practicing physicians usually have very little statistical training and thus lack the ability to ascertain the validity of the increasing amounts of statistical inferences they encounter in the medical literature. To fill this vacuum Huldah Bancroft, pro-

fessor of biostatistics at Tulane University School of Medicine, New Orleans, La., has written a very readable textbook on the use of statistics in medicine, showing how to arrive at, as well as interpret, statistical data.

The book presents the usual course of statistical thinking (though in a very condensed form), with samples drawn from the medical practice. It starts with the frequency distribution and centering constants and goes as far as chi-square tests and correlation analysis. Most useful will be the chapter on quantitative methods of bioassay. However, it is regrettable that the author felt compelled to presuppose no more mathematical knowledge on the part of the reader than high-school algebra, which necessarily restricts her capacity to convey a better understanding of the logical basis of statistical theory, which is based upon concepts of probability. It is to be hoped that the coming generation of physicians will feel high-school algebra inadequate for a full understanding of biological phenomena and will acquire the tools essential for comprehending a universe of enormous variability.

FRANCIS JOSEPH WEISS
Arlington, Virginia

Actions chimiques et biologiques des radiations. Les peroxydes organiques en radiobiologie. R. Latarjet. Masson, Paris, 1958. 156 pp. Illus. Cloth, F. 3600; paper, F. 2800.

This little book presents a series of papers delivered at a symposium at the Radium Institute in Paris in January 1957. The participants were from France, England, and the Low Countries; their presentations, published in either French or English as originally presented, provoked considerable discussion, which has been admirably integrated and which makes fascinating reading.

There is little doubt that organic peroxides are now accepted as playing a major role in the radiation problem. The symposium participants were not of a mind, however, about what fraction of the role to assign to (i) the formation of peroxide directly in the gene substance, (ii) the formation of peroxides of lipids and other substances which then interact with the genetic components, and (iii) the peroxidation of the cell catalysts involved in maintaining and reproducing the genetic material. They gave no attention to the modification of building blocks about to be incorporated into the genetic system.

One gathers that the adherents of the target hypothesis are in a compromising mood and are willing to extend the borders at least slightly beyond the general understanding of the original con-