THE NATURAL WORLD: CHAOS AND CONSERVATION, ed. by Cecil E. Johnson. 1972. McGraw-Hill Book Co., New York. 269 p. (softback); price not given.

Cecil E. Johnson (who is not adequately identified in the book) divides his collection of 16 excerpts into two parts. In part 1 well-known scientists, journalists, and educators delve into the problems of our deteriorating environment. Paul Ehrlich, William Vogt, Barry Commoner, and William and Paul Paddock are among those who realistically and theoretically stimulate, here, an awareness of man's destiny in a polluted world. Naturalists dominate part 2: Konrad Lorenz, John Muir, and Rachel Carson, to name only three. Their viewpoint contrasts with that of part 1: their expert observation of the natural world, free from the influence of man, provides the reader with the beauty and, often, the mystery of the interrelationships of animals, plants, and protists. But although each division of this book is exceptionally worthy of its objective, no transition between parts is provided.

Like so many recent environmental paperbacks, Johnson's anthology leaves a sobering emptiness as to significant solutions. Still, the book can be recommended to high-school students and college freshmen who are embarking on the study of ecology.

Robert D. Simpson
Douglas MacArthur High School
Saginaw, Mich.

Genetics

THE ORIGINS OF THEORETICAL POPULATION GENETICS, by William B. Provine. 1971. University of Chicago Press, Chicago. 212 p. $7.75.

The notion of the scientist as the objective man, questing only after truth as it manifests itself by means of controlled experiment and painstaking observation, is fully exposed as myth in this book, which places the contrasting emergent theories of evolution and population genetics in a context of emotionalism and jealousy that impeded real intellectual progress in the field for decades.

This is a fascinating account of how ideas evolve from murky beginnings and then, at least partly because of the momentum of someone's personal commitment, achieve such status that they are defended as dogma instead of being investigated as propositions.

The conflict between the Mendelians and the biometricians was rooted in the latter's idea that evolution proceeded by natural selection acting on small, continuous variations, as opposed to the Mendelian view of discontinuous evolution. Each view had, among its champions, giants in the field of biology. This struggle pitted Huxley and Galton against Darwin, and their respective followers contended fruitlessly until the lengthy and brilliant studies of Haldane, Fisher, and Wright, whose insights revealed that the chasm between the contrasting theories was essentially imaginary. Their studies convincingly demonstrated that each school had sound and crucial ideas that could comfortably dovetail into a coherent theory of evolution and a firm foundation for population genetics.

The mood of this book is controversy, which was manifest at scientific meetings, in the literature, in letters both public and private, and in various personal interactions. And not all of this controversy was purely scientific: there was, for example, the plea by Darbishire to Bateson not to expose the incorrectness of the former's published work because of the anticipated repercussions this would have on his developing career. There also are several curious examples of men entering the scientific jousts in fields in which they were peculiarly unqualified; neither Bateson nor Castle, for instance, was competent to deal with certain biometric tools in a convincing way, and when they made the attempt their scientific reputations suffered accordingly.

Now, of course, we know much more about genetics. Refined biochemical techniques enable us to consider population genetics in the light of protein polymorphism and neutral mutation. Perhaps it is because we have come so far that Provine's lively account of the early history of the field proves to be so fascinating.

Richard A. Levin
Oberlin (Ohio) College

GENETICS: A SURVEY OF THE PRINCIPLES OF HEREDITY, by A. M. Winchester. 4th ed., 1972. Houghton Mifflin Co., Boston. 581 p. $11.95.

This textbook of genetics is written for the undergraduate with a limited background in biology and with a major interest in human heredity. The concepts of traditional Mendelian genetics are treated logically, and are clearly and simply stated. The illustrations are well chosen to hold the interest of the general student.

The section on human blood groups is particularly good. It has been expanded from the previous edition to include the less-frequent blood antigens and the plasma proteins: haptoglobins, transferrins, and immunoglobulins. The explanation of Rh blood-group inheritance is quite clear.

The author mentions DNA in chapter 1, but not until chapter 17 does he give the evidence for DNA as the genetic material, and not until chapter 18 does he present the Watson-Crick model for the structure of DNA. The section on the genetic control of protein synthesis is much expanded from the third edition.

For the women's libbers, let me quote from page 432: "Another Frenchman, Pierre Curie, and his wife Marie, isolated radium from uranium ore and demonstrated the value of radium in treating cancer." This attitude is not characteristic of the book as a whole.

This edition of the Winchester textbook has a more attractive format than the previous editions. Though I do not agree with the author's choice of arrangement of the material, the basic concepts of general genetics are interestingly presented. The book gives an adequate introduction to the study of genetics.

Margaret L. Watson
Simpson College
Indianola, Iowa

THE SCIENCE OF GENETICS, by George W. Burns. 2nd ed., 1972. Macmillan Co., New York. 477 p. $9.95.

The first edition of this genetics textbook appeared in 1969—only three years ago. Rapid progress in the science of genetics plus the acceptance of the book as a superior instructional tool have necessitated a new edition. This book is intended for undergraduates who have had college biology courses. It is competitive with Gardner's *Principles of Genetics* and Levine's *Biology of the Gene* but does not provide the advanced encyclopedic treatment found in Strickberger's *Genetics* nor the sophisticated presentation found in Srb, Owen, and Edgar's *General Genetics*.

Burns's book is readable, well organized, and well illustrated. It presents a chronologic account of genetics, beginning with Mendelism, the cytologic bases of transmission genetics, and the basic principles of classical genetics. Later chapters are devoted to the genetic material, protein synthesis, the genetic code, molecular structure of the gene, and regulation of gene action. Although some aspects of molecular genetics might have been introduced earlier, the organization of the book is generally good and its length is suitable for the usual one-quarter or one-semester course. Appropriate problems are provided at the end of each chapter and answers to all problems are found in an appendix. Other useful appendices include one dealing with life cycles of organisms frequently used in genetic research and one containing the structural formulas of biologically important amino acids.

Burns's chapters on molecular genetics have been largely rewritten from the previous edition, and I was impressed by his lucid and up-to-date account of this subject. In his introductory chapters on Mendelism, Burns uses traits in *Coleus* to illustrate the basic laws of heredity; this is a wel-