glaring and intolerable environmental ills resulting from industrialization and growth. Oddly enough, the same is true, though with variations, in the Soviet Union, a political system that has always touted the virtues of a rationally planned economy yet in which a dozen years ago the word conservation was scarcely considered appropriate to the official lexicon. As Goldman points out, there are now plenty of laws on the books in the Soviet Union dealing with the environment but the existence of these laws has tended to delude Soviet policy makers. (We must assume, for want of first-hand information, that U.S. policy makers do not so delude themselves.) Some Soviet authorities, he believes, have been lulled into thinking that the mere passage of highly desirable laws is all that is necessary to induce compliance and bring the difficulties under control. There are, indeed, violations in the Soviet Union and the laws are only weakly enforced. Since the laws have not worked, the Soviet regime has simply passed more laws. Goldman concludes—and this conclusion may come as a shocker to those Americans who insist that the solution lies in an exercise of power at the center—that the very concentration of power in the hands of the Moscow regime has been a major factor in the development of Soviet environmental problems. Not only does this reviewer agree, but he would go further and suggest that the tempos of Soviet industrialization, which were established with the five- and seven-year plans, together with the expansionist agricultural policies have compounded the difficulties. In any case, it is hard to say flatly whether the Soviet Union is better off or worse off than the United States in its attempts to resolve the environmental problems that have arisen.

Goldman's study is a first-class synthesis. Pryde's is more classic in organization and more detailed. After a survey of the conservation movement in Russia from Tsarist times to the revolution, Pryde provides in a systematic way a well-documented account of the problems that have arisen in the use of soil resources, fisheries and wildlife, timber and mineral resources, and water. His discussion of the *zapovedniki* (nature preserves) is useful. His concluding chapters, dealing with environmental quality, the question of population growth, and prospects for the future, raise questions that need to be treated at greater length. His conclusion that the Soviet experience provides no panaceas for the universally encountered problems related to natural resource development and conservation will come as no surprise to the Soviet Russia watcher.

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Actuopaleontology

Ecology and Palaeoecology of Marine Environments. WILHELM SCHÄFER. Translated from the German edition (1962) by Irmgard Oertel. G. Y. Craig, Ed. University of Chicago Press, Chicago, 1972. xiv, 568 pp. + plates. $25.

This book, easily the best of its kind, is a real contribution to shallow-water marine paleontology and biology. The book was originally published as *Aktuo-Paläontologie nach Studien in der Nordsee,* and the English title is something of a misnomer. But the contents of the book are nonetheless striking and valuable, and this English version brings to the forefront a classic work that heretofore could be appreciated properly only by readers fluent in German. The breadth and significance of its coverage had been sadly overlooked by hosts of American students, teachers, and researchers.

The present version is not only a translation but also a new edition; the original text and illustrations have been revised slightly, and several references have been added. Focus remains mainly upon the North Sea, but a wealth of examples and conclusions given here apply equally to other seas and to the fossil record. The writing is clear and credible, and the illustrations are tremendous.

In essence, the book is a practitioner's synthesis of 45 years of work by numerous marine biologists and geologists at Wilhelmshaven, Germany. The marine institute there, a part of Senckenbergische Naturforschende Gesellschaft, is a venerable pioneer in many aspects of marine science, as illustrated aptly by this volume.

Schäfer has written more for geologists than for biologists, but marine biologists will benefit substantially from the abundant data on animal distributions, habitat adaptations, functional morphology, behavior, and various other aspects of autecology. Sections on synecology are more conspicuously paleontologic in application but are nonetheless valuable.

The ecology of present-day organisms is of fundamental importance in paleoecological interpretations, of course, but equally valuable is this book's unusually broad coverage of taphonomy—the study of the death, disintegration, burial, and potential preservation of organisms as fossils. This aspect of marine research has in general been sorely neglected, but the evaluation of taphonomic processes is in fact prerequisite to the unraveling of ancient animal-habitat relationships represented in the fossil record.

Also unique is the book's extensive treatment of ichnology—the study of tracks, trails, burrows, borings, and other signs of activity by animals. Such traces were once considered mostly as academic curiosities; but more recent work—notably the present volume—shows that both biologists and paleontologists may learn a great deal about animal adaptations through studying these traces. In addition, such traces may constitute the only fossil record of numerous soft-bodied invertebrates, and the requisite animal activities are important as sedimentologic agents.

In short, I highly commend this book to anyone interested in shallow-water benthic ecology, paleoecology, and sedimentology, or in the reconstruction of ancient depositional environments. Indeed, one now wonders how we ever did without it.

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Induction of Immune Response

Immunogenicity. FELIX BOREK, Ed. North-Holland, Amsterdam, and Elsevier, New York, 1972. xxii, 584 pp., illus. $37.50. Frontiers of Biology, vol. 25.

This book is intended to discuss the various factors that can determine and affect immunogenicity. The function of antigen is broadly conceived, and the book not only enumerates the chemicophysical requirements for immunogenicity but also deals with the role of the dose, route of administration, and adjuvants in the initiation of and the determination of the type of immune response. With respect to the host, the immunocompetent system is discussed in terms of the effect on its functioning of such factors as the genetic makeup