by a Britisher, and a few years later the Petersburg Rocket Institute was founded. Thousands of rockets were produced here for troops in the Caucasus. They were widely used in the Russian-Turkish War of 1828–1829, and later in the Balkans.

By midcentury, refinements in fuse design were evident. K. I. Konstantinov laid the groundwork for internal ballistics, empirical knowledge of powder formulations developed, and hydraulic presses capable of 40 tons had been built in France for the new Nikolaev Rocket Plant near Kiev. By the early 1900's, large rocket flares were being produced in quantity, and various wing and tubular stabilized rocket shapes had been tested. Large numbers of rocket flares were manufactured during World War I, although artillery had supplanted bombardment rockets in accuracy and range.

The author concludes with a summary of the history of Russian rocketry, and 16 detailed appendices complete the text. A bibliography and a name index are included.

The care with which Sokol'skii treats historical facts is evident. Statements such as "Until the middle of the 1840's Russian rocket engineering developed very slowly and the poor quality of rockets impeded their widespread use" are refreshingly candid. Russian weights and measures (*pud, sagene, verst,* and the like) are translated into pounds and yards whenever used.

The printing on the whole is clear, although in the review copy there are a few pages where the ink has run through the thin paper. Illustrations are crisp. The price of the book is most reasonable. A better title, however, might have been "A History of Russian Rocketry to 1918."

Highly recommended for students of history of technology, military ordnance, and Russian history and for all rocket engineers interested in learning how rockets were made in the time of their great-great-grandfathers.

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Land near Water

River Plains and Sea Coasts. RICHARD J. RUSSELL. University of California Press, Berkeley, 1967. viii + 173 pp., illus. $8.75. Hitchcock Lectures, Berkeley, 1965.

This short book does not pretend to be a highly technical presentation; it is, rather, a simply and clearly written autobiographical account of the author's important contributions to geomorphology. Russell's research was directed to streams and alluvial morphology before 1956; since then he has been investigating seacoasts and beach processes.

The first half of the book is a lucid survey of the vast accomplishment of Russell, Fisk, and the Mississippi River group. These workers presented a most important challenge to the Davisian system and freed geomorphology from a too intensive preoccupation with erosion to the exclusion of deposition. Their work is certainly now an established part of geomorphology, and their conclusions, especially those dealing with the interaction of a stream with its own alluvium, have been successfully extended to many other streams. With a single unimportant exception, no reference is cited from publications later than 1960, for Russell had by that time become interested in coasts. It is a pity that he has not attempted to combine the important recent work on rivers with his own broad experiences; the results would have been welcome.

The second half of the book, dealing with coastal morphology, beach processes, and problems peculiar to tropical islands, is based on Russell's studies since 1956. The summary here given by Russell is particularly valuable, for the publications are scattered and the studies not generally as widely known as those on rivers. Again Russell's approach was to treat deposition and erosion as halves of a single picture, and he gives a particularly clear account of the many dangers of too naive interpretations of the "evidence" of various Quaternary stands of sea level.

Certainly not all of Russell's conclusions have won wide acceptance, but his contributions to geomorphology are enduring. His obvious love of fieldwork and the excitement of discovery are clearly revealed here; they are contagious. In an assigned reading list for a modern undergraduate course in geomorphology (physical geography) this small book may well be among the most valuable entries.

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Quaternary Ecosystems

Quaternary Paleoecology. Vol. 7 of the Proceedings of the 7th Congress of the International Association for Quaternary Research, Aug.–Sept. 1965. E. J. CUSHING and H. E. WRIGHT, JR., Eds. Yale University Press, New Haven, Conn., 1967. viii + 433 pp., illus. $15.

A new look in paleoecology is exemplified by the varied contributions in this book. Imaginative studies of modern processes and modern biogeography are the basis for some illuminating interpretations of Quaternary biota and climate presented by contributors to the volume. Though much of the material relates to pollen chronology and stratigraphy, the topics are diverse, and include paleoecology based on evidence from mollusks, insects, seeds and other plant megafossils, C^{14}-C^{12} ratios in waters of different *p*H, chemical composition of clamshells, and modern pollen rain.

In geographic coverage the work focuses largely on eastern North America, but includes a smattering of studies from different parts of the world. Especially delightful reading is a discussion by Tsukada and Deevey of cyclicity in Mayan agricultural practices and the Mayan economy partly inferred from the pollen record. An example of their light touch is seen in their photograph of modern and ancient "pictographs" along the shores of Lake Guija, El Salvador (see opposite page).

Cushing and Wright's book might well have been entitled "Studies in Late Quaternary Ecology" because of the emphasis on the latter part of the Ice Age and because it is not strictly a book on principles of Ice Age ecology. However, some general papers on methodology and an intriguingly written introduction by the editors add a broad slant to the volume.

The book gives evidence that a good deal of face-lifting is going on in the methodology and ecological interpretation of the Quaternary plant record. An important tool long used in Europe, namely seed stratigraphy in close combination with pollen stratigraphy, is being tried with interesting results in the United States. Aside from the important matter of providing a basis for identifying species, which is not usually possible from pollen grains, plant megafossils such as seeds offer some assurance that the source plant was growing locally—a thing not certain from airborne pollen grains.

American workers are trying new