agencies are stressing improvements in resource development, health, and education; these and other improvements will inevitably result in a modification of concepts and values.

The book would have been strengthened by inclusion of a more functional index and by a wider selection of references from the rich literature pertaining to the monsoon lands of Asia.

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Scientific Adventure

The Year of the Gorilla. George B. Schaller. University of Chicago Press, Chicago, Ill., 1964. xii + 260 pp. Illus. $5.95.

Many readers of *Science* are already familiar with Schaller's *The Mountain Gorilla: Ecology and Behavior* [University of Chicago Press, 1963; reviewed in *Science* **140**, 1081 (1963)], the most thorough monograph on a nonhuman primate species ever published. The earlier monograph was, in the author's words, "a compendium of facts, discussing the apes as subjects to be studied, not as acquaintances whose activities my wife and I discussed at the end of each day; I had no space to reveal the enjoyment I derived from roaming across grassy plains and uninhabited forests and climbing mist-shrouded mountains."

In *The Year of the Gorilla* Schaller has added this personal narrative. It is the story of the mountain gorilla expedition, from its inception at the University of Wisconsin and the initial survey of gorilla habitats with John T. Emlen, through the author's subsequent year-long study of gorilla behavior, to the hectic days of Congolese independence which terminated the study. It includes a summary of the daily life of the gorillas, vivid descriptions of the forests, encounters with natives and European settlers, and the joys of housekeeping in a windblown cabin at 10,000 feet. There are no new facts about the mountain gorilla except a brief epilogue, added after a revisit to the study area in August 1963, 3 years after the original study. Schaller had no difficulty recognizing individuals from the previous study, and he noted a decrease in size in group 7 from 21 gorillas to 17 and in group 8 from 21 to 10.

The book's awesome and beautiful setting, in the Virunga Volcanoes, south of the legendary Mountains of the Moon, is a land inhabited by pygmoid Batwa and tall Watutsi herdsmen; the periphery of this area has often been described, but few Europeans have explored the interior of its dense forests or climbed the peaks of its still active volcanoes. This book recalls an earlier style, when Africa was new and explorers felt compelled to describe everything they encountered. Schaller includes geology, the tribal histories, life in African villages, and the flora and fauna of the region, but it is his genius to have preserved the descriptive candor of 19th-century observers without succumbing to local mythology and hearsay. His probing eyes seem to miss nothing, and his descriptions have the ring of 20th-century, scientific accuracy. A sensitive and articulate observer, he is at his best when he is describing the forest itself, the timeless, paleozoic atmosphere of riotous foliage, tree ferns, and scurrying roaches. Whether the author is tracking gorillas, slipping past elephant herds on narrow jungle paths, avoiding poachers' deadfalls, or routing Watutsi invaders, this is an exciting book. Although Schaller feels that this is "not an adventure book," few readers will be able to agree.

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Science Study Series

Waves and Beaches. The dynamics of the ocean surface. Willard Bascom. Doubleday, Garden City, N.Y., 1964. xii + 268 pp. Illus. Paper, $1.45.

Willard Bascom's *Waves and Beaches* is a welcome addition to the fine Science Study Series of books for "students and the general public."

The series aims to present, in an interesting way, the most "stirring" and fundamental topics of science and to tell the "fascinating" stories of great discoverers or discoveries.

Conveying accurately what Warren Weaver has called the "interest, importance, beauty, and excitement of science" requires judgment and skill, or it can degenerate into popularization. Bascom combines the two prerequisites: A deep and close knowledge of the sea and its borders and a clear and lively style. The result is a book that completely lives up to the advanced billing of the series.

Willard Bascom's eminence in oceanography guarantees the scientific accuracy of the book. He is president of Ocean Science and Engineering, Inc., and he was executive secretary of the Maritime Research Advisory Committee of the National Academy of Science and director of the Mohole project. His book, *A Hole in the Bottom of the Sea*, is an account of the Mohole project through the preliminary drilling off the coast of Southern California.

In the process of giving the reader a good deal of basic knowledge about the interaction of the sea and coast, Bascom tells some marvelous stories about tsunamis, storms, and the awesome power of waves. There is an account of how the U.S.S. *Ramapo* measured 112-foot waves in the Pacific and horrifying pictures of a longshoreman a few seconds before his death in the seismic wave that struck Hilo, Hawaii, on 1 April 1946.

Bascom discusses some of the lure of the sea. Oil does calm sea waves, especially if it is fish oil; there is no such thing as an undertow that pull swimmers under the surface. ("There are currents flowing in the surf zone and there are other water motions which may cause trouble for swimmers, but they hardly fit the description.") Groins occasionally do stop the erosion of beaches. (See the case of the Minnie Hunter at Cape Henlopen in 1883.)

One of the hopes of the editors of the Science Study Series is that the reader will be encouraged to make his own investigations of natural phenomena. Bascom's book certainly provides the motivation.

In an epilogue, Bascom says that many of the pleasantest hours of his life have been spent in watching waves and examining beaches—walking and meditating, photographing, digging, and surveying.

> There is satisfaction in being aware enough of the waves and beaches to detect the special softness of a new layer of sand underfoot, that means the berm is building or to observe a slight change in the appearance of the breakers and think, "There must be a new storm in the Gulf of Alaska."

The inner peace that comes with the quiet contemplation of a beach on a still, calm morning, or the feeling of exhilaration that comes from riding a great wave in a small boat, is more reward than most men ever know.

To Bascom every wave is a "masterpiece of originality. It will ever be so," he says. "Go and see."'

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A Popular Synthesis

Geography of Japan. Ryuziro Isida. Kokusai Bunka Shinkokai, Tokyo, Japan, 1961 (available from East West Center Press, Honolulu). xiv + 124 pp. Illus. Paper, $3.50.

The aim of modern geography is to interpret the spatial characteristics of phenomena on the earth's surface. Three questions—*Where* are things located, *why* are they so located, and what is the *significance* of spatial patterns—are central to geography's wide range of investigations. This volume is intended as such a general introductory interpretation of Japan. Although considerable work has been done on Japan by American geographers since World War II, most of these researchers do not handle with ease the great mass of geographic literature being turned out in the Japanese language. Actually Japanese geographers are writing relatively more on the geography of Japan than American geographers are on the geography of the United States. Some indications of the range of literature can be seen by examining the very brief list of references at the end of the volume.

The idea of a Japanese geographer bringing together in English a geographic interpretation of Japan, which has been synthesized from writings in the Japanese language, is a good one. At this point, however, the old question always has to be raised, "at what kind of an audience should the volume be aimed"? Clearly this book is written for the intelligent layman who is interested in the world about him. It will not be very illuminating to the professional geographer who specializes in Japan or to others who have a substantial competence in Japanese problems. The volume is a general description of Japan's geography; it leaves out the great wealth of material relative to local or regional problems and interpretations. A brief introduction to the ties of history and geography is followed by sections on the physical setting, population and settlement, resources and industries, and socioeconomic reality.

Maps are generously used, but most of them are of extremely small scale and are not too well reproduced. Some 50 excellent photographs will contribute much to the ordinary reader's impression of Japan.

The book is one of nine volumes published to date by Kokusai Bunka Shinkokai (The Society for International Cultural Relations) and aimed at presenting the life and culture of Japan to the general reader. Other volumes in the series deal with anthropology, history, religion, folklore, and similar topics.

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British Atlas

The Atlas of Britain and Northern Ireland. Planned and directed by D. P. Bickmore and M. A. Shaw. Oxford University Press, New York, 1963. xii + 222 pp. Maps. $100.

For many countries the possession of a national atlas has become a mark of prestige, and nearly 50 countries have begun the publication of such a work, using public money as well as national resources to do so. *The Atlas of Britain*, in its size, in the scope of its coverage, and in the clarity and at times the beauty of its presentation, puts other such atlases to shame. Yet, in the strict sense, it is not a national atlas. It has been prepared privately and is published commercially.

It presents, as it claims, "a cross-section through the middle of the twentieth century." It illustrates, in 200 pages of maps, not merely the unchanging physical basis of Britain's national life, the geology and relief, the climate, the nature of the surrounding seas, the discharge of the rivers, the soils, and the natural vegetation, but also the distribution of population and of age groups in the population, recent changes in these age groups, and mortality rates, as well as the distribution of agricultural production, industry, and transportation facilities.

Most of the maps are on a scale of 1 : 2,000,000, so that the area of Great Britain and Northern Ireland can be shown on a single page of the atlas. In addition, the relief, vegetation, and solid and drift geology of the whole area are shown on a series of maps (on a scale of 1:1,000,000) that are well laid out for purposes of comparison. The maps themselves represent not merely compilations based on published statistical data, for their construction has involved extensive research by a highly qualified team of experts. The presentation of this data is ingenious to a degree; one could quote many examples of the authors' skill and ingenuity, but the map which shows the size and the number of agricultural holdings, with its subtle use of color to portray very complex data, is a masterpiece that must add a new perspective to any discussion of Britain's agriculture. Should you want to know where winter vegetables are grown or which soils yield potatoes most heavily, or should you desire to test the hypotheses about the contrasting agriculture of western and eastern Britain, the data is all here.

The maps of mineral production have rarely, if ever, been equalled in an atlas. Each coalfield is shown, and every coal mine, with its average depth and thickness of seam; the output per manshift is marked. Geological sections allow the reader, or the browser, to relate these data to the history of the coalfields and to draw his own conclusions about the problems faced by the older and shallower mines. My only regret is that those who compiled this map did not differentiate between mines recently opened by the National Coal Board and the older mines that owe their origin to private enterprise.

The same kind of detail characterizes the maps of all other branches of industry—the production and distribution of coal gas and electric power, of fertilizers and agricultural machinery, of carpet and hosiery manufacture and those of printing, sugar refining, and quarrying, as well as of the more obvious branches of industry which one expects to be illustrated in a work such as this. Most are printed in a wide and pleasing range of color on base maps that show relief by means of a faint hill-shading and built-up areas by a pale gray shading. The resulting maps upset many of the stereotypes, current in textbooks, regarding the distribution of industrial activity.