summaries of experiments, reported in recent years,

Tyree's chapter, "The Steady State Thermodynamics of Translocation in Plants," concentrates the essentials of a biophysical description of transport into 23 pages. This chapter is difficult to read.

The book's primary utility is for plant anatomists and plant physiologists. If a reader does not wish a broad treatment of plant development and is content to leave problems in flower induction and initiation, leaf development, and wound responses to another book, then this book is excellent.

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Cell Biology

THE LIVING CELL, by Oliver Gillie. 1971. Funk & Wagnalls, New York. 216 p. $6.95.

The author presents an excellent account of the origin of cells from simple inorganic molecules. Recent experimental data are evoked in support of the heterotroph hypothesis. Gillie uses the theory of evolution as a unifying theme. The processes of mitosis and meiosis are clearly described. The fact that the breeding of unrelated organisms is advantageous is pointed out. Gillie describes hereditary defects and the possibility of their repair by genetic "surgery." The role of enzymes is described very efficiently. This book is well illustrated, in color and black-and-white.

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Environmental Biology

WILDLIFE AND PLANTS OF THE CASCADES, by Charles Yocom and Vinson Brown. 1971. Naturegraph Publishers, Healdsburg, Calif. 286 p. $3.95 softback, $5.95 hardback.

This eighth volume of the "American Wildlife Region" series will be welcomed by all naturalists interested in the higher mountains of southern British Columbia, Washington, Oregon, and northern California. It is a valuable contribution to the inadequate supply of readily available regional guides.

The book has three parts. The first describes the 29 plant communities that the authors recognize in the region. Along with each description is a photograph of the community and a list of typical plants (by common name). Two accompanying elevation profile diagrams show the distribution of plant-community zones. These are interesting for a comparison of changes in elevation of the zones, but a vegetation map giving more accurate geographic locations would have been more useful. Also of use would have been a listing of actual locations of one or more typical examples of each community type.

The second part of the book is given over to descriptions of 288 plant species, which, the authors say, "will include at least 90% of the individual plants seen. . . ." This may be a bit ambitious, but it is quite likely that this section does describe and illustrate most of the readily noticeable plants of the region. The drawings vary in quality of detail. Those of the detail and arrangement of conifer needles, for instance, are poor. The species are arranged into seven broad categories: freshwater plants, coniferous trees, etc. Beyond this simple key, identification is a matter of comparison with the drawings. The section on how to identify plants gives a brief description of leaf and flower characteristics used in identification. Species are listed by common name, with the scientific name following; the latter does not show the authority—something the more serious naturalist might find desirable.

Descriptions of the mammals, birds, reptiles, amphibians, and fish make up the third part of this work. Within each class the grouping is by order. The section on birds takes up more than half of this part and is probably the most useful. Again, common names are used, with the scientific name following. Most descriptions have accompanying drawings of good quality. This section has eight color-plates; four illustrate some 25 species of birds and would be useful in identification, but the four plates of large mammals add little to the usefulness or quality of the book.

Although the book has general appeal, it could best be used in the field by persons familiar with the language of biology. A knowledge of the region and its plants and animals also would help in knowing what to look for and where to turn. Most important: the relatively small size and comprehensive coverage make this a handy book to take along on hiking trips into the Cascades.

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NATURE STRIKES BACK, by John G. Navarra. 1971. Natural History Press, Garden City, N.Y. 224 p. $5.95.

Natural disasters bring death and destruction to thousands of people each year. We refer fondly to Mother Earth, but "when you think of the forces of nature that reach out to engulf man," Navarra says, "you begin to visualize him hanging precariously to an earth that is anything but motherly." The book describes earthquakes, volcanoes, thunderstorms, hurricanes and typhoons, floods, landslides, avalanches, heat waves, snowstorms, and tsunamis. Navarra, a professor of geoscience, sees little possibility of controlling these forces of nature. "What we can do is learn to predict when they will be unleashed. Then we must learn how to warn people and how to help them to protect themselves," he says. To that end he cites historical records of natural disasters and discusses their frequencies, their causes, the places where they are most likely to recur, and the safety rules to be followed in the event of their recurrence. The 86 photographs from various parts of the world add interest to the presentation; however, diagrams would have been helpful in clarifying the patterns of prevailing winds, which often have a part in the formation of hurricanes and typhoons.

Of special interest to ecologists is the suggestion that cleaning up the debris on the forest floor could dramatically reduce the destruction caused by the 13,000 lightning-caused forest fires in the United States each year. But the same debris that spreads forest fires is described as being an integral part of the forest ecosystem. It seems that an attempt to avert one kind of disaster could create disaster of another kind.

This book will find interested readers in biology and earth-science classes in upper-elementary schools and in junior and senior schools.

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THE WORLD'S POPULATION, ed. by Quentin H. Stanford. 1972. Oxford University Press, New York. 346 p. $5.95 (softback).

Stanford says that his purpose is "to offer an organized approach to a complex and often very controversial subject." The book is indeed well organized: facts are presented logically and clearly, without hysteria or scare tactics.

The book is a collection of articles on the population problem. The first series of articles presents basic information on population and demographic studies; the second series examines the historical roots of the population dilemma; and the final series discusses possible solutions. Each chapter is prefaced with a brief explanation by the editor that puts the chapter in perspective and proposes thought-provoking questions. The book also contains many tables, charts, and graphs, which enhance and clarify the subject matter.

I strongly recommend *The World's Population* as an excellent source of material on the population problem. It can be used quite effectively in discussions in senior high schools and colleges.

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