dustrial worker. But it is a small elite that can enjoy leisure in his special sense. And a little further research would show him that there are still those, but no longer an aristocratic elite at the top, who are able to pursue, without regard for the clock, the cultivation of the mind and the enjoyments of a cultured life. Besides, in his indictment of modern civilization, de Grazia tends to look with overkindly eyes on the civilizations of the past. Did workers of the Middle Ages, mostly serfs and peasants bound to the land, really enjoy as free time the equivalent of every second day in the year? What evidence has he that in ancient Rome "health and hygiene were as good as they've ever been"? Did a "rude ruddy industrialism glow" in America before it was choked by the tyranny of the clock? There are numbers of such statements that make tendentious comparisons between the present and early times. Furthermore, de Grazia should correct his reference to the UNESCO Declaration of Human Rights—it should, of course, be the U.N. Declaration.

In spite of the needless invidiousness of some of de Grazia's comparisons, his work conveys a very important message. The illusory character of much of the "free time" we attribute to modern developments is admirably revealed and so are the causes of it—the clutter of transportation, the bottlenecks of industry, the plethora of paperwork, the cost of mobility, and the like. On the other hand, the reluctance to give the man of ingenuity and intellectual resource, the deeper if slower thinker, a freer rein to work things out his own way and at his own pace, call urgently for the wisdom of our planners and policy-makers. Moreover, the human need to find enjoyment in what one does, in one's work and in one's play, distinct from excitation and hurry and artificial stimulation, the need to reflect more and to contemplate more, and the need for the kind of education that would encourage rather than dull this need, cannot be overestimated.

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Biology Study Series

The Physiology of Flowering. W. S. Hillman. Holt, Rinehart, and Winston, New York, 1962. xii + 164 pp. Illus. $4.50.

The author of this little volume, W. S. Hillman, is a competent investigator who has made significant contributions to the field, and in this book he reviews many experiments and discusses numerous concepts within a limited space. He has quite successfully organized a very useful summary of significant information on the physiology of flowering, particularly with reference to the processes that affect the initiation and early development of flowers.

After an introductory chapter on the morphology and measurement of flowering, the author presents a condensed statement of the phenomenon of photoperiodism, ranging from definitions and examples of the phenomenon to summaries on the role of leaves, the light requirements, the role of the dark period, and the modifying effects of temperature. He then analyzes the nature of photoperiodism with respect to the effect of the quality of the light at the time of the low-intensity light break during the dark period, and spends a considerable amount of space on circadian rhythms and on light-dark cycles of different length. There are other chapters on temperature and flowering, on "floral hormones," and on the chemical control of flowering, as well as sections on other phenomena related to floral initiation.

Hillman stresses a concept with which some might disagree—that flowering is not a qualitative change, that meristematic regions from which floral or vegetative organs develop are merely extremes of a continuum.

The author has intentionally included conflicting evidence and differing concepts in a given area, because he believes that this type of presentation will give the student a truer picture of the field. Since this is done within the limited space dictated by specifications for the series in which this volume is published, the presentation is extremely condensed, with no tabular or graphical data. The only illustrations are photographs of flowering plants. One wonders if the student who has limited contact with original papers in this field may not find this difficult reading.

This book will probably be most useful to graduate students and their teachers, although it was written for a wider audience. The graduate student will find it a balanced, comprehensive survey of the state of knowledge in this area of biology, which should be more useful to him than symposia volumes or annual reviews. The numerous references to significant papers and reviews will enable the student to use this book as a sound introduction to one of the most fascinating aspects of plant physiology. The book is well indexed and quite free of typographical errors.

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Improving Intelligence

Intelligence and Experience. J. McV. Hunt. Ronald, New York, 1961. ix + 416 pp. $8.

Almost anyone who has considered the matter would agree that the variability men show in linguistic, mathematical, mechanical, musical, or any other kind of ability is in part attributable to differences that are primarily genetically determined and in part to differences in experience, education, and training. When instead of ability in one of these areas one writes *intelligence*, the situation gets more confused, for *intelligence* has sometimes been used as a description and sometimes as an explanation of performance. Moreover, there has been great disagreement over how much of the variance of intelligence should be attributed to hereditary differences and how much to environmental differences. There has never been any satisfactory answer to this question. Most children get both their genes and their early training from the same parents; statistical analyses for one population have not agreed with statistical analyses for a different population; the appropriateness of the methods of analysis has been questioned; attempts to devise intelligence tests free from the influence of cultural differences have never been satisfactory; and so the argument has gone on.

Hunt takes the position that the hereditary contribution has usually been overemphasized. His thorough analysis of the evidence leads him to