BOOK REVIEWS

Tyranny of the Clock: The Need To Enjoy What One Does Cannot Be Overestimated

Sebastian de Grazia has written a remarkable book. Of Time, Work, and Leisure (Twentieth Century Fund, New York, 1962. 570 pp. \$6) has style and vigor, is entirely free from the jargon of the social scientist and the abstruseness of the philosopher, although the author can lay claim to both titles. The research on which it is based is summed in a useful statistical appendix. The text itself is a wide-ranging commentary, full of pithy characterizations and neat epigrams. The result is a thoughtful, stimulating, and provoking work. The Twentieth Century Fund is to be congratulated on its sponsorship of a study so remote from the usual range of foundation activities.

The thesis of the book is based on a distinction between work time, free time, and leisure. Work time is time on the job, typically the work demanded for making a living or running a household. Free time is time away from the job, or more strictly, the time not required for necessity or obligation of any kind, time in which a man is free to do what he pleases. Leisure is the "state of being in which activity is pursued for its own sake or as its own end." Of these three, as they are defined here, work time is the only one that does not raise serious problems of demarcation or of definition. De Grazia engages in quite elaborate discussions on this theme.

One of his major points is that, in spite of shorter work days and shorter work weeks, in spite of mechanization and labor-saving devices, the actual amount of free time that the modern man enjoys is not more, but is, in fact, less than in the better old days. Since 1850 the average work week has been reduced by about 31 hours. Add to this the "fringe benefits" of paid vacations, holidays, and sick leave, which he calculates amount to an additional 2 to $2\frac{1}{2}$ hours per week. We might also add the pensioned period of retirement that considerable numbers enjoy.

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It looks altogether like an imposing liberation-but no! "Never before have so many Americans had so little time to call their own." We have to allow a correction first if we consider only fulltime employment, since some are parttime workers. Then we have to allow for the number of employed who engage in "moonlighting." Subtract the unrecorded time used in going to and from work under modern conditions. Subtract also the time people spend on home repairs and other do-it-yourself activities, and before you are through you will find the free-time gain has evaporated.

Time-Consuming Gadgets

It is even worse for the housekeeping mother. Numbers of them are employed outside the home, on a part-time basis, while the children are still young and thus have altogether around a 60-hour workweek, unless the man takes over some of the burden by adding housework to his load. Everything seems to conspire against the possession of genuine free time. There is also the waste of time caused by the geographical mobility so characteristic of Americans. And of course we cannot count as free time the time spent in sleeping, dressing, and eating or the time used for travel in paying visits, social duties, and so forth. Was it not better in olden times? In the Middle Ages the number of holidays and holy days, including the inviolable Sundays, was commonly, we are told, 167 days.

Nor can we take comfort in the fact that today we have so many laborsaving devices. The housewife uses an electric gadget to beat egg whites to make a soufflé, saving, say, $1\frac{1}{2}$ minutes. But what of the time it takes to make the electric beater? So the author goes into a dubious argument to prove that, in the end, by using the beater we lose rather than save net time. Or take refrigeration. Now you cannot have fresh vegetables, except perhaps at luxury prices. But the author does not mention the fact that the housewife no longer has mouldy potatoes or mildewed fruit or smelly fish. Always he makes the loss exceed the gain.

Back of mechanization is the tyranny of the clock, which threatens to turn man into a machine. Life itself is routinized, robbed of amplitude and savor. Whatever free time we have left is unfree from the start. It is still clock time, "tethered by a longer rope." It is fragmented rather than whole. Men used to escape into a timeless world, a retreat; now one must go to other planets to find it-or else go mad! Incessant advertising bedevils us; reading serves for little anymore except as a bulletin board, and even that function is grossly reduced by radio and television.

If we consider leisure rather than mere free time, we find it has in effect disappeared. Leisure activity is activity that is good, apart from anything but the sheer enjoyment of it. De Grazia, however, seems to combine a psychological with an ethical definition. People may enjoy almost any kind of activity purely for its own sake, for the satisfaction of doing it. But we are told that it must be something worthy of pursuit; for our author, leisure exists in the free cultivation of the mind and, above all, in contemplation-the contemplation of beauty and the appreciation of the fine arts. Leisure was something men possessed in the time of Socrates. Plato, and Aristotle; it was to be found in the great days of Florence, but it is found no more.

Leisure and Democracy

De Grazia obviously has little use for modern civilization. There is throughout a nostalgic feeling that looks back to an age when men did not believe in progress, when the well-to-do were not trammelled in affairs but lived lives of ampler leisure. He admits toward the end that "democracy and leisure are not compatible." To find true leisure one must go back to the times of monarchies and aristocracies. This admission leads him, however, into inconsistency. The slaves of the clocks, the serfs of mechanization are, he finds, the people generally-the housewife, the business man, the industrial 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 itthe 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