ture is a set of control mechanisms for governing behavior and that man is precisely the animal most desperately dependent on such extragenetic control mechanisms for ordering his behavior (pp. 106–7). Geertz reasons that the cultural context constitutes the mechanism by which the breadth and indeterminateness of man's inherent capacities are reduced to the narrowness and specificity of his actual accomplishments. Thus we all begin with the natural equipment to live a thousand kinds of life but end, in the end, having lived only one. Here we have an insight into a possible new way of understanding free will, determinism, and the nature of man. This insight seems not to have been appreciated by Platt or by the other contributors to the lecture series: Willard Libby discusses "Man's place in the physical universe." George Wald considers "Determinacy, individuality, and the problem of free will" and oddly concludes that we are wholly determined but we have free will because we are unique and unpredictable. Derek de Solla Price examines "The science of science," and Roger W. Sperry dissects "Mind, brain, and humanist values," dismissing indeterminancy as unpredictable caprice, unaware of the middle ground between freedom and determinism and therefore unable to encompass feedback responses to an occasional randomly initiated event. James Redfield gives a fascinating analysis of the parallels between the Greek city-states and our culture in "The sense of crisis."

The diversity of views on determinism and free will and the resulting indecision on the nature of man and of the world are not dispelled by a third contribution in this area, Lord Russell Brain's **Science and Man** (Elsevier, New York, 1966. 109 pp., illus. $3.75), a collection of four lectures, entitled "Science and behavior," "Perception, a trialogue," "The status of mind," and "Science and antiscience," the last of which has been published in *Science* [**148**, 192 (1965)].

These books on the nature of man are all worth reading more than once and form good companion volumes to *Man Adapting* by Dubos and *Mankind Evolving* by Dobzhansky, reviewed in these pages in 1966 and 1962 by G. G. Simpson. If anything can be said about what society must do to survive it is not explicit in any of these books, but all are highly relevant. Perhaps the most urgent need is to keep the situation open-ended and to encourage scientists like John R. Platt to continue to be involved persons.

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Plant Biochemistry

In recent years the field of plant biochemistry has lacked a comprehensive treatise covering the major areas of research within the rather broad scope of the discipline. This gap is nicely filled by the recent publication of **Plant Biochemistry** (Academic Press, New York, 1966. 1072 pp., illus. $19), edited by James Bonner and J. E. Varner. The avowed purpose of the volume is to provide detailed information for both the advanced student and the research worker interested in plants, and in general this aim is amply fulfilled.

The book is divided into five main sections, covering subcellular structure and function, basic metabolism, specialized aspects of plant metabolism, control, and autotrophic nutrition. Subcellular Structure and Function includes a chapter on plant mitochondria and electron transport by W. D. Bonner, Jr., and a nicely illustrated chapter on chloroplasts by R. B. Park, as well as chapters on ribosomes (J. Bonner), the nucleus (J. Bonner), enzymes (Varner), cell membranes (G. A. Thompson, Jr.), and the cell wall (P. Albersheim). In addition to a bibliography of technical papers relevant to each topic, each chapter contains a listing of more general references for the benefit of readers unfamiliar with the necessary background information.

Basic Metabolism covers respiratory metabolism, protein, lipid, and carbohydrate metabolism, the biosynthesis of amino acids and coenzymes, and mineral nutrition. More specialized topics, including plant acids, the biosynthesis of alkaloids, isoprenoids, and porphyrins, and the chemistry of tannins, coumarins, flavonoids, steroids, and so on, are treated in the third section. The section on control includes a discussion of seed development and germination (Varner), fruit ripening (M. Spencer), cell extension (Lockhart), and development (Bonner). This section might well have included a chapter on the biochemistry and related physiology of phytochrome, as well as a more detailed discussion of the relationship of plant growth hormones to RNA metabolism, although some of the latter material is treated in various parts of the book. Also, there is no single chapter which discusses the biochemistry of growth substances. Autotrophic Metabolism includes two informative chapters on the path of carbon in photosynthesis (Bassham) and the path of energy in photosynthesis (Kok), and a discussion of nitrogen metabolism (Burris).

In summary, the book provides a useful compilation of information from many areas of plant biochemistry and should be a welcome addition to the bookshelf of students and research workers in the field.

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Timberlands in Russia

Although the Soviet Union possesses much greater forested area than any other country and has long been prominent in the international timber trade, it has hitherto been difficult for interested English-speaking readers to lay their hands on a detailed survey of the Soviet forests. The translation of V. P. Tseplyaev's comprehensive work **The Forests of the U.S.S.R.** (A. Gourevitch, Transl. Israel Program for Scientific Translations, Jerusalem, 1965; Davey, New York, 1966. 527 pp., illus., maps. $19), which originally appeared in the Soviet Union in 1961, should therefore be a great boon to many specialists. This applies not only to students of forestry and related subjects, but also to those of Russia in general, since the forests have had a profound effect on the country's development from the beginning.

The book has a short introductory section on the history of forest surveys, general classifications, and the "natural zones," and even briefer concluding sections on the wood-using industries and world forest resources. However, nearly four-fifths of it is taken up by a detailed regional inventory of the forests. This is organized by general species (pine, spruce, and so forth) and, within these categories, by