Book Reviews

Agricultural Policy, Politics, and the Public. (*Annals* of the American Academy of Political and Social Science, vol. 330, September 1960) Charles M. Hardin, Ed. American Academy of Political and Social Science, Philadelphia, Pa., 1960. 188 pp. Paper, $2; cloth, $3.

This symposium is a noteworthy attempt to define the present place and the potential contributions of American agriculture in today's crucial situation. Charles M. Hardin has assembled a notable group of experts to deal with many facets of the problem. Highly critical, on the whole, of our current agricultural policy, the contributors do not, as so often happens, stop with critical analysis but go on to propose deep-seated reforms. It is these recommendations, clustering around a noble central theme, that give the book its special value.

The theme might perhaps be expressed in some such propositions as these:

1) In today's world "Science has given international peace the new meaning of *a condition essential for the continuance of mankind*" (from the constitution of the Society for International Development).

2) Thus international affairs have now become the foremost concern of our own and of every other nation.

3) In international affairs the prime present need is to ease intolerable stresses in an unbalanced world by enabling countries bypassed in the scientific-technological revolution to start catching up.

4) In the bypassed countries food is still the paramount need and farming still the basic pursuit; therefore agriculture is a key element in the dynamics of economic and social advance.

5) The obligation and the opportunity of the United States—and specifically of agriculture in the United States—in this process of international development is consonant in magnitude and urgency with our (hitherto) acknowledged world leadership.

6) By failing in that opportunity and obligation we risk loss of leadership to eager, confident, powerful rivals.

7) A thorough overhauling of our agricultural policy is essential if we are to succeed; and the overhauling must include the domestic as well as the international aspects, since economic weakness at home spells political weakness abroad.

This is the kind of background that inspires Hardin's frank announcement in the book's opening paragraph: "This volume is aimed at contributing to a sweeping change in the focus of American agricultural policy. . . . It hopes to influence the agenda of farm policy conferences and to command the attention of policymakers in Congress, the Executive, and farm organizations." The immediate target of this hope, it may be surmised, is whatever new administration comes to power in Washington.

It would be egregious and unjust to try to compress in a brief review the gist of 21 diverse articles (and a bibliography) contributed by 22 people and covering foreign trade; the disposal of surpluses; the export of capital, manpower, and skills; the relation of agriculture to economic growth; the overhauling of farm policy; special commodity problems; Canadian *vis-a-vis* U.S. policy; better use of human resources in agriculture; the roles of Congress and the Executive; farm organizations and farm opinion; and the Agricultural Extension Service. But some of the challenging theses that stud the volume can be indicated.

Arguing that "For the past decade American farm policies have tended to give the farmer the wrong signals" about foreign markets, Gale Johnson sketches a program of gradual but far-reaching changes and adjustments that might be carried out over a 5-year period without entailing economic distress.

Willard Cochrane outlines a seven-point, long-term plan designed to make exclusive (and extensive) use of surpluses to finance economic development.

F. F. Hill makes a case for conserving scarce scientific manpower by "concentrating United States assistance in each major region on a relatively limited number of key countries," and within each country on a limited number of key areas, institutions, and training programs. He also suggests making 5- or 10-year federal grants to colleges and universities in the United States to finance the employment of staffs for "overseas extension work."

Charles Kellogg says that huge increases in agricultural production are possible over large areas, but that in such cases there is commonly "no practical midway system between a low and a high level of inputs and outputs." "Only a drastic change is practical," and this presents highly complex and difficult problems.

In a penetrating analysis of overspecialization in our land-grant colleges and universities, Roland Renne argues for "fewer and broader curricula" with much more emphasis on "the basic principles and theories essential to develop the objective reasoning necessary for effective adaptation to varying situations and requirements in our modern society."

To prevent excessive production, G. E. Brandow would replace price control with "supply control," thus, "routing income to agriculture through the market rather than through the federal budget."

In an incisive analysis of the cotton situation, M. K. Horne, Jr., expresses the conviction that the "price-leadership" policy of the United States in the world market probably has "served as an enormous stimulus to the progress of less-developed nations," though "few kind words are ever said for it in international councils."

To alleviate the oversupply of labor in agriculture James Maddox proposes vigorous federal-state programs emphasizing nonfarm pursuits, employment assistance, and combinations of off-farm and farm work in special areas.

Lauren Soth advocates rerouting much more of our "excess agricultural resources"—including excess scientific services—to overseas development as the "least-cost" method of helping poor countries and ourselves simultaneously; but he concludes that this would require "massive changes in foreign and farm policies," which, at present, farm leaders and pressure groups would strongly oppose.

Carrying this theme a step further, Ross Talbot sees the 1960's as "the decade of decision" for which our farm policies are totally inadequate; and he proposes a White House conference on farm policy as a "new and dynamic framework" for dramatizing the problem, reconciling ideological and personality differences among the major farm organizations, and "working out a rational farm policy in terms of our national interest."

Finally, Wallace Ogg turns the spotlight on the Extension Service as an organization that must, because it is the one that can, assume responsibility for bringing about profound nationwide changes in the attitudes of college and university leaders, farmers, and nonfarm people; these changes are required to integrate foreign and domestic policy. "If the Extension Service does not accept this new role it may not be possible to have the kind of foreign agricultural policy that the world situation demands from the United States."

Symposia are *ipso facto* not uniform in quality, but as a whole this one reaches a high level of conception and execution.

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Saturday Science. Andrew Bluemle, Ed. Dutton, New York, 1960. 333 pp. Illus. $5.95.

Accelerators. Machines of modern physics. Robert R. Wilson and Raphael Littauer. Doubleday, New York, 1960 (available to secondary-school students and teachers through Wesleyan University Press, Columbus 16, Ohio). 187 pp. Illus. Paper, $0.95.

The current ferment in public education is illustrated by the publication of these books. They represent two of the many recent programs aimed at improving high-school science education. In addition, their availability to the general public illustrates the way in which many of these programs are growing in scope, influencing other levels of formal and informal education.

Saturday Science is a compilation of articles by scientists from the Westinghouse Research Laboratories. In recent years, Westinghouse has invited many outstanding high-school seniors to attend a series of Saturday morning lectures by staff scientists who discuss their own research fields. The students are considered to be members of the Westinghouse Science Honors Institute.

A group of the Saturday morning lectures have been rewritten for this book. Although the origin sometimes shows, for on many occasions the reader misses the exciting demonstrations which must have illustrated the sessions, the translation into printed form succeeds well.

The book is divided into two parts. The first (9 chapters), called "Some principles," has subjects ranging from radioactivity to the chemistry of solids to propulsion. The second part, entitled "Some techniques," considers mathematical and experimental methods for scientific study.

The book jacket announces that a new series of educational television programs, "Lab. 30," is being based in part on *Saturday Science*. The television series should benefit from the scientific competence of the contributors to the book.

By now, most scientists have heard of the exciting, controversial work of the Physical Science Study Committee. Their reworking of the high-school physics course has encompassed a new textbook, laboratory materials, films, and a series of monographs on special topics in physics. Their ideas are filtering upwards and downwards in our educational system, influencing course-content and presentation in colleges and universities and in the lower grades of public schools.

Characteristically, the monographs in the "Science Study Series" are intended for the general public as well as for students. Almost 100 volumes are planned, all on topics within or relevant to physics, and all written by experts. [For reviews of published volumes see *Science* **130**, 616 (1959) and **131**, 219 (1960)]. *Accelerators* is a fine example of the excellence of the series. Wilson is the director of the Laboratory of Nuclear Studies at Cornell University, and Littauer is one of his colleagues. Both have had extensive experience in the design of accelerators and in their use in significant experiments.

The book begins with a discussion of why physicists need high-energy accelerators, and it proceeds to give a historical account of their development, always clarifying the physical principles employed. It discusses the Cockroft-Walton machine, the Van de Graaff accelerator, the other linear accelerators, and the many circular machines. The limitations of the various accelerators are indicated along with the techniques which overcome some of the limitations. The book concludes with a discussion of acceleration on a grander scale—that which produces cosmic rays.

Accelerators is well-written and should prove understandable to anyone with a command of only elementary physics. By having the reader concentrate in detail on a single topic, the book should present him with additional perspective on the broad range of physical principles relevant to a penetrating study in a special field.

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Pasteur and Modern Science. René Dubos. Doubleday, New York, 1960 (available to secondary-school students and teachers through Wesleyan University Press, Columbus 16, Ohio). 189 pp. Illus. $0.95.

This book is a tribute to the man as well as a critical study of the life and accomplishments of one of the most celebrated and dedicated scientists of all time, Louis Pasteur. The author has met with a large measure of success in his endeavor to explain the influence of Pasteur's contributions upon the development of scientific progress in his own time and its continuing influence upon modern research.

René Dubos discusses how Pasteur moved forward in a logical sequence from his studies of crystals to his research on fermentation. The unchallenged evidence of his experiments overthrew the theory of spontaneous generation—a triumph that gave rise to modern microbiology and bacteriology. The author then elaborates on pasteurization, and he follows this with a detailed, fresh approach to Pasteur's theories on contagious diseases. These theories helped to expand researches in this field to include what Dubos beautifully and accurately calls "the domestication of microbial life." Dubos emphasizes Pasteur's awareness of the possibilities of controlling and destroying infective microorganisms not only by acting directly on them in their modified environment in the host body