ters to ecology. This introduction of ecological concepts early seems to me an excellent idea. She might have caught student interest more easily by starting with this, leaving matter, energy, and cellular mysteries for some later part of the book. The third section of the book, called "The internal environment of the body," is a rather lengthy review of organ systems, with primary attention to vertebrates (including man). Development and heredity are then disposed of in two short chapters. The fifth and longest section of the book is called "Evolution and animals," but it is really a straightforward review of the invertebrate phyla and the vertebrate classes. Evolution itself is covered in a short terminal chapter. The book is liberally and often very aptly illustrated, sometimes with striking pictures from little-known sources.

How one would choose between this book and a dozen or so others in selecting a textbook for a course, I do not know. This has almost everything: the phyletic approach, the functional approach, the ecologic approach, along with occasional bows to human physiology and anatomy, and some nice pictures.

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Krebiozen: the Great Cancer Mystery. George D. Stoddard. Beacon, Boston, 1955. ix + 282 pp. $3.50.

Often the violence of controversies over the treatment of a disease has been proportional to ignorance or to lack of knowledge that was either nonexistent, or withheld, or both. When tensions are further stretched by elements in a disease of overwhelming importance to suffering mankind and by factors of prestige and money intermingled with idealism and scientific purposes, when the situation is obfuscated by secretiveness and suspicions of quackery and tautened by institutional, governmental, political, and religious interests, there is likely to be an explosion. Since cancer research contains all of these elements, explosive controversies over the treatment of cancer have occurred in the past. The most recent and severe is the controversy over the claims for krebiozen as an agent for the treatment of malignant tumors. This controversy is the subject of this book by George D. Stoddard, former president of the University of Illinois.

The chief "mystery" in the story is the incompletely disclosed nature of krebiozen. The material is said to have been obtained by Stevan Durovic, in costly experiments in Argentina, by extraction from the blood of horses that he had treated in some manner to stimulate the reticulo-endothelial system. Only a small quantity of the material (about 2 grams) was obtained, and this was dissolved in a large quantity of mineral oil and put up in many thousands of ampoules. Apparently, none of the "powder" has been made available for independent analysis and testing. Hence krebiozen is in the class of secret remedies.

In 1949 or 1950, Durovic interested Andrew C. Ivey in his claims for the value of krebiozen for the treatment of cancer. In 1951, Ivy presented a report on it at a semipublic meeting at the Drake Hotel in Chicago. Thereafter, clamor arose and a series of events started that resulted in conflicts involving the faculty and trustees of the University of Illinois, in arousing criticism and opposition of the American Medical Association and the Chicago Medical Society, and in precipitating an investigation by the legislature of the State of Illinois. The conflict had a bearing upon the forced resignation of Stoddard as president of the University of Illinois and the deprival of Ivy of his position as one of the university's vice-presidents.

The story is told in detail in the first 139 pages of the Stoddard volume. The second part (pp. 140–274) is an appendix of reproductions of documents and excerpts from documents in the case. There is a good index at the end. The body of the book is well organized and written in a lively dramatic style.

This book about a controversy involving academic freedom aroused a controversy over the freedom of the press. An unsuccessful attempt was made by the opposing side to have the book suppressed by legal injunction in Massachusetts prior to its publication.

While much of this story is as tragic as it is interesting, the main question whether or not krebiozen is of any value in the treatment of cancer is still the important consideration. Others not directly connected with Durovic and Ivy, notably the Cole Committee, have found that the claims made for krebiozen were not warranted. In the opinion of the Cole Committee, krebiozen has no curative value in the treatment of cancer. The committee suggested that further studies of its possible ameliorating effects might be considered, but that it would be futile and inconclusive to conduct further investigations unless the chemical nature and properties are determined and disclosed under conditions by which the financial and scientific interests of the originators will be protected.

For the testing of proposed treatments of cancer, there are some excellent plans and places in the United States. In these, full disclosure of information is shared by investigators and referees. On the other hand, obstacles, almost insuperable, interpose themselves when the remedy is a secret. In spite of both of these considerations there is a need to strengthen and broaden this testing system. This, however, is part of the larger problem of making arrangements for the clinical testing of new drugs.

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Forestry and Related Research in North America. Frank H. Kaufert and William H. Cummings. Society of American Foresters, Washington, D.C., 1955. viii + 280 pp. $5.

This book presents a concise and well-written report on a reexamination of the entire structure of forestry research programs in the United States, Canada, and Mexico. A reappraisal at this time would determine whether the progress being made in research is adequate in the light of the importance of forest resources in the economic and social welfare of the nation. This report, which covers 15 subject-matter sections, is unquestionably the most comprehensive treatment of a national program for forestry research ever published. It not only deals with timber resources, their products and utilization, but also includes the aspects of wildlife, range, watershed, and recreation that have their basis in forest lands. The purpose of the report is well summarized in the statement: "Research has played a major role in the development and utilization of the forestry and related resources of the nation. It can be an even greater determining factor in the future if developed along the lines suggested in this report."

Of particular interest is the excellent history of the development of forestry research. The first trained scientist to study the forests of North America was the French botanist André Michaux, who in 1785 was sent here by the French Government. There are numerous tables that show various classifications of expenditures by the major research fields. Of greatest interest to all specialists will be the 15 subject-matter sections that make up two-thirds of the book. The survey data for each subject section —that is, genetics, soils, silviculture, ecology, and forest management—are clearly and concisely summarized as follows: (i) development and accomplishments, (ii) expenditures and personnel, (iii) problems requiring research, and (iv) recommendations. These data furnished the basis for the chapters on "The national program summarized" and "Recommendations and goals for the next quarter-century."

Brief mention should be made of some of the salient points brought out by the survey. On the basis of expenditures, more than two-thirds of the research was in the fields of forest products and utilization. Forestry schools play a major role in training research personnel and in the conduct of basic research. There is need for fellowships of $3000 to $4000 per year to attract qualified men for graduate training in sciences basic to statistics, silviculture, and other specialties. Agencies with adequate financing were conducting more quality research than those with limited funds. A serious shortage of qualified and well-trained personnel is critical in most fields, especially genetics, soils, and and wood technology. Cooperation in research dealing with forestry and related fields is as yet poorly developed. There appeared to be no lack of publication outlets for short papers, but a serious problem exists with long papers. Most scientific journals have considerable backlogs of manuscripts. Without reservations, I believe that this book will offer to all foresters, as well as to specialists in related fields, a rich background in the research that will be needed for the future development of one of the nation's greatest resources.

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The History of the Telescope. Henry C. King. Sky Publishing, Cambridge, Mass.; Griffin, London, 1955. xvi + 456 pp. Illus. $12.50.

A number of books, both popular and advanced, have included sections on the history of the telescope. However, H. C. King's book is the first major work devoted exclusively to its history. In 19 chapters averaging more than 20 pages each, King covers astronomical observations from pretelescopic times to the latest developments in optical and radio-telescopes. The book is profusely illustrated with drawings and photographs. Detailed references at the end of each chapter (for example, 90 at the end of Chapter I, 42 at the end of Chapter II) make the work invaluable for any professional astronomer or serious amateur.

Chapter I is a discussion of observational astronomy prior to the invention of the telescope, which culminated in the monumental work of Tycho Brahe. Chapter II is a discussion of the history of optics. Here King tries to evaluate the evidence regarding the identity of the true inventor of the telescope. Chapter III describes Galileo's construction of the first astronomical telescope and the work he did with it. Chapter IV and the following chapters describe the inventions and technologic improvements that have led to the large telescopes of the present day. Attention is paid to the specialized optical needs of different branches of observational astronomy. The book concludes with a 13-page index.

Everyone who is interested in the history of the telescope is indebted to King for writing such a fine book and to the Sky Publishing Corporation for producing it in such attractive form.

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Problems and Control of Air Pollution. Proceedings of the First International Congress on Air Pollution held in New York City, 1–2 March 1955 under the sponsorship of the Committee on Air-Pollution Controls of the American Society of Mechanical Engineers. Frederick S. Mallette, Ed. Reinhold, New York; Chapman & Hall, London, 1955. vi + 272 pp. Illus. $7.50.

In recent years, the interest of scientific and technical groups in air pollution has increased rapidly, resulting in an epidemic of symposia at which the expanding activities in this field are reported and discussed. The proceedings of many of these meetings have been published as pamphlets, as special sections of technical magazines, and occasionally in book form, as in the present instance. F. S. Mallette has assembled the 25 papers presented at the First International Congress on Air Pollution, held at the American Society of Mechanical Engineers 75th anniversary meeting in New York, 1–2 March 1955.

The book was therefore written by 30 authors in addition to the editor, since several of the papers were written by two or more persons. Each paper comprises a chapter in the book. Four of the authors are from England, two from Canada, two from the Netherlands, and one each from Portugal, Italy, and France, and the rest from the United States. The group consists of distinguished experts.

The first two chapters deal with the history of the subject, with public opinion, and with the role of industrial management. The next five chapters were grouped together by the editor because they all stress the gaps in existing knowledge regarding air pollution and the need for futher research. However, these five chapters are very diverse, dealing with biological, geographic, engineering, meteorological, and health aspects of air pollution.

The next four chapters describe current developments, again in diverse fashion, from diesel exhaust and incinerators to optical measurements of aerosol particle size, and an atmospheric survey of Sarnia, Ontario.

The next eight chapters are less diversified, for they all relate to sulfur, sulfur dioxide, and hydrogen sulfide. Three discuss power plant stack gases, one deals with oil refineries, one with the steel industry, one with coke ovens, and one with the chemical industry. The initial chapter in this group is concerned simply with the world supply of sulfur, with air pollution as an incidental consideration.

The final five chapters relate to experience in air pollution abroad, in Holland, Portugal, Italy, and France. The first chapter in this group connects the the efficiency of a Cyclone with the size of its outlet pipe. The third chapter describes forest damage by air pollutants from a smelter and from oil engine exhaust. The other three chapters are more general in scope.

The book should be a valuable and convenient reference for the large and growing group interested in this subject.

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Chemistry and Chemical Technology of Cotton. Kyle Ward, Jr., Ed. Interscience, New York–London, 1955. xix + 782 pp. Illus. $20.

Textile technologists have been exceptionally fortunate in the past 2 years in having had made available to them three quite exceptional surveys of the properties of textile fibers. The first of these, *Textile Fibers, Yarns & Fabrics,* by Ernest R. Kaswell, presented a broad review of fiber properties in relation to the functional characteristics of textiles with special reference to wool. The second, *Harris' Handbook of Textile Fibers,* is more a compendium of data from various sources on fiber and fabric properties without special orientation toward particular materials. The third, which has now become available, is, in a sense, a corresponding volume on cotton fibers and fabrics.

A comparative study of the three works shows interesting relationships as well as contrasts. The Kaswell book places much emphasis on the physical and mechanical properties of textile fibers. The new book by Kyle Ward on cotton, in contrast, is focused to a large extent on the chemistry of cotton. Perhaps this is the more important approach to the study of cotton, and readers will certainly be grateful to Ward for the comprehensiveness with which he has surveyed the field and brought together