

# *Science Education* IN CONSUMER BUYING

BY GEORGE L. BUSH

This volume points out the need for greater consumer education and emphasizes the opportunity and responsibility of science teachers in meeting this need. It describes sources of information for teachers and pupils and offers abundant concrete illustrative material. The author suggests changes in the nature of much of the consumer education which is now offered and directs attention to broader generalizations and problems for solution.

SCIENCE  
EDUCATION  
IN  
CONSUMER  
BUYING

By  
*George L. Bush*  
\$2.35

BUREAU OF  
PUBLICATIONS  
TEACHERS  
COLLEGE  
COLUMBIA  
UNIVERSITY

THE SCIENCE IN MODERN LIVING SERIES  
*Basic Science Material for Use in Modern Education*

---

BUREAU OF EDUCATIONAL RESEARCH IN SCIENCE

SAMUEL RALPH POWERS, *Administrative Officer*

AUTHORS OF THE SERIES

*Edna W. Bailey*

PROFESSOR OF EDUCATION, UNIVERSITY OF CALIFORNIA

*George L. Bush*

TEACHER OF SCIENCE  
EAST TECHNICAL HIGH SCHOOL, CLEVELAND, OHIO

*F. L. Fitzpatrick*

PROFESSOR OF NATURAL SCIENCES  
TEACHERS COLLEGE, COLUMBIA UNIVERSITY

*C. C. Furnas*

ASSOCIATE PROFESSOR OF CHEMICAL ENGINEERING  
YALE UNIVERSITY

*H. B. Glass*

ASSISTANT PROFESSOR OF BIOLOGY  
GOUCHER COLLEGE

*Anita D. Laton*

RESEARCH ASSOCIATE, BUREAU OF EDUCATIONAL RESEARCH  
IN SCIENCE, TEACHERS COLLEGE, COLUMBIA UNIVERSITY

*Paul B. Sears*

PROFESSOR OF BOTANY, OBERLIN COLLEGE

Science Education  
in  
Consumer Buying

GEORGE L. BUSH, Ed.D.

BUREAU OF PUBLICATIONS  
Teachers College, Columbia University  
NEW YORK . 1941

**COPYRIGHT 1941**  
**BY**  
**TEACHERS COLLEGE**  
**COLUMBIA UNIVERSITY**

**MANUFACTURED IN THE UNITED STATES OF AMERICA**  
**BY THE HADDON CRAFTSMEN, INC., CAMDEN, N. J.**

## FOREWORD

AS TECHNOLOGICAL advances bring us an ever increasing variety of appurtenances for living, so the problems of intelligent consumership mount, and it seems altogether fitting that science classes on the high school level and college courses for high school teachers should be used as a framework for supplying correct information about products and their manufacturers and the opportunity to investigate their claims. Any number of products may serve the same purpose, but it is the wise consumer who is able to discriminate between them on the basis of which will meet his needs and his budget most adequately.

Much has been written about the value received for money spent, and many agencies have sprung up to assist the public in its buying. In this field, as in any other which has attracted rather sudden widespread interest, there has arisen rivalry among the several agencies and individuals working to advance consumer education. It is the task of the teacher to guide his students in a careful survey of the consumer organizations and literature as well as of the myriad products that daily lure the citizen, be he child or adult.

This book, the fourth of the source books in "The Science in Modern Living Series," is designed to help teachers and laymen set up certain standards for judging the worth and utility of their purchases. Among the consumer items considered are food, clothing, building materials, drugs, cosmetics, automobiles, and electric appliances. The first third of the book is concerned with an appraisal of several previous publications on consumer buying. Their inconsistencies and prejudices are pointed out with clarity and fairness.

The author, George L. Bush, as a high school teacher of many years' experience in a large city, has made a thorough study of

consumer problems from the standpoint of one who is striving to serve more effectively the young people in present-day society and to make them aware of the issues they face and must face as future leaders of that society. His recommendations relating to the place of consumer education in the secondary school curriculum are made from the perspective of both careful study and practical experience.

This book has been prepared primarily for science teachers and contains a number of suggestions for activities to be used in teaching. Because of the universal appeal of its subject matter, it will be of interest and value to the thinking layman as well as to the student and teacher.

SAMUEL RALPH POWERS

## PREFACE

THIS book is addressed primarily to present and prospective teachers of natural science. Secondly, it is hoped that it will be of value to all interested in consumer education and of general interest to those engaged in educational work of any nature.

There are four major aims of this book:

1. It is intended to be persuasive in encouraging science teachers to give serious thought to the urgent need for consumer education and to the part that science education may have in meeting this need.

2. It is intended to be helpful to science teachers who accept the responsibility offered by this consumer education need. Therefore it suggests suitable sources of information for teachers and students and proposes extensive illustrative subject materials which may be emphasized in consumer education work.

3. It is intended to be corrective with respect to the nature of much of the consumer education now being offered. Therefore it directs attention toward broader generalizations and problems for solution as opposed to the present tendency to consider as the ends of consumer education the learning of detailed facts dealing with the purchase of particular commodities.

4. It is intended to be hopeful rather than pessimistic as it reviews progress recently made and looks forward to the possible accomplishments of science in consumer education.

There is deliberate omission of any organized consideration of the history and growth of the consumer movement in general. Such omission is considered desirable because the history of the movement is only slightly pertinent to the major aims just outlined, and because these pertinent historical features are discussed where they appear necessary. Further, it so happens that science education in the past has had little to do with consumer buying, and



there is therefore practically no history which pertains to the work of science education in consumer buying.

No attempt is made in this book to describe in detail those features of consumer education which are essentially economic and social. Such features have already been successfully developed by others whose interests and education are primarily economic and social. However, these phases of consumer education are not avoided, since they must be included in some measure because of their close associations with the work of science in consumer education.

No claim is made that science can do more for consumer education than all or any one of the other fields connected with consumer work, and there is no intention of giving the impression that improved consumer buying is the only aim of science education. It is distinctly the purpose of this book, however, to support the contention that improved consumer buying is one of the major aims and one of the major responsibilities which science education must accept.

It is a privilege to acknowledge with grateful appreciation the suggestions made by Dr. Samuel Ralph Powers, Dr. Harold F. Clark, and Dr. Herbert J. Arnold, all of Teachers College, Columbia University. Appreciation is also due Miss Charlotte V. Meeting, of the Bureau of Educational Research in Science, for her editorial assistance.

G. L. B.

## CONTENTS

<i>Foreword</i> BY SAMUEL RALPH POWERS	v
I. <i>The Need for Greater Consumer Education</i>	i
II. <i>Books as Sources of Consumer Information: A Critical Appraisal</i>	25
III. <i>Federal Government Agencies as Sources of Consumer Information: A Critical Appraisal</i>	48
IV. <i>Private Testing and Rating Agencies as Sources of Consumer Information: A Critical Appraisal</i>	63
V. <i>Professional Associations and Related Sources of Consumer Information: A Critical Appraisal</i>	82
VI. <i>Illustrative Consumer Education Subject Material for Natural Science Courses: Foods and Health</i>	97
VII. <i>Illustrative Consumer Education Subject Material for Natural Science Courses: Clothing</i>	118
VIII. <i>Illustrative Consumer Education Subject Material for Natural Science Courses: Purchase and Rent of Shelter</i>	135
IX. <i>Illustrative Consumer Education Subject Material for Natural Science Courses: A Variety of Suggestions</i>	157
X. <i>Problems Arising from Curricular Emphasis on Consumer Education</i>	171

<b>XI. <i>Broader Horizons</i></b>	<b>190</b>
<b><i>Annotated Bibliography</i></b>	<b>208</b>
<b><i>Index</i></b>	<b>225</b>

## ANNOTATED BIBLIOGRAPHY

THIS bibliography lists the books, agencies, and periodicals to which reference is made in this book. In addition, it includes readings which are likely to be most helpful for the science teacher who wishes to work in consumer education. Although books supply much excellent material, it is believed that current periodicals and government reports offer essential and more valuable readings.

Aside from these features, this bibliography is in no way a complete one on consumer education.

### BOOKS

Agan, Tessie. *The House*. J. B. Lippincott Co., Philadelphia, 1939.

An unusually complete new book designed as a text for a college course. Much of the material will supply suggestions for consumer education work in science at all school age levels.

Bauer, Catherine. *Modern Housing*. Houghton Mifflin Co., Boston, 1934.

Deals with housing throughout the world. Does not contain direct consumer education but helps supply general understanding of needs and possible accomplishments in housing.

Bennett, H. *More for Your Money*. Chemical Publishing Co., New York, 1937.

Food, clothing, fabrics and textile goods, cosmetics and toilet requisites, articles for domestic use, furniture. Well worth attention from the standpoint of buying advice as well as because of numerous tests for composition and performance of consumer goods. Many ideas to use or elaborate. Largely but not entirely limited to examinations of a scientific nature.

Brindze, Ruth. *How to Spend Money*. The Vanguard Press, New York, 1935.

A great many detailed facts to help one in buying a wide range of commodities. Emphasizes textiles and ready-made clothing; medicines and bathroom supplies; table service; light; food, canned, pack-

aged, and fresh. Helpful for one who is concerned only with this phase of consumer education.

Brindze, Ruth. *Johnny, Get Your Money's Worth*. The Vanguard Press, New York, 1938.

Written especially for children but contains much useful consumer material for high school students and older persons as well. Most science teachers and students will find this book extremely helpful.

Carpenter, Charles E. *Dollars and Sense*. Doubleday, Doran & Co., Garden City, N. Y., 1928.

Described in Chapter II.

Carver, T. N., Woolman, M. S., and McGowan, E. B. *Textile Problems for the Consumer*. The Macmillan Co., New York, 1935.

Considers textile problems from the standpoint of the economist, the textile specialist, and the textile teacher. Written especially for home economics use and also for the general consumer, but has much good material which can be adapted for use by the science teacher.

Chilson, Francis. *Modern Cosmetics*. The Drug and Cosmetic Industry, New York, 1934.

Gives a great many formulas and methods of manufacture for all sorts of face creams, dentifrices, shaving preparations, hair tonics, deodorants, astringents, depilatories, lipstick, manicure preparations, shampoos, powders. Presents the side of the manufacturer. However, occasional comments on dangers and on extreme advertising claims are particularly interesting, as for example, the following: "All sorts of claims are made for tonics intended to cure baldness, but none has ever been substantiated. When baldness is due to heredity or congenital causes, we may simply state that, as yet, it can neither be cured nor prevented. But, when the hair begins to fall out, due to improper care and lack of stimulation, we are on reasonably safe ground in saying that we can prevent further loss of hair." (p. 247) Notice especially the phrase "on reasonably safe ground in saying."

Clark, H. F. *An Introduction to Economic Problems*. The Macmillan Co., New York, 1936.

A clear, concise, and simple presentation of modern economic problems. Many teachers will find the viewpoint presented here pleasingly unique among books dealing with economics. Ideas which may be applied to science and consumer education are numerous.

Coles, Jessie V. *The Consumer-Buyer and the Market*. John Wiley & Sons, New York, 1938.

Up-to-date discussion of basic economic and social problems associated with consumer buying. Prepared for students on the college and university level. On the whole, the contents of the book cannot be considered to give much direct help to the consumer. However, it should be of great value to science teachers in helping them to broaden their own background for teaching in the consumer area. Discusses inadequacies of present buying guides. Aids in understanding problems and practices of business. Good material on descriptive and grade labels, quantity and quality standardization, brand names, advertising.

*Consumers' Bookshelf. A Bibliography of Publications on Commodity Buying and Other Consumer Problems*. Superintendent of Documents, Washington, D. C., December, 1937. Price, 15 cents.

An excellent annotated bibliography of free and low-cost publications of the Federal government, state extension services, universities and other nonprofit sources. No discoverable bias in this bibliography.

Dana, Margaret. *Behind the Label*. Little, Brown & Co., Boston, 1938.

Deals entirely with textiles and clothing. Interesting style. Excellent consumer education materials. Contains many details on actual buying but does not neglect major generalizations on consumer problems. An extremely valuable and usable book.

Davies, J. E. *Fundamentals of Housing Study*. Bureau of Publications, Teachers College, Columbia University, New York, 1938.

An extensive treatment which considers desirable housing standards, present conditions of housing in the United States, reasons for the unsatisfactory situation, and suggestions for improvement. Contains much useful background material, although not directly related to science education.

Edwards, Alice L. *Product Standards and Labeling for Consumers*. The Ronald Press Co., New York, 1940.

Points out that the effects of a large number of standards extend far beyond the given firm or industry adopting them. Contains much good material that can be secured only by considerable investigation in other books. Outlines past and present progress toward more extensive standards and labels. Describes organizations interested in greater standardization, work of government agencies. Considers labels only in connection with standardized articles.

Eskew, G. L. *Guinea Pigs and Bugbears*. Research Press, Chicago, 1938.

Described in Chapter II.

Foreman, Clark and Ross, Michael. *The Consumer Seeks a Way*. W. W. Norton & Co., New York, 1935.

Describes in an elementary, conversational manner the economic problems which are so serious in our lives today. Very worth while from the standpoint of economic background for consumer education in science.

Foster, W. T. *Doctors, Dollars and Disease*. Public Affairs Pamphlet No. 10. Public Affairs Committee, Inc., 8 West 40th Street, New York, 1940.

Considers costs, needs, and lack of medical and dental care; also possibilities for improvement.

Frederick, Christine. *Selling Mrs. Consumer*. The Business Bourse, New York, 1929.

Consumer buying from a business standpoint. Illustrative topics are: "The psychological method of establishing new food habits"; "Education in the effective use of the appliance." Chapter on obsolescence, style, and the American consumer. Shows a business view of consumers that is fairly characteristic.

Furnas, C. C. and Furnas, S. M. *Man, Bread and Destiny*. Reynal & Hitchcock, Inc., New York, 1937.

One of the essential books in connection with foods. Interestingly written and presenting many ideas to stimulate thought about food. Scientific in nature but popular in style.

Gordon, Elizabeth and Ducas, Dorothy. *More House for Your Money*. William Morrow & Co., New York, 1937.

Contains much excellent material from the consumer standpoint, but not primarily scientific. Although it discusses economic problems connected with buying or building a house, there is also much material which science teachers can use. For laymen; interestingly and simply written.

Gordon, L. J. *Economics for Consumers*. American Book Co., New York, 1939.

A college textbook which treats economics from the consumer, rather

than the producer, viewpoint. Contains much excellent and up-to-date material that will help in supplying needed economic background. Much good material on standards and labels.

Halbert, Blanche. *Better Homes Manual*. University of Chicago Press, Chicago, 1931.

Unusually complete. Although published several years ago, the contents are far beyond anything that has yet been reached in homes. Much material that is of direct scientific interest.

Harp, Henry. *The Education of the Consumer*. The Macmillan Co., New York, 1924.

A pioneer in the field of consumer education. The author states in the preface: "Since this study grew out of an attempt to make a curriculum for effective living, it is frankly intended to furnish a method and some working material for those who are engaged in constructing curricula." In spite of the fact that the book is somewhat old and is not written primarily for science educators, there are many valuable suggestions which can be made to apply to science education as it is today.

Harding, T. Swann. *The Joy of Ignorance*. William Godwin, New York, 1932.

Very interesting style. A pleasure to read. Science viewpoint, but presents many sides of consumer problems. Particularly emphasizes drugs and health remedies. Quite ironical. Much on advertising. Jokes and points out its own weaknesses. Also discussions of researches on coffee, tobacco, alcohol, exercising.

Harding, T. Swann. *The Popular Practice of Fraud*. Longmans, Green & Co., New York, 1935.

One of the essential books. An exceedingly interesting style. Emphasizes both sides of the problem but is distinctly on the side of the consumer. Criticizes the "hell-fire, scare the consumer out of his wits technic" which, as the book points out, is used both by advertisers of foods and medicines and by the publications of Kallet and Schlink. Very strongly recommended because it supplies so many usable facts to illustrate generalizations. Discusses general consumer problems from scientific and social viewpoints, is not quite so extreme as *100 Million Guinea Pigs*, but does not pull its punches in the least. Contains a wealth of material and will supply many ideas that can be used in teaching.



Hausrath, A. H. and Harms, J. H. *Consumer Science*. The Macmillan Co., New York, 1939.

An interesting title, but the contents of the book are disappointing. There is good consumer material on soap, lubricating oils, gasoline, automobile tires, fuels, insulation, refrigerators, and light. However, there is almost no consumer material on the more important subjects of foods, clothing, and housing. The major portion of the book is traditional science, the connection of which with consumer education is not made clear. A worthy attempt but not a great success at meeting consumer problems.

Hawes, Elizabeth. *Fashion Is Spinach*. Random House, New York, 1938.

This book has had great popular interest since its publication. Although it has no particular relation to science education, it should give any teacher interested in consumer buying a wealth of ideas about possible changes for the better in the clothing situation. Highly recommended both for the ideas and for its general interest.

*Housing America*. Editors of Fortune. Harcourt, Brace & Co., New York, 1932.

A business viewpoint of the housing situation, what it is, what made it that way, and the beginnings of improvement. Although this book was published in 1932 and there have been a few notable advances, conditions on the whole have not changed greatly.

Hoyt, Elizabeth E. *Consumption in Our Society*. McGraw-Hill Book Co., New York, 1938.

Economic in nature. Useful for general background. Considers basic factors which determine choice of consumer goods. Also treats the effects on consumers of modern machinery, advertising, standardization, consumer cooperatives, government service to consumers.

Kallet, Arthur and Schlink, F. J. *100 Million Guinea Pigs*. The Vanguard Press, New York, 1932.

Described in Chapter II.

Lamb, Ruth deForest. *American Chamber of Horrors*. Farrar & Rinehart, Inc., New York, 1936.

Although the material which composes other "exposure type" consumer books is often criticized for inaccuracies, this book has usually been free from such criticisms. It is one of the essential books to be read by those interested in consumer education dealing with foods

and health. Although it was written before the passage of the Food, Drug, and Cosmetic Act of 1938, much of its discussion of Federal laws and their shortcomings is still fitting. The extensive appendices are highly illuminating. One of the essential books.

McCollum, E. V., Orent-Kiles, Elsa, and Day, H. G. *The Newer Knowledge of Nutrition*. The Macmillan Co., New York, 1939.

Basic scientific information dealing with nutrition. Technical and quite complete. Chapters XXIV to XXVIII, inclusive, contain good material to assist in solving certain consumer problems as to the relation between candy and tooth decay.

Mann, G. C. *Bibliography on Consumer Education*. Harper & Brothers, New York, 1939.

Aside from the evident bias described in Chapter II of the present book, this bibliography is certain to be very helpful to anyone interested in consumer education.

Matthews, J. B. *Guinea Pigs No More*. Covici, Friede, New York, 1936.

Visualizes what a consumer society would be like. Contains many excellent suggestions and ideas for the development of such a society as an alternative to a "worker's state." The consumer's case against business gives 75 illustrative cases in which consumers have been "gyped" by business. In the appendix there is "An Enabling Act for a Department of the Consumer" by Oscar S. Cox, which contains many ideas about a Federal law for consumers. Very necessary reading. One will wish to see how many of these ideas fit with his own.

Morell, Peter. *Poisons, Potions, and Profits*. Knight Publications, New York, 1937.

Deals particularly with the numerous incorrect claims in radio advertising. Many different kinds of consumer goods are considered. In a chapter titled "Mulcting the Mother through the Child," there are presented indirect arguments for emphasizing consumer education in the schools. Suggestions for solution of the radio consumer problem are also given.

*National Conference of Social Work Proceedings for 1939*. Columbia University Press, New York, 1939.

Especially recommended as general reading in order to make clearer the social conditions related to science teaching of consumer education and to science teaching as a whole. Up-to-date *Proceedings* are recommended as they are issued.

*New and Non-Official Remedies.* American Medical Association, Chicago, 1939.

Contains listing and description of articles accepted by the Council on Pharmacy and Chemistry of the American Medical Association as of January 1 of the year of publication. Published yearly. Most recent copy is preferable. Extremely useful as a reference book. Usefulness will increase as statements of composition of proprietary remedies are given on the labels.

*Next Steps in Consumer Education.* Proceedings of a National Conference on Consumer Education Held at Stephens College, Columbia, Missouri, April 3, 4, and 5, 1939. Institute for Consumer Education, Stephens College, Columbia, Missouri, August, 1939.

Not directly related to the work of science education in consumer buying but the best single cross section picture of consumer education available at present. One of the essential readings.

Palmer, D. H. and Crooks, Laurence E. *Millions on Wheels.* The Vanguard Press, New York, 1938.

Has numerous suggestions dealing with the purchase of automobiles and accessories. Expresses a number of interesting ideas in regard to possible improvements in automobiles—improvements which could be made but which are not made.

Peet, L. J. and Sater, L. E. *Household Equipment.* John Wiley & Sons. New York, 1934.

Emphasizes detailed information about household equipment. Describes equipment but does not deal directly with consumer buying problems. Written from a home economics viewpoint for use as a college textbook.

Phillips, Velma. *Evidence of the Need of Education for Efficient Purchasing.* Bureau of Publications, Teachers College, Columbia University, New York, 1931.

An analytical study of consumer difficulties in choosing and buying clothing and home furnishings. Many examples show that needs exist even among businessmen and graduate students and professors in household arts. Helpful in forming consumer background for science teachers and in suggesting several of the usual consumer problems for investigation.

Pitkin, Walter B. *Let's Get What We Want!* Simon & Schuster, New York, 1935.

One of the essential books from the big business standpoint. Many good ideas. Lengthy discussion of the four great necessities, shelter, health, food, and clothing. Book tends to favor big companies, nationally advertised products. Says that primitive goods are shoddy compared with factory-made quality goods. Favors the good side of mass production, the big advertiser, the big medicine producer. Like *Dollars and Sense* and *Guinea Pigs and Bugbears*, only much more cleverly and sanely written. Likely to exert considerable influence in causing one to turn away from consumer education and lulls one to a feeling of safety and security. Possibly there are about as many fallacies in its own arguments and proofs as are pointed out in the arguments and proofs of the extremists in the consumer movement. Blames ills of consumers on an "underworld of 4,000,000 or more scoundrels willing to do anything for a price" and upon "a twilight world of 40,000,000 people of profound stupidity or ignorance or indifference."

Prescott, S. C. and Proctor, B. E. *Food Technology*. McGraw-Hill Book Co., New York, 1937.

Treats of the industries and methods by which many foods are processed and changed as they are made ready for market use. Primarily producer education, but has much necessary background material for one who is to go very far into work in consumer education. Especially valuable to aid in solution of problems dealing with consumption of particular foods.

Reich, Edward and Siegler, C. J. *Consumer Goods*. American Book Co., New York, 1937.

A textbook suggested both for business courses and consumer courses. Contains fairly detailed descriptions of a wide variety of consumer goods. Treats commodities from both production and consumption standpoints. Not much attention paid to development of generalizations dealing with consumer education, but one of the necessary books for science teachers interested in consumer education.

Schlink, F. J. *Eat, Drink, and Be Wary*. Covici, Friede, New York, 1935.

One of the exposure type consumer books. Deals with sanitary and chemical horrors about food and drink. Although the book has been much criticized for scientific errors, there is no question that its material is in the main correct. The final chapter, which attempts to develop the thesis that "man's instincts are the best guide to his

diet," is probably most open to criticism, since it is well known that there are many diets among primitive peoples which cut life short and produce disease. Many of the detailed arguments and illustrations in this chapter are correct, but the conclusion would not be acceptable to those who have studied foods and diets extensively.

Trilling, M. B., Eberhart, E. K., and Nicholas, F. W. *When You Buy*. J. B. Lippincott Co., Philadelphia, 1938.

Written as a textbook for use in separate courses in consumer buying. It is also suggested "for use in clothing, food, home management, economics, and social studies courses where consumer buying is included." Includes attention to numerous generalizations as well as specific details about some goods. Although written primarily from a combined economics and home economics viewpoint, there is much that science teachers may use.

Tucker, Milton. *Buying an Honest House*. Little, Brown & Co., Boston, 1930.

Especially good consumer buying material on determining quality of materials and workmanship in a house. Simply written and contains much practical usable material.

Watkins, R. K. and Perry, Winifred. *Science for Human Control*. The Macmillan Co., New York, 1940.

A science textbook evidently meant for ninth grade pupils. Good consumer material which deals with such general problems as "How much of modern advertising can we believe?" and "How can we have scientific attitudes in buying?" "What is in soap, tooth paste, baking powder, antiseptics, and our common foods?" "What information do we need about the things we buy at the drug and grocery stores?"

Weiss, E. B. and Mermey, Morris, editors. *The Shopping Guide*. McGraw-Hill Book Co., New York, 1937.

Described in Chapter II.

Wilson, S. R. and Mullins, M. R. *Applied Chemistry*. Henry Holt & Co., New York, 1939.

Contains a number of brief statements about consumer education, although the word "consumer" is not in the index. Previews to certain units, as one on Textiles and another on Drugs, Poisons and Cosmetics, emphasize the needs for consumer education; but the units themselves do not meet the needs very well. The textiles unit

is poor, but the other is good, especially in regard to satisfying the "What is it?" question. Although published in 1939, the book goes back to 1906 for a Pure Food and Drug Act and does not mention the 1938 Food, Drug, and Cosmetic Act.

ZuTavern, A. B. and Bullock, A. E. *The Consumer Investigates*. H. M. Rowe Co., Chicago, 1938.

A textbook for secondary school use in business classes. Of particular interest to science teachers because it helps present a picture of work being done in consumer education from a nonscientific point of view.

ASSOCIATIONS, PERIODICALS, GOVERNMENT AGENCIES,  
AND REPORTS

American Dental Association, Council on Dental Therapeutics. 212 East Superior Street, Chicago, Ill.

Described in Chapter V. All of the Council's publications appear in the *Journal of the American Dental Association*. The information in these publications may be had upon request. Available material is at present supplied in mimeographed form.

American Home Economics Association. 620 Mills Building, Washington, D. C.

Described in Chapter V. The official publication is the *Journal of Home Economics*.

American Medical Association. 535 North Dearborn Street, Chicago, Ill.

Described in Chapter V. Make first contact by requesting a price list of health publications. The *Journal of the American Medical Association* is a valuable weekly. Although articles are primarily of medical interest, science teachers will often find things of major interest and importance both in consumer education and in science education as a whole. Answers to letters from doctors often contain unusually good and direct consumer material, as safety and value of the shoe-store fluoroscope (p. 1737, May 15, 1937); typhoid food-handlers (p. 1747); current legislation and bills voted down on distribution or possession of foods, drugs, cosmetics, and biologics. Bureau of Investigation publishes reports of frauds, as "The Sabo Painless Hair Remover Fake" (p. 661, Feb. 18, 1939); articles on new groups of health practitioners, as "Naturopathy" (p. 736, Feb. 25, 1939); amount of starch in gluten bread (p. 871, March 4, 1939).

Annual Reports of most or all of the Federal government bureaus and

agencies which are listed in this bibliography often supply excellent summaries of consumer material. Such reports usually can be obtained for school libraries through congressmen. The actual cost, however, is very small.

Bureau of Home Economics. United States Department of Agriculture, Washington, D. C.

Work is described in Chapter III. As a preliminary step in becoming better acquainted with the Bureau, ask for a list of its printed publications. A reprint of a speech by Ruth O'Brien on "Standards for Consumer's Goods" is well worth having.

*Consumer Education, a News Letter.* Institute for Consumer Education, Stephens College, Columbia, Mo.

Not much information directly related to science, but contains much valuable general consumer information. One of the essential ways of keeping up to date. Published monthly except July, August, and September. Subscription 75 cents per year.

*Consumers' Digest.* Consumers' Institute of America, Inc., Washington, N. J.

A monthly publication which makes use of a great deal of Consumers' Research material. Gives some ratings but presents only recommended products. Ratings are not confidential. Considers in addition many general consumer problems. A good source of consumer material. Evidently closely associated with Consumers' Research but maintains a separate corporation.

*Consumers' Guide.* A publication of the United States Department of Agriculture, Consumers' Counsel Division, Washington, D. C.

Described in Chapter III. Address all inquiries to the Editor, *Consumers' Guide*, U. S. Department of Agriculture, Washington, D. C.

*Consumers' Research Bulletin.* Issued by Consumers' Research, Inc., Washington, N. J.

Described in the main content of this book, chiefly in Chapter IV.

*Consumers Union Reports.* Consumers Union of the United States, Inc., 17 Union Square West, New York City.

Described in the main content of this book, chiefly in Chapter IV.

Federal Trade Commission, Washington, D. C.

Services described in Chapter III. For preliminary contact, write for the regular *Monthly Summaries of Work*.

Food and Drug Administration, United States Department of Agriculture, Washington, D. C.

Work described in Chapter III. Request that you be sent the *Notices of Judgment* upon issue. Yearly report also should be examined.

*Good Housekeeping*. Monthly. Hearst Magazines, Inc., 57th Street at Eighth Avenue, New York City.

Connection with consumer education described in Chapter V.

Household Finance Corporation. 919 North Michigan Ave., Chicago, Ill.

A number of bulletins on better buymanship of such commodities as fabrics, food fats and oils, dinnerware, soap and other cleansing agents, automobile tires, cosmetics, floor coverings, household refrigerators, etc. These bulletins are listed with considerable hesitancy because they are meant to serve as an indirect advertising feature of the Household Finance Corporation. Except for their emphasis on producer education, the bulletins are well prepared. They are probably the best among the commercial bulletins available, their use in schools is widespread, and their listing here is probably justified for that reason.

*Hygeia*. American Medical Association, 535 North Dearborn Street, Chicago, Ill.

An indispensable periodical for science teachers whether or not they are interested in consumer education. It is unfortunate that the magazine sometimes carries advertising which is not as high grade as its articles.

*Industrial Standardization*. Monthly. American Standards Association, 29 West 39th Street, New York City.

Highly necessary reading in order to keep up on the progress and difficulties involved in developing a cooperative standardization program. Strongly recommended.

*Intermountain Consumers' Service, Inc.* 435 Marion, Denver, Colo.  
Similar in nature to Consumers' Research, Inc.

National Better Business Bureau, Inc. Chrysler Building, 405 Lexington Avenue, New York City.

Chapter V of this book has a brief description of the service of the Better Business Bureau. Ask for list of publications dealing with aids for business and consumers.



National Bureau of Standards, Department of Commerce, Washington, D. C.

Services described in Chapter III. For preliminary contact write for Letter Circular (LC-416) entitled "List of Publications of Interest to Household Purchasers."

North Dakota Regulatory Department, Bismarck, N. D.

Publishes numerous booklets, pamphlets, and mimeographed bulletins dealing with consumer goods. North Dakota is not the only state that has made a definite attempt to assist consumers, but this state has probably gone farther than any other. All the materials offer great possibilities, but science teachers will probably get the most ideas from bulletins on the "False and Misleading Advertising Law," "Flour Label Act," "Standards for Canned Tomatoes and Canned Peas," and bulletins on "Sanitation of Food and Drug Establishments," "Hotels and Tourist Camps," "Dairy Inspections," "Cosmetics, Deodorants and Anti-perspirants."

*Propaganda Analysis.* Institute for Propaganda Analysis, Inc., 40 East 49th Street, New York City.

Of general interest in connection with consumer education. The title indicates the nature of the work it attempts.

United States Government Printing Office, Washington, D. C.

All government publications for which there is a charge are purchased from this office. One may get free a "Weekly List of Select U. S. Government Publications" if he purchases occasional new publications. This service is an extremely valuable one.

The following periodicals are suggested for frequent examination in order that teachers may keep in close touch with the attitudes of advertising and business toward consumer problems. Other similar trade publications are likely to be just as valuable as these indicated here.

*Advertising Age.* Published weekly, 100 East Ohio Street, Chicago, Ill.

Presents the problems of advertisers as advertisers see them.

*Business Week.* Published weekly, 330 West 42nd Street, New York City.

Particularly useful. Contains a section on "Production" which is distinctly scientific in nature and may be related to consumer education. Also discusses some actions of the Federal Trade Commission from the business viewpoint.

*Food Industries.* Published monthly, 330 West 42nd Street, New York City.

Contains frequent comments on factors of interest to science teachers of consumer education. For example, in the February, 1940 issue, pp. 92-93 one finds: "To improve keeping quality, it is desirable to subject fillets and other fish products to some preservative treatment prior to freezing. Possible use of chemical preservatives depends upon the food laws enforced in different counties." The article then reports experiments under way to test preservative action of sodium benzoate, benzoic acid, potassium nitrite, hydrogen peroxide, chloroform, boric acid, hydrochloric acid, sodium hypochlorite, formaldehyde. However, no mention is made of experiments to investigate possible harmful effects on human beings when such substances are used as preservatives.

*Printers' Ink.* A journal for advertisers. Published weekly. Printers' Ink Publishing Co., 185 Madison Avenue, New York City.

Articles are usually of fairly broad interest and challenging.

*Tide of Advertising and Marketing.* Published twice monthly. 232 Madison Avenue, New York City.

Presents the problems of advertisers as advertisers see them.

Following are a few articles of specific interest because their titles indicate direct relation to the subject of this book.

"Consumer Education and Boyle's Law." *School Science and Mathematics*, June, 1938.

This article illustrates how possible it is to read extreme meanings into teaching. However, depending upon the way the subject is handled, consumer education might possibly be taught through Boyle's Law. This author argues that he did it through the "development of scientific thinking and its application in everyday life."

"The Teaching of Consumer Chemistry." M. C. Crew. *School Science and Mathematics*, June, 1939.

One of the very few published materials having to do with the function of science education in consumer buying. Suggests laboratory projects having to do with analysis of household fuels, comparison of gasolines according to fractions distilled between various temperature ranges; analysis of household ammonia and common bleaches; a comparison of several water softeners. Many good ideas, but author apologizes for working with consumer education by saying that this

was done as extra work and did not affect the regular chemistry course.

"A Consumer Approach to Science Teaching." G. P. Devoe. *Science Education*, October, 1935, pp. 95-103.

An excellent exposition of the same general view which this book takes. The reader will wish to compare the more general treatment offered in the article with the somewhat extensive treatment outlined in this book.

"Seventy-one Courses in Consumption." Henry Harap. *School Review*, October, 1938, pp. 577-596.

Helps in giving a picture of consumer education as it was at the time the survey was made. From such a basis it is possible to draw conclusions about the nature of the present trends in consumer education. The article also contains a number of valuable ideas for the conduct of consumer education.

"Science for the Consumer." W. A. Partridge and Henry Harap. *School Science and Mathematics*, March, 1933, pp. 266-274.

Consists of an analysis and classification of scientific terms used in the publications of Consumers' Research, Inc. Authors suggest that the classification will be useful to teachers of science and economics and to the curriculum worker. Among definite uses suggested is its use as a basis of a science course for consumers.

"Consumer Education in North Central Schools." B. J. Rivelt. *North Central Association Quarterly*, April, 1939, pp. 534-540.

Supplies the most complete survey to date made of consumer education. Reports on results of a questionnaire sent to all schools in Illinois, Iowa, Kansas, Indiana, Minnesota, Missouri, Colorado, Arkansas, Arizona, and samplings of other states. The part of science is not large.

## INDEX

- Advertising, 6-8, 9, 13, 21, 22, 29, 33, 41, 49, 58, 60, 64, 68, 85, 90-91, 113, 161, 164; of foods, 98, 99, 103, 105, 106; by physicians, 116; of remedies, 108-109; and science education, 195-197; testimonials, 68, 111-112
- Air conditioning, 146-148
- Alfred P. Sloan Foundation, 15
- American Association of Advertising Agencies, 6-7
- American Association of Scientific Workers, 70-71
- American Association of University Women, 82
- American Dental Association, 15, 33, 116; as source of consumer information, 82, 84-85, 95
- American Home Economics Association, 82; as source of consumer information, 86
- American Institute of Baking, 106
- American Lumber Standards, 138
- American Medical Association, 2, 15, 24, 29, 40, 116; as source of consumer information, 82, 83-84, 85, 95
- Arsenic, 52, 101-102, 193
- Aspirin, 109
- Automobile, 12-13, 20, 60, 66, 79, 80, 158-162
- Basement, 143-145
- Benson, John, 6
- Bernal, J. D., 23
- Better Business Bureau, 87-88, 89, 206
- Bibliography on Consumer Education*, 44-46, 91
- Brand names, 42-43, 56, 59, 63, 64, 87, 111, 131, 132, 164; for clothing, 121-122
- Bread, 105-106
- Bricks, 139-140
- Building, materials, 136-142; methods of, 142-148
- Bureau of Home Economics, 48, 55-56, 201
- Business, 58, 196-197
- Carbon tetrachloride, 131
- Chase, Stuart, 29
- Clothing, 4, 11-12, 31-32, 56, 61, 86, 118-134, 173
- Commercial concerns, as sources of consumer information, 91-92. *See* Business
- Communist, activity, 197-198; propaganda, 31
- Construction. *See* Building
- Consumer, "good," 205-207; and merchant, 39-41; *vs.* producer, 37-38; rights of, 50; served by testing agencies, 58, 61, 70, 78-80; use of word, 186
- Consumer education, attitudes toward, 195; courses in, 171-189; effects of, 198-199; meaning of, 16-21, 42; need for, 1-24, 185-186; shortcomings of, 97, 133-134
- Consumer Education Service, 86
- Consumer information, books as source of, 25-47; changes in, 94, 96; commercial concerns as source of, 87-88, 91-92; government agencies as source of, 48-62; magazines as source of, 88-91; private agencies as source of, 63-81; professional associations as source of, 82-86; selection of sources, 186; timeliness of, 66-67
- Consumer problems, ability to buy, 199-200; attitude toward, 205; co-operation necessary, 195; extent of, 194-195; overemphasis of facts, 191-192

- Consumers Bureau of Standards, 68-69
- Consumers' Guide*, 48, 49-51, 60, 94, 197
- Consumers' National Federation, 197
- Consumers' Research, 23, 24, 35, 36, 37, 38, 46, 63, 64-65, 72, 79
- Consumers Union, 24, 35, 37, 46, 63, 64-65, 70-71, 72, 78-79, 86, 197
- Consumers Union Reports*, 66, 70
- Cooperatives, 199, 202
- Cosmetics, 53-54, 113-114, 157, 166
- Council on Dental Therapeutics, 84, 85
- Dentifrice, 22, 32, 33, 74-75, 84, 85, 114-115
- Diet. *See* Food
- Dollars and Sense*, 30-38, 46
- Drugs, 52, 55, 61, 76, 108-111, 157, 166, 185
- Dry cleaning, 60, 129; commercial, 132-134; home, 130-132
- Eastern Cooperative Wholesale, Inc., 169
- Education, adult, 174; functional, 176-178; objectives of, 3, 4, 198-199; producer, 179-180; science, 21-22, 125, 171-172, 190-207; teacher, 187-189. *See also* Consumer education
- Education Index*, 16
- Electricity. *See* Lighting
- Epsom salt, 110
- Fabrics, shrinkage in, 126; variation in, 120-121, 122, 124, 125
- Fashion, in clothing, 12, 118-120
- Federal Trade Commission, 7, 8, 21, 22, 49, 58-59, 60, 73, 87, 90, 95, 125, 126, 201, 206
- Fertilizer, 164-165
- Food, 4, 8-10, 22, 34, 36, 37, 51, 56, 61, 80, 86, 97, 166, 173; adulteration of, 10, 99-102, 194; diet, 98-99, 104, 105, 106, 113; marketing, 106-107; irradiated, 103; processing, 102-103, 104-105
- Food and Drug Administration, 22, 29, 46, 48, 51, 54-55, 56, 58, 59, 60, 73, 95, 100, 101, 194, 195, 201, 206
- Food, Drug, and Cosmetic Act, 48, 51-52, 95, 102, 166
- General Electric Company, 154
- General Federation of Women's Clubs, 82, 83
- Generalizations, 94, 173, 192, 194; on automobiles, 159; on seeds, 163; in textbooks, 43
- Glass, in construction, 141-142
- Glauber's salt, 110
- Good Housekeeping*, 90, 95
- Goods and services, 4-5, 17, 23, 24, 54, 60-61, 182; abundance of, 199; care and use of, 170; changes in, 66; suggested study of, 157-170
- Government, 9, 14, 38, 41, 200-202; agencies, 15, 18, 33, 48-62, 64, 68, 80, 81, 94, 95-96, 127; regulations, 51-55, 99-102, 107, 188, 198
- Guinea Pig and Bugbears*, 35, 36, 37, 38, 46
- Harap, Henry, 171
- Health, 87, 146, 173; advertised treatments, 108-109; mechanical devices for, 53, 109; self-medication, 89, 109-110; service, 13-14, 80, 83-85, 97, 115-117, 157
- Heating, 148-149
- Household equipment, 86, 150-156
- Housing, 10-11, 61, 135-156
- Hygeia*, 76, 84
- Income, 9, 200; low, 5-6; in nation, 79
- Institute for Consumer Education, 16
- Insulation, for houses, 145-146
- Intermountain Consumers' Service, 63
- Journal of American Dental Association*, 84, 85
- Journal of Home Economics*, 86
- Kallet, Arthur, 34, 65
- Labeling, descriptive, 168; of drugs, 52, 53, 54, 55; for fabrics, 123-126, 127; grade, 86, 169; for soap, 129; by stores, 88

- Laundry, equipment, 144-145; service, 60, 129-130
- Laxative, 110-111, 112-113
- Lead, 52, 101-102, 193
- League of Women Shoppers, 197
- League of Women Voters, 82
- Legislation, 52, 58, 61, 83, 86
- Leisure, 12-13
- Lighting, home, 154-155
- Literature, 7, 16, 67; bibliographies, 44-47, 51; commercial publications, 87, 91-92, 94, 95, 180; conflict between books, 28-38, 95; from Federal agencies, 49-51, 54-57, 58, 62; magazines, 88-91, 95; from professional agencies, 83-86; science textbooks, 22-24, 41-44; shopping guides, 38-39
- Lumber, 136-139
- Magnesium sulfate. *See* Epsom salt
- Manufacturer, 38, 40, 61, 122, 123, 124, 127, 161
- Matthews, J. B., 93
- Medicine, 22, 23, 34, 36, 37, 103, 110-111; advertised, 108; nonofficial, 53-54
- Merchant, 38, 39, 40, 61, 121-122
- Metropolitan Life Insurance Company, 91
- Monthly Summaries of Work*, 7, 58-59
- Naphtha, 131
- National Bureau of Standards, 22, 29, 30, 34, 56-57, 58, 61, 73, 95, 201
- National Conference of Charities and Correction, 150
- National Hardwood Lumber Association, 139
- North Dakota Regulatory Department, 183
- Nose drops, 76
- Notices of Judgment*, 46, 54-55, 100, 194
- 100 Million Guinea Pigs*, 34, 35, 37, 65
- Paint, 183-184
- Physicians, 112, 115
- Post Office Department, 49
- Producer, 37, 50, 61; education, 179-180
- Public Health Service, 58
- Pure Foods and Drugs Act, 2
- Rayon, 125, 127
- Recreation. *See* Leisure
- Refrigeration, 77, 151-153, 161
- Rent, of housing, 148-149
- Research, in educational institutions, 82, 92-94, 95; distortion of scientific, 23; textile, 126-127
- Roofing materials, 140-141
- Saturday Evening Post*, 106
- Schlink, F. J., 29, 34, 35, 36, 37, 65
- Schools, and consumer education, 11-12, 14-15, 17-18, 24, 30, 52, 67, 92, 171-178, 205
- Science in General Education*, 23-24, 28, 44-47
- Scientific method, 192-194
- Seeds, 162-164
- Shelter. *See* Housing
- Shopping Guide*, 39-40
- Shrinkage, of fabrics, 126; of lumber, 136-137
- Soap, 22, 30, 41-42, 66, 79, 97, 114; kinds of laundry, 127-129
- Social Function of Science, The*, 23-24
- Standardization, 31, 32, 86, 96, 107, 199, 202-205; of dry cleaning, 134; of fabrics, 122-123, 125; for housing, 149-150; of lumber, 138-139; qualitative, 167-168; quantitative, 166-167
- Stephens College, 6, 16
- Stone, 140
- Teacher, appeal to college, 188-189; inadequately trained, 186-187; science, 19-20, 24, 25-26, 31, 32, 33, 34, 35, 38, 41, 56, 60, 61, 67, 70, 79, 87-88, 91, 92, 94, 95, 96, 101, 108, 116, 151, 176
- Testing, 21-22; complexity of, 183; in school laboratory, 180-182, 188; textiles, 120, 126-127
- Testing agencies, 15, 17, 40, 57, 58,

- 59, 63, 94, 95, 96, 158, 159; appreciation of, 80-81; of department stores, 88; differences in, 64-65, 77-78; financing of, 71-72; limitations of, 72-75, 78, 80, 192; opposition of physicians to, 75-77; selection of, 67-68, 68-71. *See* Government
- Transportation. *See* Automobile
- U. S. Department of Agriculture, 48, 51-52, 54, 55, 73, 102, 201
- U. S. Department of Commerce, 48
- Vacuum cleaner, 66, 73, 151, 153-154, 161
- Vitamins, 9, 103-104
- Washing machine, 66, 161
- Weighting, 77-78
- Weights and measures, 165-167
- Wheeler-Lea Act, 58
- Wood. *See* Lumber
- Wool, 122, 123, 124, 125
- Your Money's Worth*, 2-3, 29-32, 34, 37, 46

## THE SCIENCE IN MODERN LIVING SERIES

---

**LIFE AND ENVIRONMENT.** By PAUL B. SEARS. An ecological study. 175 pp. Cloth \$1.85.

**THE STOREHOUSE OF CIVILIZATION.** By C. C. FURNAS. The story of our natural resources. 562 pp. Cloth \$3.25.

**THE CONTROL OF ORGANISMS.** By FREDERICK L. FITZPATRICK. An account of man's struggle to master his natural enemies. 352 pp. Cloth \$2.75.

**SCIENCE EDUCATION IN CONSUMER BUYING.** By GEORGE L. BUSH. An appraisal of sources of consumer information and illustrative subject matter for natural science courses. 228 pp. Cloth \$2.

## SUGGESTIONS FOR TEACHING IN MODERN EDUCATION

---

**GENETICS.** By ANITA D. LATON and EDNA W. BAILEY. A teacher aid in interpreting genetic principles. 66 pp. Paper 50 cents.

**SEX RESPONSIVENESS, MATING, AND REPRODUCTION.** By ANITA D. LATON and EDNA W. BAILEY. Specific suggestions for teaching and evaluation. 118 pp. Paper 75 cents.

**ELECTRICITY.** By ROBERT STOLLBERG. A teacher aid in selecting and arranging materials from the vast accumulation of knowledge about electricity. 142 pp. Cloth 75 cents.

## ILLUSTRATIVE MATERIALS IN SCIENCE

---

**ENRICHED TEACHING OF SCIENCE IN THE HIGH SCHOOL.** By MAXIE N. WOODRING, MERVIN E. OAKES, H. EMMETT BROWN. A source book for science teaching, listing chiefly free and low cost illustrative and supplementary materials. 402 pp. \$3.25.

---

BUREAU OF PUBLICATIONS  
Teachers College, Columbia University, New York City