

# Books of the Week

TO SERVE YOU: To get books, send us a check or money order to cover retail price. Address Book Dept., SCIENCE NEWS LETTER, 1719 N St., N. W., Washington 6, D. C. Ask for free publication direct from issuing organizations.

AMERICAN WILDLIFE AND PLANTS: A Guide to Wildlife Food Habits—the Use of Trees, Shrubs, Weeds and Herbs by Birds and Mammals of the United States—Alexander C. Martin, Herbert S. Zim and Arnold L. Nelson—*McGraw-Hill*, 500 p., illus., \$7.50. Prepared under the direction of the United States Fish and Wildlife Service at the Patuxent Research Refuge, Laurel, Md.

ANTIPYRINE: A Critical Bibliographic Review—Leon A. Greenberg—*Hillhouse*, 136 p., \$4.00. A reference tool for all research workers studying analgesic drugs.

ATOMIC EXPLOSION, FRENCHMAN'S FLAT, NEV.: U. S. Atomic Energy Test Program, Jan.-Feb., 1951—Atomic Energy Commission—*Govt. Printing Office*, 1 p., 17x20, 25 cents. A four color process reproduction of a striking natural color official photograph. (See p. 19.)

BASIC EXERCISES IN COLLEGE BIOLOGY—James A. Dawson and William Etkin—*Crowell*, 232 p., illus., paper, \$2.25. A basic biology manual providing the student with clear and complete instructions, both verbal and visual.

CHEMICAL SPECTROSCOPY—Wallace R. Brode—*American Society for Testing Materials*, 47 p., illus., paper, \$1.35. The 1950 ASTM Edgar Marburg Lecture on the development and use of spectroscopic methods in analytical control.

CIVIL DEFENSE IN MODERN WAR: A Text on the Protection of the Civil Population against A-B-C Warfare—Augustin M. Prentiss—*McGraw-Hill*, 429 p., illus., \$6.00. A program of civil defense covering every major aspect from atomic attack to bacterial and chemical warfare.

CONTROL OF HOUSEHOLD INSECTS—A. E. Michelbacher and Deane P. Furman—*California Agricultural Extension Service*, 34 p., illus., paper, free upon request to publisher, University of California, 22 Giannini Hall, Berkeley 4, Calif. Measures to be taken against the insects commonly found in California homes but many are of general distribution.

CREATIVE HANDS: An Introduction to Craft Techniques—Doris Cox and Barbara War-

ren—*Wiley*, 2nd ed., 381 p., illus., \$6.50. A book compiling the numerous craft techniques and designed especially for the beginner.

THE DINOSAUR BOOK: The Ruling Reptiles and Their Relatives—Edwin H. Colbert—*McGraw-Hill*, 2nd ed., 156 p., illus., \$4.00. The story of amphibian and reptilian evolution with particular emphasis on the dinosaurs.

ESSENTIALS OF CHEMISTRY—Alfred Benjamin Garrett, Joseph Fredric Haskins and Harry Hall Sisler—*Ginn*, 570 p., illus., \$5.00. An introductory text for students not intending to specialize in the field.

EXPERIMENTAL STUDIES IN BASIC COLLEGE CHEMISTRY—Everette L. Henderson—*Crowell*, 246 p., illus., paper, \$2.50. A workbook for Babor's "Basic College Chemistry," although useful with other texts.

GENERAL COLLEGE CHEMISTRY—Joseph A. Babor and Alexander Lehrman—*Crowell*, 3rd ed., 800 p., illus., \$5.00. A text intended for the more able and scientifically minded students in freshman chemistry.

GENETICS IN THE 20TH CENTURY: Essays on the Progress of Genetics during Its First 50 Years—L. C. Dunn—*Macmillan*, 634 p., illus., \$5.00. The thought and study of some of the most distinguished geneticists of our day as represented in invitation papers at the Golden Jubilee of Genetics at the Ohio State University.

GOOD SCHOOLS DON'T JUST HAPPEN—*Science Research Associates*, 24 p., illus., 10 cents. This booklet lists the goals of school and community and tells how the problems of youth may be met by the individual.

HIGHWAYS WITH A NARROW MEDIAN—*Highway Research Board* Bul. 35, 95 p., illus., paper, \$1.50. A summary of the reports from seven State Highway Departments on narrow highway safety islands under various conditions.

INDEX TO THE SEMI-ANNUAL REPORTS TO CONGRESS—U. S. Atomic Energy Commission—*Govt. Printing Office*, 40 p., paper, 20 cents. The index to the reports that cover the unclassified progress and activities of the AEC from Jan. 1947 to Jan. 1951.

THE MEASUREMENT OF LOW AIR SPEEDS BY THE USE OF TITANIUM TETRACHLORIDE: Research Report 25—Elmer G. Smith, Bob H. Reed, and H. Darwin Hodges—*Texas Engineering Experiment Station*, 22 p., illus., paper, single copies free upon request to publisher, Texas Engineering Experiment Station, College Station, Texas. After soap bubbles, puffs of smoke and toy rubber balloons failed, titanium smoke was successfully used for measuring low air speeds under 100 feet per minute.

MOST-OFTEN-NEEDED 1951 RADIO DIAGRAMS AND SERVICING INFORMATION WITH COMPLETE INDEX—M. N. Beitman—*Supreme Pub-*

lications, 192 p., illus., paper, \$2.50. A manual of 1951 radio service material including AM and FM types, portables, auto sets, combinations, and record changers with a complete index to the previous ten radio and five TV volumes.

MUSICAL ACOUSTICS—Charles A. Culver—*Blakiston*, 3rd ed., 215 p., illus., \$4.25. An explanation of the physical principles involved in the production and transmission of musical sounds.

NATIONAL AIRPORT PLAN, 1951—Civil Aeronautics Administration—*Govt. Printing Office*, 218 p., illus., paper, \$1.25. A plan and program prepared to aid in development of a national system of airports which will care for all the needs of civil aviation. (See p. 25.)

NATIONAL DEFENSE AND HIGHER EDUCATION: The Report of a Conference of Representatives of Member Organizations of the American Council on Education at Washington, D. C., Jan. 19-20, 1951—Francis J. Brown—*American Council on Education*, 121 p., paper, \$1.00.

THE NORTHERN AND CENTRAL NOOTKAN TRIBES—Philip Drucker—*Smithsonian Institution, Bureau of Ethnology*, 480 p., illus., paper, \$1.50. An account of the social organization and culture of the Nootkan tribes of Vancouver Island.

THE PRESERVATION OF WILDERNESS AREAS—C. Frank Keyser—*U. S. Govt. Printing Office*, 114 p., paper, free upon request to Committee on Merchant Marine and Fisheries, Old House Office Building, Washington, D. C. An analysis of opinion on the problem prepared by the Library of Congress.

REPORT OF THE NATIONAL ACADEMY OF SCIENCES, NATIONAL RESEARCH COUNCIL, 1948-1949—*U. S. Govt. Printing Office*, 171 p., paper, 40 cents.

STATISTICS OF NONPUBLIC SECONDARY SCHOOLS, 1947-1948—Rose Marie Smith—*U. S. Govt. Printing Office*, 11 p., paper, 10 cents. Chapter 7 of "Biennial Survey of Education in the United States, 1946-48."

THE TECTONICS OF MIDDLE NORTH AMERICA: Middle North America East of the Cordilleran System—Philip B. King—*Princeton University Press*, 203 p., illus., \$3.75. A description of the architecture of the rock formations of the eastern United States.

WOOD FUEL: Report of Conference at Philadelphia, May 10, 1951—*Northeastern Wood Utilization Council Inc.*, 77 p., illus., paper, \$3.00. Describing methods recently developed to burn wood waste as fuel.

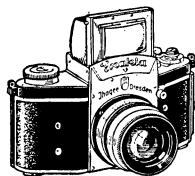
Science News Letter, July 14, 1951

## INVENTION

### New Copper-Silver Alloys Give Better Electric Joints

► COPPER-SILVER alloys suitable for electrical contacts where high electrical conductivity in conjunction with high strength and resistance to wear are required brought John Sykes, Enfield, England patent 2,559,031. Rights have been assigned to Enbeld Rolling Mills Limited, also of Enfield, England.

Science News Letter, July 14, 1951



### EXAKTA "V" 35mm Single Lens Reflex Camera

One lens both for viewing and picture taking assures perfect sharpness, accurate exposure, maximum depth of field, and correct composition for color. You always see the exact image before you take the picture—whether the subject is an inch or a mile away, whether it is microscopic or gigantic, whether it is moving or stationary. Instantly interchangeable lenses permit telephoto, wide angle, close-up, copy and microscope photography. With 13.5 Zeiss Tessar "T" Coated Lens ..... \$180.00 plus tax  
Write Dept. 900 For Free Booklet "V"

NATURE PHOTOGRAPHY WITH MINIATURE CAMERAS by Alfred M. Bailey (Denver Museum of Natural History). This eminent explorer and scientist displays his finest Exakta photographs and others along with explanatory material. 35 full page photographs. 64 pages ..... 50c  
EXAKTA CAMERA CO., 48 W. 28th St., New York 1, N.Y.

## ELECTRONICS

# Bead Amplifies Current

Small electrical bead, only half-pea size, amplifies current a million times. Called a junction transistor, it operates on a millionth of a watt.

## See Front Cover

➤ A RADICALLY new and effective amplifier, called a junction transistor, was announced by Bell Telephone Laboratories.

Although only half the size of a pea, it amplifies electrical signals a million times. It requires only a millionth of the power of the smallest miniature electron tube that it threatens to replace.

The new spidery object consists of a small bead, 3/16 inch in diameter, with three wires extending from it. It is extremely efficient and rugged. It operates on about a millionth of a watt, which is far less power than an ordinary flashlight bulb.

Its inventor is Dr. William Shockley who during the past three years has directed the research group pioneering the development of the new amplifying transistors, a new group of electrical device.

The radically new type of transistor now produced in small quantities has "astonishing properties never before achieved in any amplifying device."

The junction transistor consists of a tiny rod-shaped piece of germanium, treated so that it contains a thin electrically positive layer sandwiched between the two elec-

trically negative ends. The entire rod is encased in a hard plastic bead with wire leads connected to each of the three regions. This new transistor occupies about 1/400 of a cubic inch, whereas a typical sub-miniature tube occupies about 1/8 of an inch.

Transistors are devices that are based upon the properties of materials called semiconductors, among which is the metal germanium. Transistors can act as amplifiers for telephone and television circuits and provide detection and amplification as in ordinary radio sets. Another kind of transistor can serve as a photoelectric cell.

In addition to the new type of transistor, the original type of transistor has been developed so that these devices will be put into actual use in the Bell System early next

year. They are now made so as to be uniformly reliable and uniform as to characteristics.

Associated with Dr. Shockley are Morgan Sparks and G. K. Teal, who built the first of the new type transistors, R. L. Wallace, Jr., and W. J. Pietenpol, who have been working on their development, and J. A. Morton, who directed work on the reliability and reproducibility of transistors.

Science News Letter, July 14, 1951

## INVENTION

## Resin Makes Paper as Strong When Wet as Dry

➤ PAPER THAT is strong when wet as well as when dry is made of the ordinary cellulosic paper-making fiber to which a melamine-formaldehyde resin is added. After the material has been formed into a felt, heat is applied to cure the resin.

Patent 2,559,221 was granted to Charles S. Maxwell, Old Greenwich, and Chester G. Landes, New Canaan, Conn., the inventors. American Cyanamid Company of New York has acquired the patent rights.

Science News Letter, July 14, 1951

## NUTRITION

## Powdered Eggshell Makes Better Gingerbread

➤ GINGERBREAD, hot rolls and other baked goods from prepared mixes will taste a little better and be quite a bit more nourishing if powdered eggshell is added to the mix.

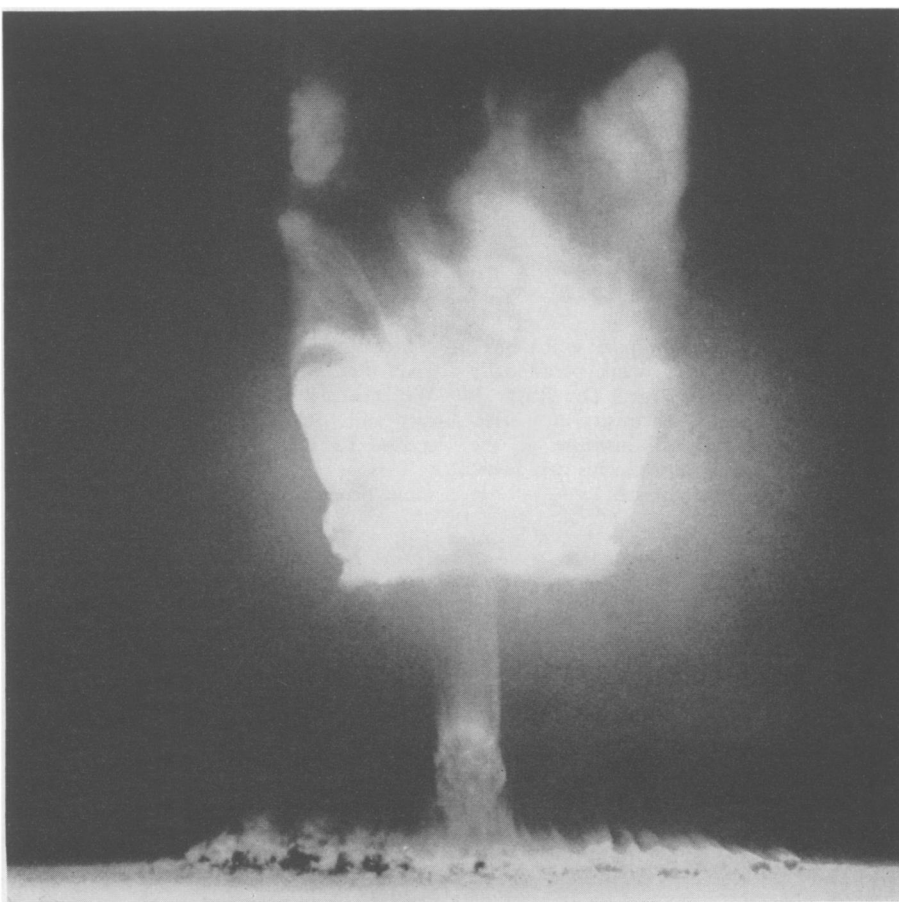
Tests showing this were reported by Dr. Helen B. Burton and Miss Eula Mae Lincecum of the University of Oklahoma at the meeting of the American Home Economics Association in Cleveland.

Calcium carbonate, or chalk, also gave good results.

Object of adding either substance is to increase the amount of calcium in the diet. American diets often are lacking in sufficient of this bone and tooth building chemical. The rising cost of milk, our best food source of calcium, often prevents families from improving their diet by using more milk, Dr. Burton pointed out.

The powdered eggshell and calcium carbonate would be inexpensive ways of adding calcium to the diet.

Science News Letter, July 14, 1951



**NEVADA ATOMIC EXPLOSION**—Although unlike any of the now familiar above-ground atomic bursts, this official Atomic Energy Commission photograph shows an atomic explosion at Frenchman's Flat, Nevada, during the January-February tests. The picture is available in color. (See page 30.)