



COUNTS MONEY—Worn-out paper money is put through this machine where an electric eye counts the bills. It can handle 30,000 bills per hour and rejects packages containing more or less than the correct number, 100.

ELECTRONICS

Machine Counts Worn Paper Currency

► YOUR beat-up, worn-out old bills, which must be counted before they can be retired and destroyed, will soon make their last as well as their first bow to a machine.

The National Bureau of Standards has just demonstrated an automatic, electronic machine for counting old paper money. New currency has been machine-counted for many years, but handling wrinkled, dog-eared notes was a difficult problem, calling for hand counting. Over eight tons of currency are redeemed every day, about

80% consisting of one-dollar bills.

Money returned to the Treasury for retirement is in the form of stacks of 100 notes, cut in half lengthwise. The machine, designed by H. M. Joseph and Carroll Stansbury of the Bureau, counts the half-notes in these packets at the rate of 30,000 bills per hour and rejects those with more or less than 100. From an inclined trough, a metal finger pulls the bottom packet, then wraps it tightly around a spindle, spreading the outer edges of the notes against

a curved metal plate. The spindle rotates the ends of the notes while a jet of air separates the notes from the packet.

A photoelectric eye catches the interruption of a light beam as the notes are unfurled. An electronic unit adds up the individual impulses, using the sum to actuate a sorting vane. Only those packets rejected by the machine, known as the NBS Electronic Currency Counter, need be counted laboriously by hand.

Science News Letter, February 3, 1951

• 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 NEWSLETTER, 1719 N St., N. W., Washington 6, D. C. Ask for free publication direct from issuing organizations.

ADVANCES IN CARBOHYDRATE CHEMISTRY, Vol. 5—Claude S. Hudson and Sidney M. Cantor, Eds.—*Academic Press*, 322 p., illus., \$6.80. Volume 5 of this series presents such topics as Enzymatic Synthesis of Sucrose and Other Disaccharides, Enzymes Acting on Pectic Substances, and The Commercial Production of Crystalline Dextrose.

ATLAS OF HISTOLOGIC DIAGNOSIS IN SURGICAL PATHOLOGY—Karl T. Neuberger—*Williams and Wilkins*, 460 p., illus., \$11.00. The essential histologic lesions are presented by means of black and white photomicrographs. A section on exfoliative cytology by Walter T. Wikle is included.

THE ATOM AT WORK—Jacob Sacks—*Ronald*, 327 p., illus., \$4.00. A brief history of atomic energy and its applications. For the layman.

DRAGONS IN AMBER: Further Adventures of a Romantic Naturalist—Willy Ley—*Viking Press*, 328 p., illus., \$3.75. The author conducts the reader on a tour of strange fauna and flora. About one third of the book deals with animals and plants which suddenly made themselves at home in countries where they did not belong, such as the Japanese beetle. Other portions of the book tell the history of amber and the romantic tale of the woolly mammoth.

EARLY EMBRYOLOGY OF THE CHICK—Bradley M. Patten—*Blakiston*, 4th ed., 244 p., illus., \$3.50. A standard embryology text brought up-to-date.

FLORA OF PERU—J. Francis MacBride—*Field Museum of Natural History*, Publ. 653, 218 p., paper, \$1.75. A taxonomic listing of the vegetation of this country.

THE FROG: Its Reproduction and Development—Roberts Rugh—*Blakiston*, 336 p., illus., \$4.25. A description of the embryology of the frog. An excellent glossary of embryological terms is included.

IMPROVED NAILS FOR BUILDING CONSTRUCTION—E. George Stern—*Virginia Polytechnic Institute*, 23 p., illus., paper, 25 cents. A comparison of grooved nails with plain-shank and other type nails.

INGENIOUS MECHANISM FOR DESIGNERS AND INVENTORS, Vol. III—Holbrook L. Horton, Ed.—*Industrial Press*, 536 p., illus., \$6.00. A reference book.

AN INTRODUCTION TO THE SCIENCE OF PHOTOGRAPHY—Katherine Chamberlain—*Macmillan*, 292 p., illus., \$4.75. The physics of photography is stressed in this book written primarily for those studying photography without an instructor.

KOREA: An Annotated Bibliography of Publications in Far Eastern Languages—Edwin G. Beal, Jr. and Robin L. Winkler, Compilers—*Library of Congress*, 167 p., paper, \$1.15. Essentially an expansion of the book, *KOREA: A Preliminary Bibliography* which was issued in July, 1950.

KOREA: An Annotated Bibliography of Publications in the Russian Language—Albert Parry, John T. Dorosh and Elizabeth Gardner Dorosh, Compilers—*Library of Congress*, 84 p., paper, 65 cents. Covers books, monographs and periodical articles.

LABORATORY MANUAL FOR BRIEF COLLEGE CHEMISTRY—Leon B. Richardson and Andrew J. Scarlett—*Holt*, rev. ed., 229 p., illus., paper, \$2.00. To accompany the authors' text, *Brief College Chemistry*.

THE LA PORTE METEORITE—Sharat Kumar Roy and Robert Kriss Wyant—*Field Museum of Natural History*, 9 p., illus., paper, 25 cents. A brief history and geological analysis.

LEATHERCRAFT: Techniques and Designs—John W. Dean—*McKnight*, 251 p., illus., \$5.00. Techniques of the master craftsmen.

METHODS AND MATERIALS FOR TEACHING GENERAL AND PHYSICAL SCIENCE—John S. Richardson and G. P. Cahoon—*McGraw-Hill*, 485 p., illus., \$4.50. Many practical suggestions for developing laboratory skills. For elementary and high school science teachers.

MOTION AND TIME STUDY: Principles and Practice—Marvin E. Mundel—*Prentice-Hall*, 457 p., illus., \$6.65. A college text. Many problems are included for practice.

NATURAL CHILDBIRTH: A Manual for Expectant Mothers—Frederick W. Goodrich, Jr.—*Prentice-Hall*, 176 p., \$2.95. A handbook containing many helpful hints for mothers-to-be.

THE ORIGINS OF MODERN SCIENCE 1300-1800—H. Butterfield—*Macmillan*, 187 p., \$3.00. A brief history of modern science showing the effects of happenings from 1300 to 1800.

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